2022 ESG

Sustainability Report

CanadianSolar

MAKE THE DIFFERENCE

Forward Looking Statements

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Certain statements in this report are forward-looking statements that involve a number of risks and uncertainties that could cause actual results to differ materially. These statements are made under the "Safe Harbor" provisions of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements may be marked by such terms as "believes," "expects," "anticipates," "intends," "estimates," or other comparable terminology. Though the Company considers its expectations expressed in such forward looking statements reasonable, it cannot guarantee their realization. The Company refers readers to a more detailed discussion of the risks and uncertainties contained in the Company's annual report on Form 20- F, as well as other documents filed with the U.S. Securities and Exchange Commission. In addition, all information provided in this report, including these forward looking statements, is as of the date of this report's release on the Company's website unless otherwise stated, and the Company undertakes no duty to update such information except as required under applicable law.

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Message from the Chief Executive and Chief Sustainability Officers

We are pleased to present Canadian Solar's annual ESG Sustainability Report, which showcases the incredible progress we have made as a clean energy company committed to sustainable practices. As the world faces pressing environmental challenges, we are proud to be at the forefront of the clean energy revolution, driving positive change while delivering value to our stakeholders.

This report serves as a transparent account of our efforts to integrate sustainability into every aspect of our business, showcasing the positive impact we have had on the environment, our employees, the communities we serve, and broader stakeholders at large. We would like to highlight three key areas of focus in this year's report:

1. We have significantly expanded our participation in international ESG initiatives, recognitions, and certifications. First, we are supporters of United Nations' Sustainable Development Goals, or SDGs. Recently, we joined the United Nations Global Compact, committing to support and adhere to the Ten Principles of the UNGC on human rights, labor, environment, and anti-corruption. We have also submitted a commitment letter to SBTi indicating our intention to set the near-term and net-zero science-based climate targets. Last year, we received a Prime ESG rating from Institutional Shareholder Services (ISS), placing us among the top 5 percentile of the nearly 100 global companies rated in our industry. We also received an Excellent ESG rating from Achilles, a reputable UK agency evaluating environmental, social and governance factors across supply chains. We have also committed to provide climate disclosures through CDP and expect to receive a score this year. In addition, we have expanded our universe of certifications in ISO 9001, ISO 14001, ISO 45001, ISO 50001, covering a range of management systems. This is all in addition to the disclosures that we have been providing for three years in accordance with SASB, TCFD and GRI. Finally, we remain the #1 most bankable solar module supplier rated by Bloomberg New Energy Finance, a recognition we have held for many years.

2. In addition to helping our customers and other partners reduce their carbon emissions and environmental impact, we also continue to reduce the environmental impact from our own operations. In 2022, we reduced our year-over-year GHG emissions, energy, water, and waste intensity by 3%, 7%, 30% and 15% respectively. Specifically, on GHG emissions disclosures, we made further progress towards a more holistic measure of climate impact, disclosing certain scope 3 emissions. And we remain committed to achieving 100% renewable energy generation before the end of the decade. In this year's report, we highlight our focus on further improving our positive impact on biodiversity, especially during project development and operations and maintenance of our solar and battery energy storage projects.

3. We continue to ensure ethical labor practices in our own operations and those of our suppliers. Last year, we conducted 122 supplier ESG audits and initiated a third-party assessment to evaluate the effectiveness of our Anti-Modern Slavery Policy, Supplier Code of Conduct, and Human Rights Policy in preventing forced labor, among other initiatives. Specifically, we engaged the Responsible Business Alliance to conduct a Validated Assessment Program, the gold standard, covering areas of labor practices, health and safety, environment, ethics, and management systems. This is a lengthy process which we are rolling out to various facilities and will report back in due course.

We are proud of the progress we have made, but we recognize that our ESG efforts are a long-term exercise to improve and to hold ourselves accountable. We thank you for your interest in Canadian Solar and look forward to engaging with you further.

Shawn Qu
Chairman and Chief Executive Officer

Hanbing Zhang
Chief Sustainability Officer

Highlights

22-year track record as a global tier 1 player in the solar industry

- Around **94 GW** of solar modules delivered to customers across the world, equivalent to displacing approximately **240 million tons** of CO_2 emissions, powering over **23 million** households
- Nearly **9 GWp** of solar projects and **3 GWh** of energy storage projects energized worldwide
- Over **18,000** employees globally
- **36%** of workforce is female, with **25%** of middle management positions and **8%** of senior management positions filled by women in 2022
- Bloomberg New Energy Finance – **#1 most bankable** solar module supplier with 100% bankability
- **100% Revenues related to renewable energy**
- Solar modules have **greenhouse gas (GHG) payback time of 1 year**, after which they become carbon neutral assets that typically last for 30 years or longer
- Italian **EPD** and French **ECS** Lifecycle certifications for solar modules
- **ISO Certifications:**

  ISO9001 Quality management system
  ISO14001 Environmental management system
  ISO45001 Occupational health and safety system
  ISO50001 Energy management system

2017 --- 2022 Energy Conservation and Emission Reduction

20% decrease in GHG emissions intensity

25% decrease in energy intensity

67% decrease in water intensity

45% decrease in waste intensity

ESG Goals

On track to achieve the goal of powering global operations with 100% renewable electricity before 2030

From 2022 to 2027, we are targeting:

28% decrease in GHG emissions intensity

29% decrease in energy intensity

26% decrease in water intensity

23% decrease in waste intensity

Highlights

International ESG Initiatives and Recognitions

United Nations Global Compact
Active Participant

Climate Change 2023 Questionnaire
Submitted

ISS ESG Corporate Rating
Prime Status

Science Based Targets
Commitment Letter Submitted

Achilles ESG Assessment
Excellent Rating

RBA Validated Assessment Program
Silver-Level Recognition

By joining the **United Nations Global Compact (UNGC)**, Canadian Solar is committed to supporting the Ten Principles of the UNGC on human rights, labor, environmental, and anti-corruption, and contributing to the achievements of the **United Nations Sustainable Development Goals (SDGs)**.

Our work has contributed to the following UN SDGs, including but not limited to:

1 About Canadian Solar

Canadian Solar Inc. (the "Company" or "Canadian Solar") was founded in 2001 in Canada and is one of the world's largest solar and battery energy storage companies.

Canadian Solar is a leading manufacturer of solar photovoltaic modules and provides comprehensive solutions for solar energy and battery storage. It is also a developer of utility-scale solar power and battery storage projects with a geographically diversified pipeline in various stages of development. Canadian Solar has successfully delivered approximately 94 GW of premium-quality, solar photovoltaic modules to customers. Moreover, since entering the project development business in 2010, Canadian Solar has developed, built, and connected nearly 9 GWp of solar power projects and 3 GWh of battery storage projects across the world. Currently, the Company has approximately 600 MWp of solar power projects in operation, 7 GWp of projects under construction or in backlog (late-stage), and an additional 18 GWp of projects in advanced and early-stage pipeline. In addition, the Company has a total battery storage project development pipeline of 47 GWh, including 2 GWh under construction or in backlog and an additional 45 GWh at advanced and early-stage development. Canadian Solar is one of the most bankable companies in the solar and renewable energy industry, having been publicly listed on the NASDAQ since 2006.

1 MW SunEnergy Utility Solar Plant, Spain

The Company has two business segments: CSI Solar and Recurrent Energy (formerly Global Energy).

CSI Solar consists of solar module and battery storage manufacturing, and delivery of total system solutions, including inverters, solar system kits and EPC (engineering, procurement, and construction) services. CSI Solar's battery storage business includes both its utility-scale turnkey battery system solutions, as well as a small but growing residential battery storage business. These storage systems solutions are complemented with long-term service agreements, including future battery capacity augmentation services.

Recurrent Energy (formerly Global Energy) is one of the world's largest clean energy project development platforms with 14 years' experience delivering nearly 9 GW of solar power projects and 3 GWh of battery storage projects. It is vertically integrated and has strong expertise in greenfield origination, development, financing, execution, operations and maintenance, and asset management.

North America

Canada
Guelph: Global HQ
Calgary

U.S.
Austin: North America HQ
Walnut Creek
New York City

Europe

Germany
Munich: EMEA CSIS HQ
Frankfurt

U.K.
London

Poland
Warsaw

Spain
Madrid: EMEA RE HQ

Italy
Milan

France
Biarritz

Netherlands
Amsterdam

Latin America

Brazil
São Paulo

Mexico
Mexico City

Colombia
Bogotá

Chile
Santiago

Middle East and Africa

U.A.E.
Abu Dhabi
Dubai

South Africa
Cape Town

Asia Pacific

P.R. China
Suzhou: China HQ
Beijing
Changshu
Funing
Yancheng
Dafeng
Luoyang
Baotou
Jiaxing
Jiuquan
Suqian
Xining
Taiyuan
Jinan
Guangzhou
Hong Kong, SAR

Taiwan, China
Hsinchu

Japan
Tokyo
Osaka
Fukuoka
Sendai

South Korea
Seoul
Gwangju

India
New Delhi

Thailand
Chonburi

Vietnam
Hai Phong

Malaysia
Kuala Lumpur

Singapore
Singapore

Australia
Melborne
Sydney

Manufacturing operations

Sustainability at Canadian Solar

As a global leader in the renewable energy sector, Canadian Solar's mission is to power the world with solar energy and contribute to creating a cleaner Earth for future generations.

The total electricity generated by 94 GW of cumulative solar modules we shipped over the past 22 years is equivalent to displacing approximately 240 million[1] tons of CO_2 emissions or powering over 23 million households.

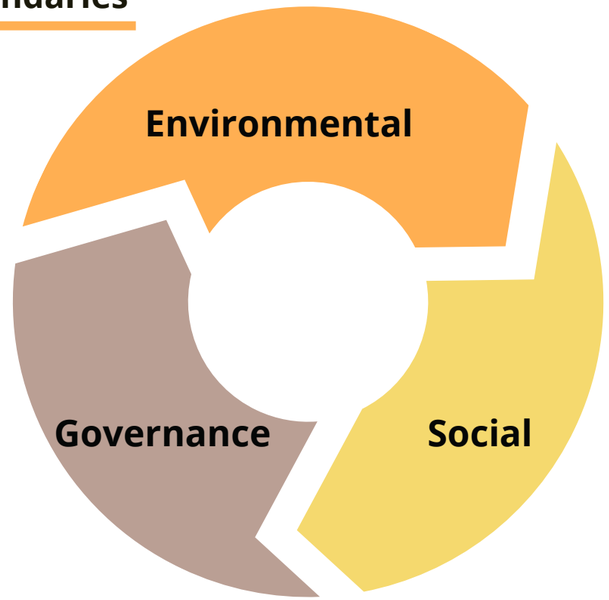
At Canadian Solar, we embed Environmental, Social, and Governance considerations into our business and strategic decisions, continuously striving to improve our practices to ensure long-term sustainability.

Working sustainably within our planetary boundaries

- GHG emissions and manufacturing energy intensity
- Commitment to 100% renewable energy before 2030
- Solar PV system carbon payback time of 1 year
- Water intensity management
- Material use, waste, and circularity
- Environmental stewardship in project development
- Assessing climate risks and opportunities

Demonstrating responsible conduct

- Policies and procedures
- Board level oversight
- Appropriate due diligence processes
- Responsible supply chain management
- Robust ESG reporting
- Transparency and risk management



The following corporate policies provide a framework for Canadian Solar's sustainability commitments:

Environmental

- Environment, Occupational Health, and Safety Policy (link)

Social

- Labor and Human Rights Policy (link)
- Equal Employment Opportunity Policy (link)
- Anti-Modern Slavery Policy (link)
- Diversity Policy (link)
- Supplier Code of Conduct (link)
- Conflict Minerals Policy (link)

Governance

- Code of Business Conduct and Ethics (link)
- Whistleblower Policy (link)
- Insider Trading Policy (link)
- Related-Party Transactions (link)
- Prohibition against Giving Bribes (link)
- Prohibition against Accepting Bribes (link)

Committing to socially responsible and equitable outcomes

- Human rights
- Equal opportunity employer
- Equity, diversity, and inclusion
- Talent strategy, training, and development
- Freedom of association and collective bargaining
- Health and safety
- Community commitments and partnerships

1 Actual CO_2 net avoided emissions depend on specific PV project location, application, and grid electricity mix. The estimate presented here intends to provide an approximate value of the contribution of PV energy production against climate change. Calculations are based on utility PV annual average capacity factor and avoided CO_2 emissions rate as reported by the U.S. Environmental Protection Agency (EPA). GHG emissions from PV modules and balance of systems (BOS) manufacturing, as well as transport, construction, operation and decommissioning have been taken into account. Please see EPA website for further details (link).

Approach to Environment, Health, and Safety (EHS)

Canadian Solar is committed to providing a safe and fulfilling work environment for all our employees and contractors. Additionally, we strive to minimize the impact of our business operations on the environment, respecting nature, and biodiversity.

To attain environmental excellence, we implement measures aimed at preventing pollution, conserving energy, and managing waste, particularly in relation to hazardous or restricted substances. We develop products that utilize raw materials and processes that minimize environmental impact throughout the product life cycle from design and manufacturing to customer use and end-of-life disposal. Prioritizing the safety and well-being of our employees, contractors, and partners, we strive to maintain an injury-free workplace, deploying advanced standards and systems to uphold this commitment.

We have standardized our EHS objectives to facilitate continuous, measurable enhancements across our operations. Environmental, health, and safety considerations are integrated into every facet of Canadian Solar's operation through our comprehensive management system, which is grounded in recognized third-party standards. These include ISO 14001 (environmental management system), ISO 45001 (occupational health and safety management system), ISO50001 (energy management system), and other industry best practices.


300MW solar plus 561MWh storage, Slate solar and battery storage plant, U.S.

Compliance with Environmental Regulations

100% of Canadian Solar's revenues are derived from renewable energy, as our business model is based on helping our customers achieve their clean energy goals. That said, we are cognizant that our manufacturing operations produce wastewater, air emissions, noise, and other industrial waste. Canadian Solar abides by environmental laws and regulations, and has obtained all necessary environmental permits, including those related to wastewater discharge, air emissions, and the handling and disposal of solid and hazardous waste and chemicals to conduct business at existing manufacturing facilities. We also continuously monitor regulatory changes in the jurisdictions in which we operate to remain in compliance with relevant environmental laws and regulations.

Furthermore, Canadian Solar carries out extensive environmental, health, and safety studies during the development stage of our solar and battery storage projects to assess and reduce their environmental impacts and potential hazards to employees.

We have intensified the inspection of our suppliers' ESG performance and implemented ESG compliance audits across our supply chain since 2021.

At the product level, our solar modules and system solutions adhere to the European Union's REACH (Registration, Evaluation, Authorization, and Restriction of Chemicals) regulation for chemicals (EC) No. 1907/2006 and follow the implementation guidelines issued by the European Chemical Agency (ECHA). Our products, classified as "articles" within the REACH directive, do not release any chemical substances under normal or reasonably foreseeable conditions of use. Our system solutions, including string inverters, comply with the European Union's RoHS (Restriction of Hazardous Substances) Directive 2011/65/EU and its amendments.[2] Our photovoltaic modules are exempted from CLP (Classification, Labelling, and Packaging of substances and mixtures) regulation according to (EC) No. 1272/2008.

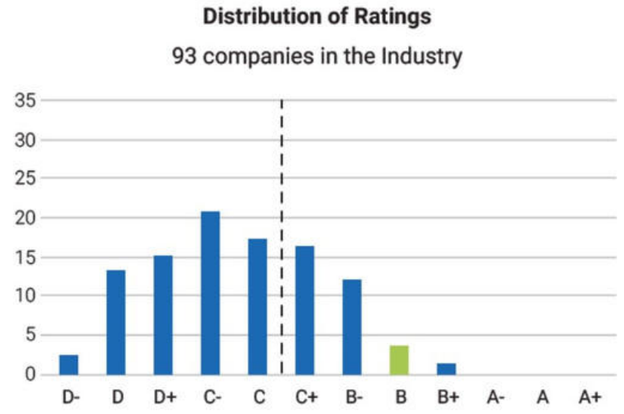
All our photovoltaic module designs undergo Toxicity Characteristic Leaching Procedure (TCLP) testing to monitor the presence of any toxic metal substances (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver) according to TCLP Standard EPA Test Method 1311, as issued by the U.S. Environmental Protection Agency (EPA) under the Toxic Substances Control Act (TSCA) for landfill disposal of modules. We also closely monitor regulations under the EPA's TSCA, governing the manufacturing and use of chemical substances in the U.S. Our photovoltaic modules adhere to the latest ruling requirements over PBT Chemicals (Persistent, Bioaccumulative, and Toxic) under the TSCA.

2 Solar PV modules are exempted from European Restriction of Hazardous Substances (RoHS) legislation as part of the decision from the European Commission to ensure the achievement of renewable energy targets. Per article 2 of the RoHS directive, "This directive does not apply to: [...] photovoltaic panels intended to be used in a system that is designed, assembled and installed by professionals for permanent use at a defined location to produce energy from solar light for public, commercial, industrial and residential applications."

International ESG Initiatives

ISS ESG Corporate Rating, Prime Status

Canadian Solar was awarded a **"Prime" ESG status** with a B rating by ISS ESG (link) in early 2023. This rating places Canadian Solar among the top 5% or **as one of the industry leaders or in the top 5%** in the semiconductors sector. The ISS ESG Corporate Rating provides investors with a highly relevant, material, sector-specific and forward-looking assessment of a company's environmental, social, and governance performance. ISS ESG is the responsible investment arm of ISS (Institutional Shareholder Services Inc.). ISS, founded in 1985 and headquartered in Maryland, the U.S., is the world's leading provider of environmental, social, and governance solutions for asset owners, asset managers, investors, and asset servicing providers. ISS ESG awards "Prime" status to companies with an ESG performance above the sector-specific prime threshold.



The Distribution of Ratings indicates the company's performance relative to its industry peers.

Achilles ESG Score, Excellent Rating

Canadian Solar received an Excellent rating, from Achilles (link), the highest possible rating. The Achilles ESG score allows companies to quickly see potential environmental, social, and governance issues in their supply chains through a series of rigorous questionnaires. Achilles pre-qualifies suppliers, scores them, and benchmarks each supplier across ESG, financial, and health and safety standards. Founded in the 1990s and headquartered in Abingdon, U.K., Achilles currently serves a network of over 550 buyers and 100,000 suppliers across various industries.

United Nations Global Compact (UNGC)

In June 2023, Canadian Solar joined the United Nations Global Compact, the world's largest corporate sustainability initiative (link). By joining the UNGC, Canadian Solar demonstrated our committment to supporting and adhering to the Ten Principles of the United Nations Global Compact on **human rights, labor, environment, and anti-corruption,** and taking actions to contribute to the United Nations' Sustainable Development Goals (UN SDGs) (link). Launched in 2000, the UN Global Compact comprises of more than 9,500 companies and 3,000 non-business signatories based in over 160 countries and more than 70 local networks.

CDP Climate Change Disclosure

Canadian Solar participated in **CDP Climate Change 2023 Questionnaire** (link), responding to questions related to climate risks and low carbon opportunities. The CDP (formerly Carbon Disclosure Project) is an international non-profit organization that runs global disclosure systems for investors, companies, cities, states, and regions to manage their environmental impact. CDP is headquartered in London, U.K. with operations in Japan, India, China, Singapore, Germany, Brazil, and the U.S. CDP's online response system for 2023's climate change disclosures opened in April 2023 and closed in late July 2023. We are expected to obtain a score from CDP in late 2023.

SBTi (the Science Based Targets initiatives)

Canadian Solar submitted a commitment letter indicating our intention to set the **near-term and net-zero science-based climate targets with SBTi** (link) in July 2023. The SBTi is a global body enabling businesses to set ambitious emissions reduction targets in line with the latest climate science. The SBTi's goal is to accelerate companies across the world to support the global economy to halve emissions before 2030 and achieve net-zero before 2050. The initiative was established in 2015 and is a collaboration between CDP, the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF) and one of the We Mean Business Coalition commitments. SBTi's Head of Standards is in London, the U.K. The SBTi defines and promotes best practice in science-based target setting, offers resources and guidance to reduce barriers to adoption, and independently assesses and approves companies' targets.

RBA Validated Assessment Program

The Responsible Business Alliance Validated Assessment Program (RBA VAP) (link) is the leading standard for onsite compliance verification conducted by RBA-accredited independent, third-party firms. This on-site audit covers the areas of **labor practices (including ensuring there is no forced labor), health and safety, environment, ethics, and management systems.** An RBA VAP audit was conducted at Canadian Solar's factory in Thailand in 2023 by TUV Rheinland. Our factory was recognized by RBA and earned a Silver-level recognition for the VAP audit, **fully in compliance with "Freely Chosen Employment" rules, in other words, no presence of forced labor.** The RBA was founded in 2004 and is headquartered in Virginia, U.S. It is the world's largest industry coalition driving corporate social responsibility in global supply chains.

Canadian Solar has initiated the RBA VAP program in Thailand, home to one of our major manufacturing facilities and plans to conduct further third-party audits at both our own operations and supply chain.

340 KW LV CORN Commercial Solar Rooftop, Philippines

2 Environmental Metrics and Targets

Canadian Solar is a technology-driven company and has delivered groundbreaking innovations over the years that have helped make solar PV and battery energy storage the most promising solutions to meet global decarbonization goals.

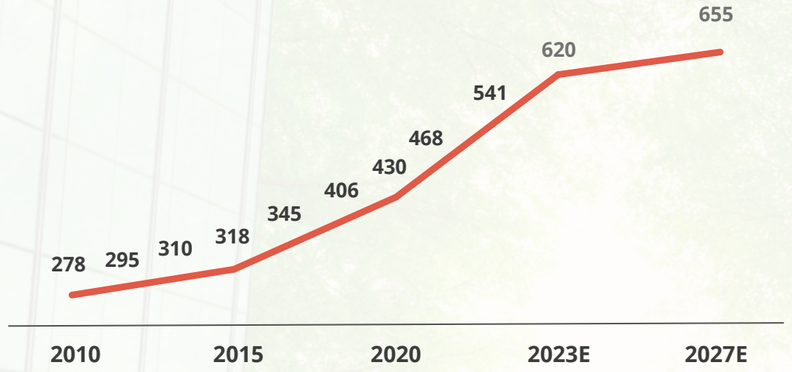
In most markets, solar PV is now the most affordable and cleanest source of electricity, and energy storage will help further expand the penetration of clean energy technologies across power grids.

The solar PV technologies developed by Canadian Solar have greatly improved the efficiency and durability of solar modules while lowering the manufacturing cost. As a result, the Levelized Cost of Energy (LCOE) of solar energy continues to decline, further improving energy affordability for end consumers. Technological innovations have also enabled us to improve our manufacturing processes regarding greenhouse gas (GHG) emissions, energy intensity, water intensity, and waste intensity, thus shortening solar power plants' energy and GHG payback time using our modules.

Battery energy storage has emerged as a crucial component for the integration of intermittent renewables such as solar energy into the grid. With the growing prevalence of renewable energy and a notable decrease in lithium carbonate prices, demand for battery energy storage is increasing exponentially. As a first mover in this field, Canadian Solar has established itself as an industry leader having delivered 3 GWh of utility-scale battery energy systems and projects. On the solar PV technology front, we achieved a significant milestone in 2016, launching the industry's first half-cell solar modules, which have now become the predominant technology. In subsequent years, we introduced Passivated Emitter Rear Cell (PERC) technology and broke the 400W module wattage barrier by mass-producing 166mm wafer-size modules - another industry first. We continued to innovate by launching larger wafer size modules of 182mm and 210mm. These larger wafers facilitate higher module wattage, and higher wattage modules yield lower environmental footprint and balance of system (BOS) costs, ultimately driving down the LCOE of solar power projects.

Most recently, we started mass production of N-type TOPCon (Tunnel Oxide Passivated Contact) solar modules that have a power output of up to 700W. Our TOPCon modules further improve module efficiency, have lower degradation and higher bifaciality,[3] therefore, further reducing the LCOE and enhancing the performance of solar power projects.

Average module wattage *(W)*



Our current product portfolio includes TOPHiKu7 N-type TOPCon modules of 700W and HiKu7 P-type PERC modules of 675W. Our solar module efficiency increased to up to 22.8% in 2023 from 13.9% in 2010.

Continuous technological innovations have allowed us to produce an increased number of solar modules without increasing the amount of materials. As a result, we are reducing the environmental footprint during manufacturing, and providing our customers with better economics and ESG performance in solar power projects.

In the realm of battery storage, we launched our utility-scale battery energy storage solution SolBank in 2022. SolBank is an enclosure for battery storage based on lithium iron phosphate (LFP) chemistry, offering up to 3 MWh of usable energy capacity. The SolBank product has a proprietary design with a liquid-cooling system and an active-balance battery management system (BMS), which can effectively prevent fire accidents and prolong system lifetime by reducing capacity degradation and performance discrepancies among cells. Our SolBank products have high cycle efficiency, which reduces the overall costs and environmental footprint of a battery energy storage project throughout its lifetime.

3 for bifacial modules that generate power from both sides of the module. Higher bifaciality means higher efficiency of the back side, generating more electricity for the power plant.

Understanding the Environmental Impact of Manufacturing

We evaluate the environmental impact of our manufacturing operations based on the following framework:

Production scale & process efficiency. We are rapidly adding manufacturing capacity to meet the growth in demand for clean energy. The more we produce, the more energy and water we consume, and the more waste and greenhouse gas (GHG) emissions we release. By improving the efficiency of our manufacturing processes, we can decrease energy and water consumption, and waste generation, and GHG emissions per unit produced. Therefore, energy and water use efficiency are parameters during the design of manufacturing processes and selection of manufacturing equipment.

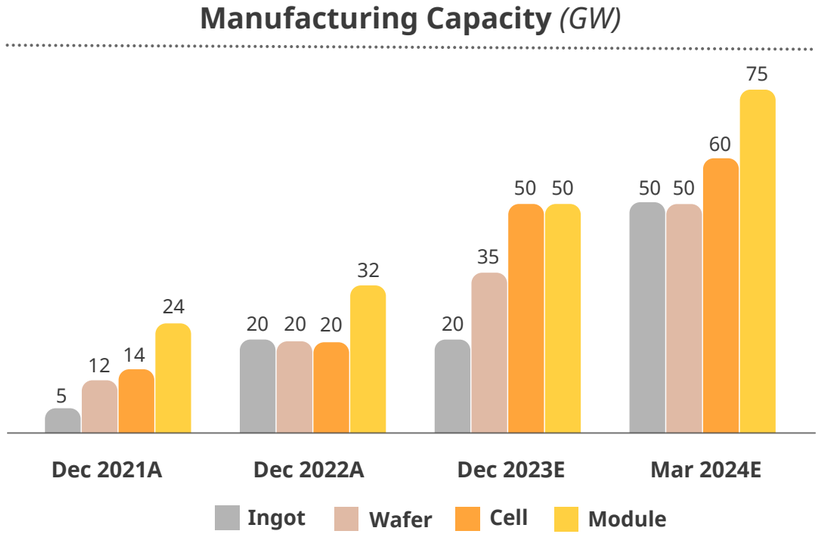
Scope of manufacturing and level of vertical integration. Crystalline silicon PV manufacturing comprises ingot, wafer, cell, and module production processes. The higher the level of vertical integration, the more in-house manufacturing capacity we have and therefore, the more energy and water we consume and the more waste we generate for our production. This directly affects our environmental footprint. However, by internalizing production, we have greater control over the environmental footprint of the products that we produce. Regarding battery energy storage, our current manufacturing operations are mainly in the production of battery packs, modules, and full containers, which create little environmental impact.

Product technologies. To a large extent, the choice of product technologies decides our manufacturing processes and thus defines the environmental footprint of our manufacturing operations. We are currently transitioning from P-type to N-type technologies. The two leading N-type technologies we produce are TOPCon (Tunnel Oxide Passivated Contact) and HJT (Heterojunction), albeit HJT is still on the pilot line. Compared with N-type HJT and P-type PERC, N-type TOPCon products require longer manufacturing processes and therefore consume more energy during production. That said, we aim to further reduce the environmental footprint of our solar manufacturing business, as our TOPCon products provide higher product efficiency and reduce per-watt energy, water, material consumption, and GHG emissions.

Manufacturing Capacity Expansion Roadmap

Over the past few years, we have significantly expanded our solar manufacturing capacity and the level of vertical integration, as shown in the chart. This has naturally resulted in higher total energy consumption, GHG emissions, water withdrawal, and waste production.

However, thanks to our continuous improvements in technology, manufacturing processes, and efforts in energy savings, the energy intensity of our manufacturing processes on a per-watt basis will continue to decrease.



Well on track to achieve the goal of powering all our operations with 100% renewable energy before 2030

Canadian Solar remains steadfast in our commitment to power global operations with 100% renewable energy by 2030, setting an intermediate target of 74% by 2027. In pursuit of this goal, our focus is on reducing electricity and energy consumption and augmenting the usage of renewable energy across our operations.

	2020	2021	2022	2027	2030
Renewable energy %	20%	23%	29%	74%	100%
Total Electricity Consumption (MWh)	1,127,000	1,434,000	1,825,598		

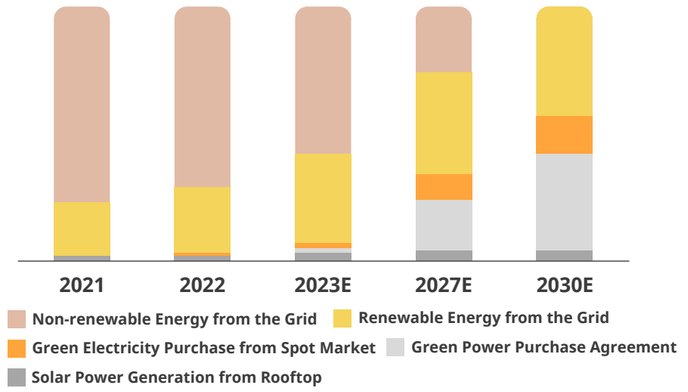
A significant portion of our scope 1 and scope 2 carbon emissions (see definitions in the subsequent section) originate from the electricity consumed by our manufacturing operations. Consequently, our top priority is to source the electricity from renewable energy resources, which can reduce carbon emissions from our production and thus reduce the carbon footprint of our products.

Most of our manufacturing facilities are in China where solar energy has reached grid parity. In 2021, Chinese regulations started allowing green electricity trading in the electricity market and endorsing PPAs signed directly between renewable energy producers and electricity users (link). These regulations have allowed us to start procuring clean energy more proactively for our own operations. For instance, in 2022, we procured 16,000 MWh of green electricity for one of our manufacturing facilities in Zhejiang Province.

Altogether, signing renewable PPAs, procuring renewable energy from spot markets, and generating power from our rooftop solar power systems form the critical pathways to our goals.

Moreover, we anticipate the proportion of renewable energy in power grids to increase in the coming years due to the higher penetration of renewable energy. This will naturally expedite our efforts toward achieving our decarbonization goals.

Total Electricity Consumption *(%)*



Key Environmental Achievements over 2017 - 2022

20%↓ GHG Emissions Intensity

25%↓ Manufacturing Energy Intensity

67%↓ Manufacturing Water Intensity

45%↓ Manufacturing Waste Intensity

The following sections present detailed environmental intensity metrics for all our global manufacturing operations, encompassing ingot, wafer, cell, and module production. These metrics are calculated using the weighted average intensity of each manufacturing process with the actual production output of each manufacturing site.

Greenhouse Gas Emissions

Canadian Solar measures and reports Greenhouse Gas (GHG) emissions in line with the ISO14064-1:2018 standard (Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals) (link). Since 2021, we have consistently reported scope 1 (direct GHG emissions) and scope 2 (indirect GHG emissions from imported energy) from all our global manufacturing operations.

In 2022, we broadened our reporting scope to include certain scope 3 emissions, primarily focusing on category 3 (indirect GHG emissions from transportation) and category 4 (indirect GHG emissions from products used in our manufacturing operations*), based on the availability of activity data.

Our GHG emissions metrics are comprehensive, covering total emissions of scopes 1, 2, and 3 as well as the intensity of scopes 1 and 2 associated with our manufacturing processes. Additionally, we offer insights into product-level carbon emissions using Life Cycle Assessment (LCA), French Energy Regulatory Commission (CRE) standards, and Italian Environmental Product Declaration (EPD).

Methodology

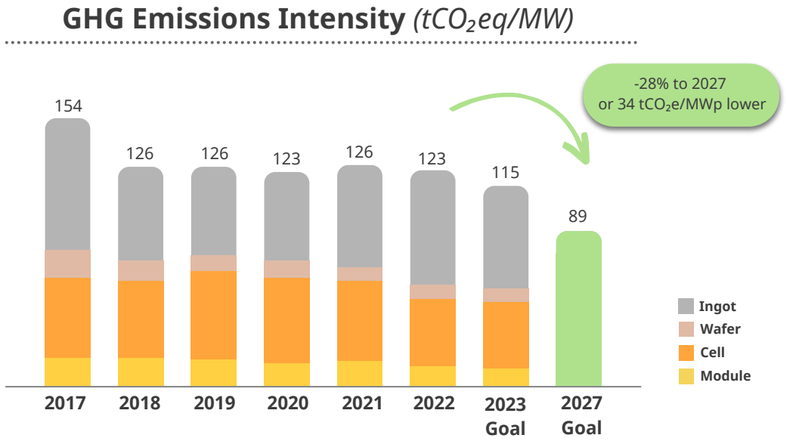
In 2022, we implemented several enhancements to our greenhouse gas inventory, expanding the depth and breadth of our reporting. The following changes were introduced:

1. Organizational boundaries: we expanded the scope of our inventory to incorporate newly added facilities, which included one module, cell, and ingot facility. In addition, we integrated our energy storage and inverter manufacturing facilities into our coverage.

2. Reporting boundaries: our reporting parameters were extended to capture indirect emissions from upstream and downstream transportation, as well as indirect emissions stemming from water usage and service consumption, such as construction and catering. These fall under scope 3 per the GHG Protocol definitions.

3. Emissions factors: we updated the emission factors used in our calculations to reflect the most recent data and guidelines. Specifically, we adjusted the fuel emission factors for operations in Thailand and Vietnam according to the UK Environmental Agency 2022 updated data,[4] updated electricity emission factor for Thailand in accordance with the Thai Government Ministry of Energy (EPPO)[5] 2022 updated data, and updated electricity emission factor for Vietnam in accordance with the Department of Climate Change[6] 2021 updated data.

Based on these changes in reporting boundaries and emission factors, we have recalculated our carbon emissions from 2017 to 2021.



We use GHG emissions intensity or carbon intensity (emissions per MWp) as our key reporting metric, facilitating straightforward comparisons across different years. The GHG emissions intensity provided on the chart comprises only scope 1 and scope 2 emissions.

In 2022, we achieved 123 tCO_2e/MWp, better than our goal of 124 tCO_2e/MWp. This accomplishment was mainly driven by a 16% decrease in carbon intensity for the cell production process and an increase in cell conversion efficiency, coupled with our energy reduction measures, such as the energy-saving reconstruction of Process Cooling Water (PCW) and optimizing air conditioning use in the warehouse.

Our objectives for 2023 include a 7% reduction in carbon intensity compared to 2022 levels, and by 2027, we aim to reduce carbon intensity by 28% compared to 2022 levels. We intend to achieve these targets by continuing to increase product wattage and taking further energy-saving measures. Moreover, we are increasing capacity in high-efficiency N-type TOPCon modules and lowering silicon usage, such as using thinner wafers to minimize silicon grams per watt.

In 2022, our total scope 1 direct GHG emissions were 75,647 tCO_2e, or tons of CO_2 equivalent, and scope 2 indirect GHG emissions were 1,213,638 tCO_2e. For a detailed breakdown of these emissions, please refer to the following charts:

*Note: Category 1-6 are defined in the ISO14064-1:2018 standard, whereas scope 1, 2, and 3 are defined in the GHG Protocol (link). Categories 1 & 2 correspond to scope 1 & 2, respectively, and scope 3-other indirect GHG emissions includes category 3-6. We use the term "scope" going forward.
4 https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2022
5 https://www.eppo.go.th/index.php/en/en-energystatistics/CO2-statistic
6 http://www.dcc.gov.vn/van-ban-phap-luat/1101/He-so-phat-thai-luoi-dien-Viet-Nam-2021.html

Scope 1			Scope 2		
Stationary combustion	8,483	1%	Imported electricity	1,202,047	93%
Mobile combustion	538	0%	Imported steam	11,591	1%
Process emissions	29	0%			
Fugitive emissions	66,597	5%			
Total	**75,647**	**6%**	**Total**	**1,213,638**	**94%**

Process emissions decreased to 29 tCO_2e in 2022 compared to 16,468 tCO_2e in 2021 due to an improved calculation methodology of NO_2, which was advised by a reputable third party certified by CNAS (China National Accreditation Service for Conformity Assessment) during the 2022 calculations.

Fugitive emissions increased to 66,597 tCO_2e in 2022, compared to 35,184 tCO_2e in 2021 mainly due to the emissions from newly established manufacturing facilities. These fugitive emissions were measured based on purchased volume instead of actual emissions.

The following table presents our scope 3 emissions in 2022:

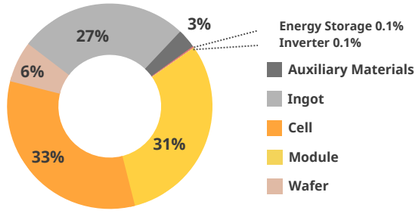
Scope 3			
Category	**Description**	**GHG emissions (tCO_2e)**	**Ratio**
Upstream transportation	GHG emissions from the transportation of raw materials to produce ingot, wafer, cell, and module, including trucks, planes, and ships. *Note: Upstream transportation emissions also include the raw material transportation from our own ingot to wafer, wafer to cell, and cell to module factories.*	51,092	20%
Downstream transportation	GHG emissions from transporting modules to our customers, including the part we are responsible for according to freight terms (e.g., DDP, DAP, FOB, CIF.)	200,821	78%
Purchased goods and services	GHG emissions from tap water purchased and the use of services, such as construction, catering, etc.	4,264	2%
Total		**256,177**	**100%**

In 2022, our aggregate GHG emissions including scope 1, 2, and 3, were 1,545,462 tCO_2e. This is a 26% increase relative to our emissions in 2021. The increase was predominantly driven by the addition of new production sites (contributing +12%) and higher production output from our existing factories (adding +14%), partially offset by our energy conservation measures, which led to a reduction in our scope 1 emissions in 2022 relative to 2021. There are slight differences in 2021 emissions numbers which are mainly due to the change in emissions factors as discussed earlier. A comprehensive comparison with our 2021 GHG emissions, categorized into respective sub-scopes, can be seen in the following table:

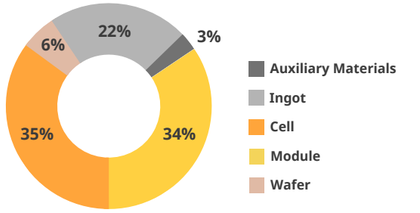
GHG emissions (tCO_2e)	2022			2021
Emissions Scope	**New factories**	**Existing factories**	**Total**	**Total**
Scope 1	36.416 (+80%)	39,231 (-14%)	75,647 (+66%)	45,464
Stationary combustion	32	8,451	8,483	9,740
Mobile combustion	15	523	538	490
Process emissions	13	17	29	50
Fugitive emissions	36,356	30,240	66,597	35,184
Scope 2	**107,162 (+11%)**	**1,106,476 (+16%)**	**1,213,638 (+27%)**	**952,591**
Imported electricity	107,162	1,094,884	1,202,047	941,013
Imported steam	-	11,591	11,591	11,579
Scope 3	**2,197 (+1%)**	**253,980 (+12%)**	**256,177 (+13%)**	**226,512**
Upstream transportation	940	50,153	51,092	33,216
Downstream transportation	440	200,381	200,821	189,210
Purchased goods and services	817	3,446	4,264	4,087
Total	**145,775 (+12%)**	**1,399,687 (+14%)**	**1,545,462 (+26%)**	**1,224,568**

The following charts show the distribution of our GHG emissions (including scope 1, scope 2 and certain scope 3 emissions) of each manufacturing process. Our ingot and wafer manufacturing operations contributed more to our total carbon emissions in 2022 than in 2021, mainly due to the increase in monocrystalline ingot pulling and wafer production output. In 2022, our newly established energy storage and inverter manufacturing operations each accounted for 0.1% of the total emissions.

Carbon Emissions in 2022



Carbon Emissions in 2021



Case Study: Improved PV System's GHG Payback Time with N-type Technology

Net GHG emissions avoided is a comprehensive metric utilized to gauge the potential of technology in mitigating global warming. For solar power systems, net emissions avoided are calculated by multiplying the total GHG-free energy production by the local electricity grid emissions rates and then discounting the solar system's carbon footprint. This calculation considers the GHG emissions from the system's entire life cycle, including manufacturing solar modules and components, transportation, construction, operation, and decommissioning.

The GHG payback time represents the duration required for the surplus GHG emissions linked to the system's whole life cycle to be neutralized by its net GHG avoided emissions.

We calculated the net GHG emissions avoided and the GHG payback time for three utility-scale solar projects. These projects were in Texas, U.S. and Cote d'Azur, France. We considered the following factors in our analysis:

- Solar power plants were equipped with either Canadian Solar's BiHiKu7 or TOPBiHiKu7 modules
- The installed capacity of each plant was 200 MWp
- The projects used single-axis trackers
- The projects are expected to produce electricity for 30 years before decommissioning

Solar System Life Cycle Analysis				
Project location	**Texas, US**	**Cote d'Azur, France**		**Unit**
Module type	BiHiKu7	BiHiKu7	TOPBiHiKu7	
System carbon footprint	1,146	1,146	1,089	tCO_2/MW
	229,200	229,200	217,810	tCO_2
Project lifetime	30	30	30	Years
Total production	12,554,054	10,139,812	10,522,810	MWh
GHG Potential Avoided Emissions				
Gross emissions avoided[7]	222,272	26,026	27,009	tCO_2/year
Net avoided emissions	214,632	18,386	19,748	tCO_2/year
Net avoided emissions (lifetime)	6,438,969	551,566	592,447	tCO_2/year
GHG payback time	**1.0**	**8.8**	**8.1**	Years

7 Avoided emission rates and capacity factors sources: the U.S. Environmental Protection Agency (https://www.epa.gov/avert/avoided-emission-rates-generated-avert), version 4.1, and the French CRE. Compared to previous sustainability report, a revised capacity factor of 26% has been retained for the Texas project calculations.

119 MW Horus Utility Solar Plant, Mexico

As presented in the analysis, net avoided emissions of the Texas solar plant are 214,632 tCO_2 per year, amounting to 6,438,969 tCO_2 throughout its lifetime. The GHG payback time is approximately 1 year, which is representative of many global markets as the share of fossil fuels in Texas' electricity mix amounts to approximately 65%, comparable to the worldwide average of 62%.[8] This means solar power plants using Canadian Solar modules will generate emission-free electricity in most markets for the remaining 29 years. In France, the GHG payback time increases to 8.8 years due to a substantially lower avoided CO_2 rate compared to Texas, which is 77 $kgCO_2/MWh$ (according to PVsyst 7.3, link) and 543 $kgCO_2/MWh$ (according to U.S. EPA, link), respectively. This is because France is a market with an uncharacteristically high penetration of nuclear power. Even so, the GHG payback time accounts for less than one-third of its assumed lifetime, which is still attractive from a decarbonization standpoint.

Our TOPBiHiKu7 modules, with higher electricity production, contribute even more towards decarbonization goals. Our N-type TOPCon bifacial modules have higher power, superior energy yield, lower LCOE, and enhanced reliability. In the example of the solar projects in France, using our new TOPBiHiKu7 products instead of BiHiKu7 increases the annual net emissions avoided by 7%, reducing the GHG payback time by nearly 9 months.

214,632 tCO_2/year net avoided emissions
Equivalent to avoided greenhouse gas emissions from

91.4 million L	**27,051**
Gasoline consumed	Households' energy use

Equivalent to carbon absorbed by

3.5 million	**255,952**
Urban tree seedling grown for 10 years	Acres of US forests

(Calculated by EPA Greenhouse Gas Equivalencies Calculator)

100 MWp Azuma Kofuji solar project, Japan

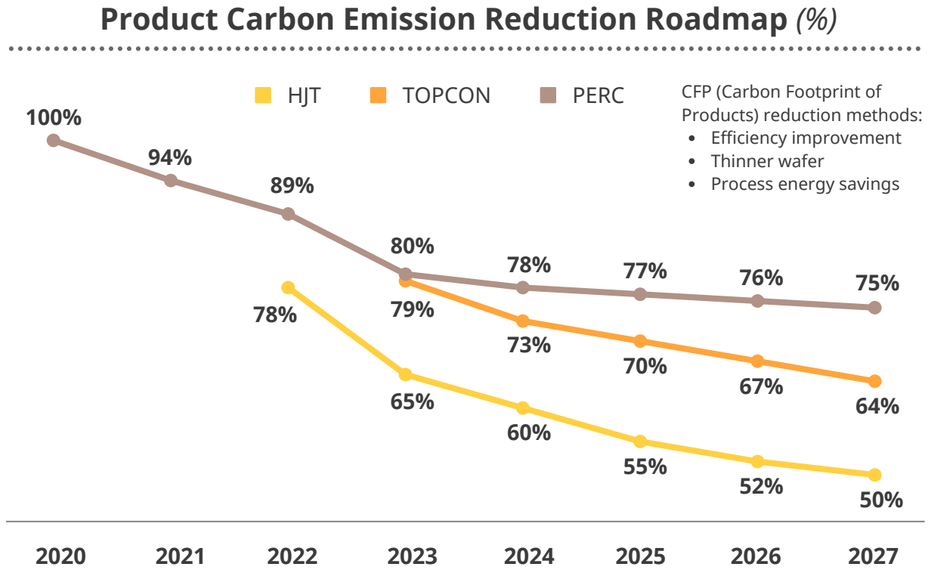
8 Source: Our World in Data based on BP Statistical Review of World Energy, Ember Global Electricity Review (2022) & Ember European Electricity Review (2022)

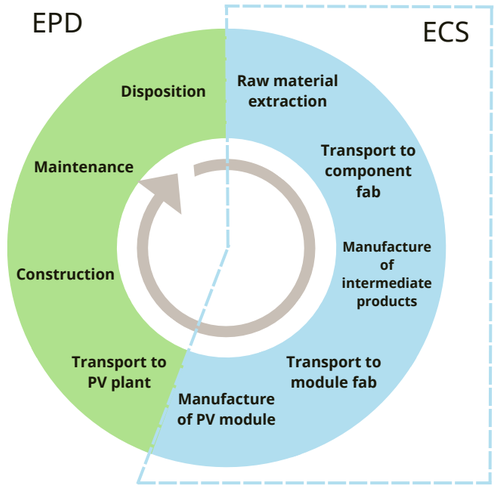
Module Carbon Footprint Improvement

To provide customers with low-carbon module products, we have been pursuing the Evaluation Carbone Simplifiée (ECS) certification following the requirements of the French Energy Regulation Committee (CRE) solar tender since 2015. The ECS certification follows the ISO 14040 and ISO 14044 Life Cycle Assessment standards and calculates the unit carbon emissions of our products from cradle to gate, as shown in the following chart on the right.

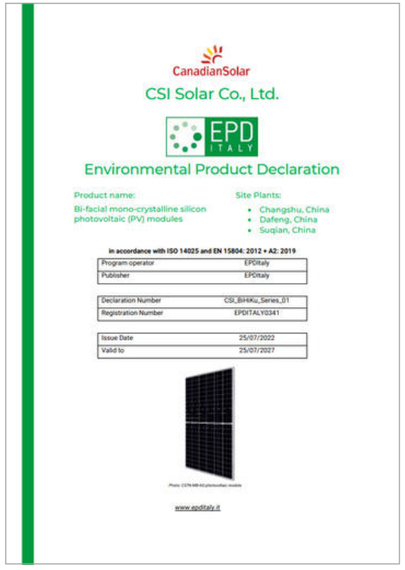
According to the ECS certification, our high-efficiency N-type HJT HiHero module's carbon emissions are below 400 $kgCO_2e/kWp$, and that of our mono-PERC solar modules using 182mm and 210mm silicon wafers are below 500 $kgCO_2e/kWp$. These figures are significantly lower than the industry average of approximately 500-550 $kgCO_2e/kWp$, highlighting our commitment to low-carbon solar products.

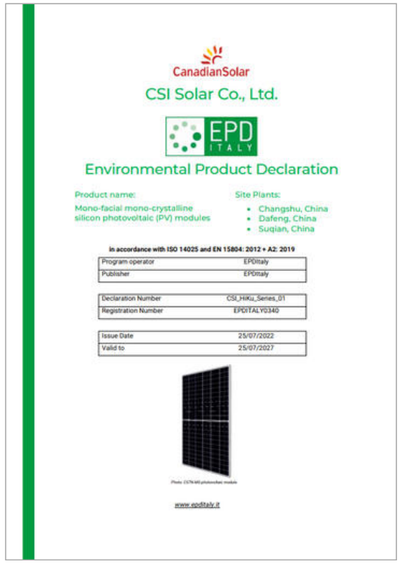
We have established a roadmap to further bring down our modules' carbon footprint based on French CRE methodology as shown in the following chart. N-type HJT and N-type TOPCon have distinct advantages due to thinner wafers and a higher efficiency compared to PERC.





Alongside the French ECS certification, we have also secured the Italian Environmental Product Declaration (EPD) certification, which can be accessed here. EPD offers a comprehensive, globally recognized certification that gauges the environmental impact of solar modules throughout their entire life cycle, cradle-to-grave, as shown in the left chart. The EPD certification particularly emphasizes the assessment of climate change, ozone depletion, acidification, eutrophication of water, photochemical ozone formation, consumption of abiotic resources, and water consumption of a solar system. This evaluation aligns with the ISO14040 and ISO14044 Life Cycle Assessment standards, as well as ISO14025 and EN15804 standards. The EPD certification is crucial for solar project developers and investors to evaluate solar power plants' Return on Energy (RoE). Using the scenario of a solar power plant installed in Rome, Italy, the RoE of our solar modules is less than 2 years.


CanadianSolar
CSI Solar Co., Ltd.
EPD ITALY
Environmental Product Declaration
Product name:
Bi-facial mono-crystalline silicon photovoltaic (PV) modules
Site Plants:
Changshu, China
Dafeng, China
Suqian, China
in accordance with ISO 14025 and EN 15804: 2012 + A2: 2019
Program operator EPDItaly
Publisher EPDItaly
Declaration Number CSI_BiHKu_Series_01
Registration Number EPDITALY0341
Issue Date 25/07/2022
Valid to 25/07/2027
www.epditaly.it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Program operator EPDItaly
Publisher EPDItaly
Declaration Number CSI_HiKu_Series_01
Registration Number EPDITALY0340
Issue Date 25/07/2022
Valid to 25/07/2027
www.epditaly.it

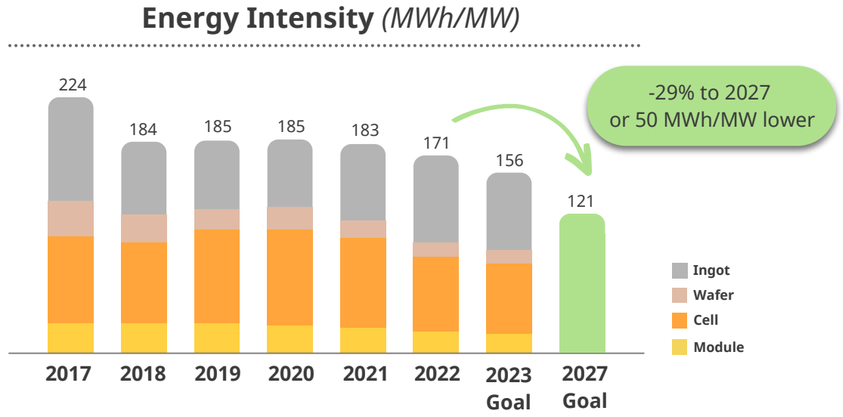
Air Emissions Breakdown

We abide by the environmental laws and regulations applicable in each jurisdiction where we operate. Our commitment is not only to comply, but also to minimize the environmental footprint of air emissions resulting from our manufacturing activities. To ensure this, we conduct routine monitoring and assessments of all relevant emissions. We employ techniques such as exhaust management, filtration, catalytic oxidation, and others to limit emissions. A comprehensive breakdown of our air emissions is provided in the table below.

Air emissions[9] (global, metric tons)	2017	2018	2019	2020	2021	2022
Nitrogen oxides (NO_x)	28.1	37.4	38.2	33.9	13.6	18.0
Sulfur oxides (SO_x)	0.1	0.2	0.1	0.1	0.1	0.1
Fine dust (PM10)	3.7	7.4	9.1	14.8	15.7	15.5
Hazardous air pollutants (HAP)	0.2	0.9	0.6	6.6	10.1	12.4
Volatile organic compounds (VOCs)	12.2	4.1	16.4	13.7	17.5	30.6
Persistent organic pollutants (POP)	0	0	0	0	0	0
Other standard air emissions[10]	3.4	23.2	16.2	23.3	30.2	39.2

Over the past few years, as we shifted from producing polycrystalline to monocrystalline solar modules, our cell production process has required less nitric acid. This change has contributed to the substantial reduction of NO_x emissions since 2021, and we anticipate a further decline in NO_x emissions in 2023. Our wafer and ingot production volumes saw significant growth in 2022, leading to an increase in NO_x emissions. Despite a considerable increase in production volume during 2021 and 2022, our PM10 and HAP emissions remained steady. VOC emissions increased in 2022 due to a new VOC collection system installed at our new factories, reducing the level of fugitive VOC emissions. Other standard air emissions, mainly ammonia, increased in 2022 due to the significant increase in our cell production output. A new ammonia recycling system will be installed in late 2023 and will thus significantly reduce ammonia emissions starting in 2024.

Energy Intensity



To monitor our energy intensity throughout our ingot, wafer, cell, and module manufacturing operations, we use production-weighted average calculations across the production sites. This approach provides an accurate and representative snapshot of the energy intensity of our global manufacturing operations. However, it may slightly underrepresent the potential energy savings potential from newer production workshops, which typically ramp up production through the year.

We achieved a 7% or 12 MWh/MW year-over-year ("yoy") reduction of energy intensity in 2022 compared to 2021, slightly exceeding our 2022 target of 167 MW/MW set in 2021. This was due to the energy intensity increase of our ingot production, a 12% yoy in 2022 compared to 2021, as we transitioned from polycrystalline to monocrystalline ingot production, and capacity utilization rate was lower in the second half of 2022 due to the COVID control measures implemented in China. Raw material purification also resulted in higher energy intensity in ingot production. Despite this, we achieved a yoy energy intensity savings of 14%, 19% and 15% for our wafer, cell, and module productions in 2022 compared to 2021, respectively.

The yoy reduction in energy intensity in 2022 was primarily driven by advancements in product technology, such as our transition to N-type TOPCon modules, which increased our product power output and thus reduced our energy use on a per-watt basis. The use of thinner wafers, which lowered the grams of silicon per watt, also contributed to the decrease in energy intensity.

9 Certain historical figures contain measurement abnormalities which we cannot revise given the amount of time that has lapsed. Consider 2020-2022 figures as the most accurate and reflective measurements of our actual air emissions. While the Company's emissions already comply fully with local regulations, the Company is making significant efforts to further treat and reduce air emissions.
10 From 2020, ammonia NH3 emissions have been included in "other standard air emissions", and we started monitoring HAP emissions in our cell manufacturing operations, as per relevant Chinese air quality control regulations.

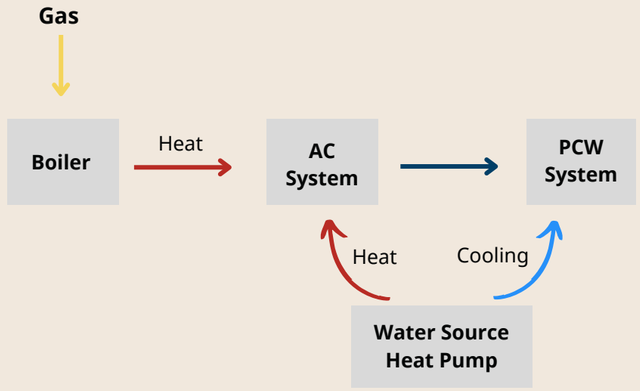
Another significant contributor to the yoy decrease in energy intensity was our execution of energy savings projects, which yielded a total energy savings of 30 GWh in 2022, including 22 GWh of electricity, 7,600 tons of steam, and 200,000 nm³ of gas. We implemented 107 energy saving projects in 2022, including a heat recovery system at our Baotou ingot workshop, and more efficient chiller at our Yancheng and Funing cell workshops to supply chilled water to manufacturing process.

Case Study: Baotou Ingot

Install new water source heat pump system to save gas consumption

Gas saving measures:

Install new water source heat pumps to utilize the energy from hot water to provide heat for AC systems in winter and cooling for PCW (Process Cold Water) systems in the production area, contributing to circular use or energy



Project Achievements:

- Saved up to 20,000 m³ gas per year (Baotou site)
- Studying the similar applications in our other businesses

Case Study: Energy Management System

Project achievements:

Six of our manufacturing facilities have obtained ISO50001 energy management certification. We plan to have another three facilities certified under ISO50001 in 2023

Three manufacturing facilities in China and our Thailand manufacturing facility received “Green Factory” award from the local government authorities

We strive to continually lower our energy intensity and meet our 2027 goal through measures such as enhancing our product output and efficiency, implementing energy conservation initiatives, and driving circular use of energy, and further implementing energy management systems.

30 MW Shilou Utility Solar Plant, China

Energy Consumption Breakdown

Energy Consumption Breakdown by Manufacturing Process (GJ)	2021	2022
Ingot	1,117,316	1,153,399
Wafer	393,012	555,127
Cell	2,647,008	3,024,054
Module	1,150,120	1,345,103
Auxiliary Materials	166,048	148,096
Total	**5,473,504**	**6,225,779**

In terms of total absolute energy consumption, there were slight increases in each production process resulting from the increase in production output. As previously discussed, our production output increased by 36% for ingots, 63% for wafers, 41% for cells and 38% for modules in 2022 compared to 2021. This increase in production output resulted from the higher energy consumption in 2022.

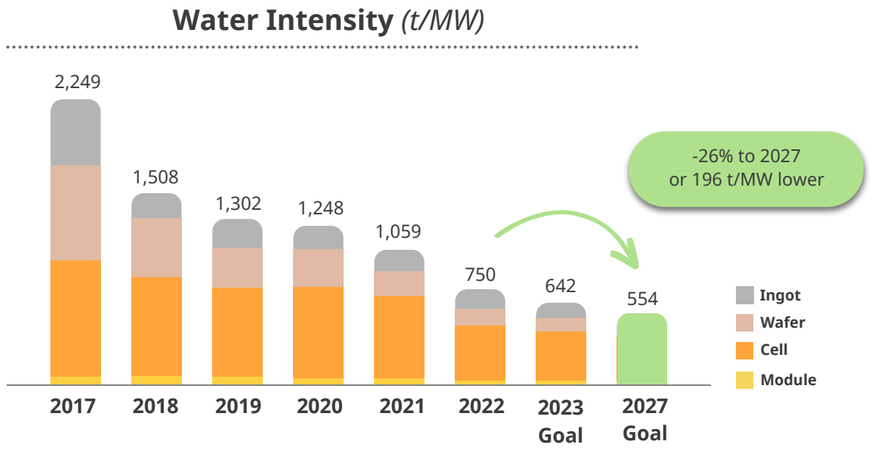
Energy Consumption Breakdown by Resources[11]	2017	2018	2019	2020	2021	2022
Total energy consumption (GJ)	**2,002,393**	**2,701,707**	**3,757,188**	**4,286,130**	**5,473,504**	**6,225,779**
of which:						
Gas	11,295	24,020	40,249	59,001	192,332	178,836
Diesel	2,536	2,455	2,162	3,164	4,321	3,890
Gasoline	3,737	700	857	2,535	1,786	2,580
Steam	133,523	136,874	166,942	165,157	112,433	91,820
Grid electricity	1,800,956	2,474,601	3,484,479	3,972,449	5,078,445	5,816,234
Self-generated solar PV electricity	50,346	63,056	62,500	83,824	84,187	132,419

In 2022, we achieved an 18% decrease in steam and a 7% decrease in gas despite a significant increase in production output. This was mainly driven by energy conservation projects implemented across our manufacturing facilities, especially at our Baotou ingot and Yancheng cell factories.

Lavras Phase II 79 MWp, Brazil

11 Numbers reported in this table may differ slightly from previous sustainability report editions. We have revised historical calculations for accuracy and prior report estimations should no longer be considered. Self-generated PV electricity share has been revised in accordance with SASB (Sustainability Accounting Standard Board) standard reporting practices.

Water Intensity



Water intensity is defined as the total amount of water withdrawn from all sources per MW produced. We use production-weighted averages across all our manufacturing units to track our water intensity, as shown in the above chart.

We achieved a yoy reduction of 29% or 309 t/MW in water intensity in 2022 compared to 2021, surpassing our 2022 target of a 22% yoy reduction. This success was primarily due to the continued deployment of larger size 210mm wafers and cell operations. The efforts we made to increase product efficiency, coupled with water-saving initiatives, also contributed to the decrease in water intensity.

In terms of absolute figures, we saved 992,000 tons of water in 2022. Looking ahead, from 2023 to 2027, we plan to reduce our water consumption further by further enhancing our manufacturing and product efficiency, alongside implementing additional water-saving measures.

PV solar manufacturing can be water intensive. As more complex cell technologies gain market share, demand for ultra-pure water quality continues to increase. At Canadian Solar, the sustainability of our long-term operations is of paramount importance. Through our water conservation and recycling programs, in conjunction with improvements in module efficiency and production yield, we successfully achieved a 67% reduction in manufacturing water intensity between 2017 and 2022. During the same period, absolute water withdrawal only increased by 55% despite our global module shipments increasing by more than 3x.

Case Study: Cell Workshop

Improvements in cell process parameter setting to save the water consumption.

Water conservation measures:

- Continually optimize the parameter of graphite boat cleaning, texture, PSG removing, alkali polishing. Standardize water inflow rate over each equipment.

Graphite Boat Cleaning
Save 545T pure water per day

Alkali Polishing
Save 130T pure water per day

PSG Removing
Save 155T pure water per day

Texture
Save 270T pure water per day

Project achievements:

- Manufacturing water intensity reduced by 76 t/MW (~11%).
- Similar measures have been deployed at Yancheng and Thailand factories from the second half of 2022, with expected annual water withdrawal savings of up to 100,000 m³, which is equivalent to 40 Olympic-size swimming pools of water saved.

Did you know? According to the U.S. Environmental Protection Agency, an average American family uses more than 300 gallons of water per day at home (approx. 1.25 tons). The average U.S. residential solar system is around 7 kW. By these metrics, it takes the same amount of water as an American family uses in five days to manufacture the solar modules in an average residential system in the U.S. The amount of water used is lower for most other regions, although residential solar systems are also smaller outside of North America (3-5 kW).

Water Risk Management Strategy

Water conservation is one of the top priorities in our sustainability initiatives. As such, we aim to continuously improve our production utilization rates and reduce water withdrawal from our manufacturing businesses. Water saving experts are involved as we design our production processes to ensure water saving technologies are integrated from the very beginning. Our goal is to maximize water utilization rates by considering the water quality requirements for each process and recycling water appropriately to maximize its use.

In 2022, 100% of our water withdrawals came from municipal freshwater supplies, the same as in previous years. All data on water withdrawals and discharges discussed in the following table are based on invoices provided by water and wastewater utilities, whereas the quantities of recycled water are determined through direct meter measurements within our facilities.

	2020	2021	2022
Total water withdrawals (thousand m³)	8,418	9,027	8,550
Withdrawals within high baseline water stress areas (%)	45%	34%	28%
Total water consumption (thousand m³)	3,634	2,653	2,170
Consumptions within high baseline water stress areas (%)	57%	30%	26%
Total water recycling (thousand m³)	2,480	1,930	1,972
Water recycling rate (%)	30%	21%	23%

We achieved a yoy reduction in total water withdrawals of 5% or 477,000 tons in 2022 compared to 2021, despite a significant increase in production volume. In addition, our total water consumption decreased by 18% or 483,000 tons in 2022 compared to 2021. These were mainly driven by the implementation of more efficient production tools as well as further improvements in water conservation measures.

In 2022, our total water recycling rate rose to 23%, up from 21% in 2021, attributed to the initiation of water recycling projects at our cell and wafer manufacturing facilities. As we look to 2023, we expect our total water recycling rate to surpass 25%. This together with the implementation of additional water recycling projects and water conservation measures, will help decrease our water intensity even further.

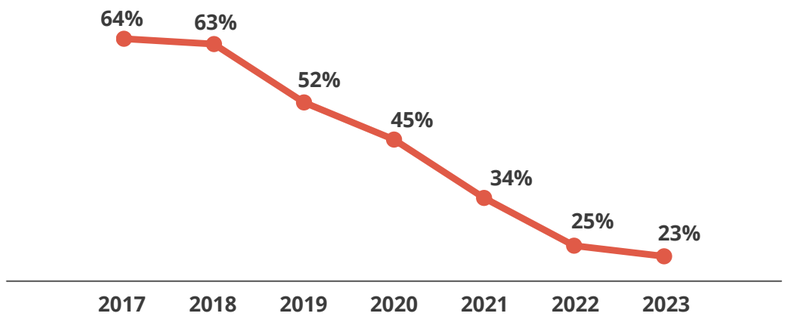
In recent years, we have strategically relocated our manufacturing operations to areas with lower Baseline Water Stress (BWS), as categorized by the World Resources Institute (WRI) Water Risk Atlas tool, Aqueduct. This move has significantly mitigated our water access risk. Our primary strategy is transitioning our manufacturing base from regions with high to moderate or lower baseline water stress.

A detailed breakdown of our operations' withdrawals from high BWS areas for our module, cell, wafer, and ingot manufacturing operations is shown in the table provided below:

Water withdrawals in high or extremely high Baseline Water Stress locations (thousands m³)	2017	2021	2022
Module	337 (6%)	457 (5%)	419 (5%)
Cell	1,587 (28%)	554 (6%)	0
Wafer	1,429 (26%)	1,181 (13%)	975 (11%)
Ingot	217 (4%)	790 (9%)	667 (8%)
Auxiliary materials		118 (1%)	137 (1%)

Overall, the proportion of our total water withdrawal in such areas decreased to 25% (2,198 thousand m³) in 2022 from 64% (3,570 thousand m³) in 2017. The operational commencement of our new ingot facility in Qinghai province, China, in 2023 is projected to further alleviate the water access risk for our ingot manufacturing operations. We conduct Environmental Impact Assessments (EIA) for new manufacturing sites before construction. This assessment includes the creation of a detailed water balance chart, and an in-depth review of water stress and freshwater resources, thus reducing potential water supply risks.

Share of production in regions with high or extremely high baseline water stress (BWS) *(%)*

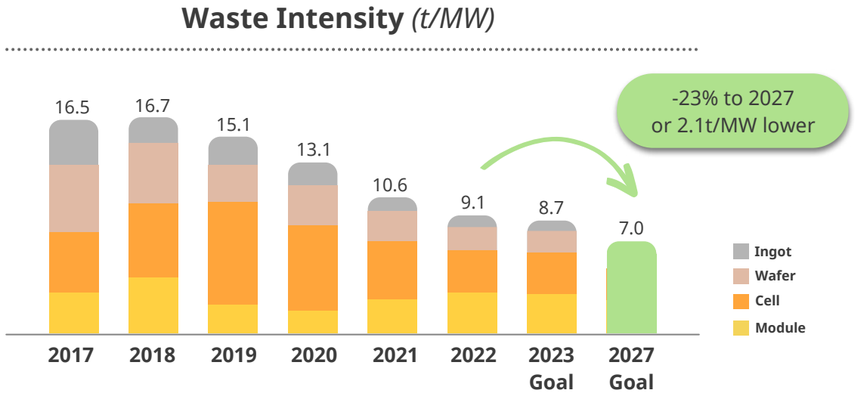


Water Pollutants and Effluents

We aim to ensure safe, reliable, and sustainable water access for our operations and the local communities impacted by our activities. We adhere to all relevant local and international laws and regulations concerning wastewater pollutants. We rigorously analyze our potential impact on local water resources and other water users, devising strategies to minimize this impact. We collect wastewater during production and treat them internally to meet our internal control criteria before we send it to local wastewater treatment facilities for secondary filtering until final water discharge requirements are met. The following table provides a detailed breakdown of wastewater-relevant pollutants and effluents generated by our production and COD, a measure of wastewater and its condition.

Wastewater pollutants / measure (global, metric tons)	2021	2022
Fluoride	21.1	21.0
Suspended Solids (SS)	186.6	146.9
Ammonia Nitrogen	23.6	22.9
Total Nitrogen	65.2	57.6
Chemical Oxygen Demand (COD)	288.3	283.8

Waste Intensity



In 2022, we achieved a yoy reduction in waste intensity by 14% or 1.5 t/MW compared to 2021, surpassing our target of 9.8 t/MW. This was mainly due to the deployment of new and more efficient manufacturing equipment for large size 210mm wafer-based cells and the implementation of ambitious recycling and waste reduction management programs. We achieved yoy reductions of 18%, 22%, and 27% in waste intensity for our ingot, wafer, and cell productions respectively in 2022.

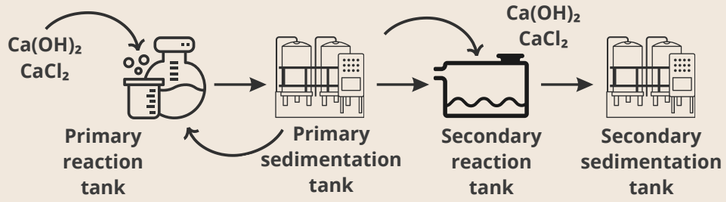
Case Study: Cell Manufacturing Operations

Sludge reduction measures at wastewater treatment facility:

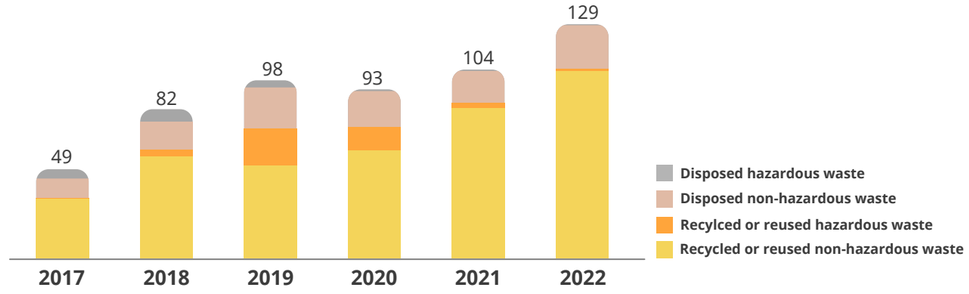
- Add new recycling system to pump sludge back for sufficient reaction before final discharge.
- Increase the pressure of filter press from 1.0 MPa to 1.2 MPa.

Project achievements:

- Wastewater treatment facility sludge (calcium fluoride) reduced 2,678 tons/year (sludge intensity decreased 52%).
- Expanding the coverage of similar measures to our factories in Thailand and China since Q4 of 2022.



Waste by Type and Disposal *(kt)*

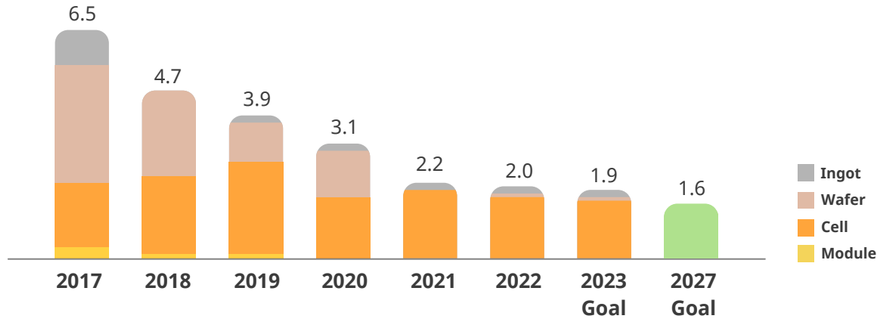


The total percentage of waste we recycled or reused decreased from 82% to 81% in 2022. This was mainly due to a change in the waste treatment method at our Thailand factory. Our total waste generation increased in 2022 as we significantly increased our production output. That said, we managed to substantially reduce our total hazardous waste from 3,800 tons in 2021 to 1,800 tons in 2022.

Disposed Waste Intensity

Disposed waste intensity, including landfill or incinerated waste, presents a more insightful measure of our progress towards more sustainable solar manufacturing than total waste intensity. From 2017 to 2022, we achieved a 69% reduction in disposed waste intensity.

Disposed Waste Intensity *(t/MW)*



Product End-of-Life Management and Recycling

Canadian Solar strictly complies with e-waste management laws and regulations in the countries where we operate and advocates the recycling and reuse of end-of-life products.

In Europe, our solar PV modules have been fully compliant with the Waste of Electric and Electronic Equipment (WEEE) European Directive since 2014, which regulates the proper disposal of solar modules across all EU countries. We work closely with recycling service providers such as PV CYCLE (link) and Take-e-way (link) to ensure full compliance with all Waste from Electrical and Electronic (WEEE) obligations and appropriate market import actions are followed. In 2022, our qualified partners repaired approximately 79,907 pieces or 18.3 MW of Canadian Solar modules for reuse, while PV Cycle recycled around 2,500 pieces or 0.6 MW. In 2023, we are also cooperating with Ecoasimelec in Spain (link) for module recycling.

In the United States, we partnered with a qualified recycling service provider in 2022, resulting in the recycling of 3,830 module pieces, totaling 1 MW.

In Australia, we have been collaborating with Reclaim PV Recycling for solar module end-of-life management activities. Through this partnership, in 2022, 7,865 pieces of modules totaling 2.6 MW were recycled through Reclaim PV Recycling. Aluminum frames were disassembled and sold to aluminum recycling companies, and the remaining module parts were broken down using thermal deconstruction. These components were then sorted and delivered to relevant materials companies for reuse or safe disposal.

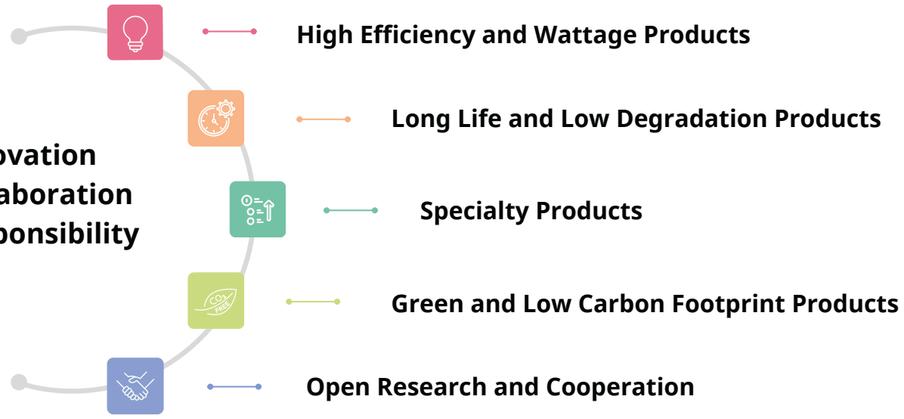
In China, we joined a 3-year research project focused on efficient silicon PV module recycling processes, including module disassembly and cell recycling technologies.

Longer-lasting solar modules translate into fewer replacements or recycling needs. We are dedicated to minimizing environmental impact and strive to enhance incoming material quality control, implement stricter testing standards, and extend the useful life of a solar module to 40 years.

Did you know? Typically, there are 5 layers in a crystalline silicon PV module: a front cover (tempered glass), the electrical circuit (solar cells matrix) in between two encapsulant layers (front/back), and a back cover (back sheet or tempered glass). Aluminum metal frames are used to improve mechanical resistance of the PV modules and facilitate installation. Approximately 75% of a solar module's weight is tempered glass, 10% plastic parts, 8% aluminum, 5% silicon, and 1% other materials. Thus, 95% of the materials used in a typical silicon solar module can be disassembled, sorted, processed, and recycled.

Research and Development Roadmap

Investing in technological innovation is critical to Canadian Solar's competitive advantage and contribute to global decarbonization.



Our technology roadmap and expected contributions to various environmental metrics for 2023 to 2026 are outlined below:

1. Following the launch of high-efficiency and environment-friendly HJT modules in 2021 for residential and commercial roof applications, we successfully developed TOPCon modules in 2022 and started mass production in 2023. We plan to increase the TOPCon module power output from 690W in 2022 to 710W in 2025. The increased efficiency and wattage, as well as the production volume of TOPCon modules, will help reduce our production's energy and water intensities and further lower the LCOE of solar PV projects. We expect TOPCon modules to account for approximately 30% of total solar module shipments in 2023.

2. After more than 3 years of research, we are ready to offer our extended lifetime solar modules, projected to last up to 40 years. Designed for utility-scale applications, these modules are expected to reduce PV systems' carbon emissions by more than 33% due to their extended warranty and improved performance.

3. In 2022, we launched steel framed solar modules, which help reduce solar module energy intensity by 5% compared to the regular aluminum frame. Currently, we are developing solar modules with a highly engineered glass fiber reinforced composite (GFRC) frame, which features lighter weight and better durability, and can contribute to an additional 4% reduction in module energy intensity. The GFRC framed modules' GHG intensity is 60 tCO_2e/MW lower than that of the aluminum framed modules. We expect to launch the GFRC framed modules in the second half of 2023.

4. While most materials in solar PV modules can be recycled, it is often an expensive process. We are developing fluoride-free modules, aiming to achieve a recycling rate of over 95%. We plan to launch these fluoride-free modules in 2024. Additionally, we are partnering with external entities to create module designs that are easier to recycle, innovate recycling methods, and repurpose modules at the end of their lifecycle.

5. Among all our manufacturing processes, ingot pulling has the highest energy intensity and significant impact on cell efficiency. We continue to research ingot pulling methods, such as increasing pulling speed and the number of ingots produced in a single pulling process while reducing oxygen content and increasing minority carrier lifetime. These measures are expected to reduce energy intensity by at least 3% annually. Additionally, we have taken steps to recycle the argon gas used in the process, which will further reduce the carbon footprint of our ingot process by an estimated 5%.

6. Wafering technologies are developing towards even smaller diamond wires and thinner wafer products. We plan to reduce the diameter of diamond wires and wafer thickness from 40um and 150um, respectively, in 2022, to 28um and 135um in 2023, and further to 26um and 100um in 2025. This is expected to contribute to a 5% annual reduction in production energy intensity by reducing cooling water usage and consumption of polysilicon.

In addition, we are also developing and manufacturing battery storage products and power electronics products such as inverters. These are high energy density and high reliability products that have a less energy intensive manufacturing processes than solar module manufacturing, and that play a critical role to reduce the LCOE of solar PV systems and to enable higher penetration of renewables in the global power grids.

Environmental Stewardship in Project Development and Operations and Maintenance

Canadian Solar ranks among the world's largest solar and energy storage project developers. Our solar and battery storage projects developed worldwide contribute positively to environmental sustainability and social advancements by promoting the global adoption of solar energy.

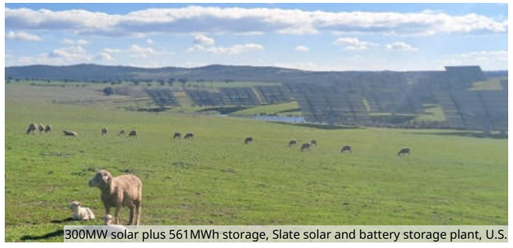
To date, we have developed, constructed, and energized nearly 9 GW of solar projects and more than 3 GWh of battery storage projects worldwide. The clean energy generated by these facilities amounts to approximately 63,000 GWh, which is equivalent to supplying power to around 2 million households or offsetting 33 million tons of CO_2 emissions.

Project development and operations and maintenance (O&M) activities, however, may have adverse environmental, ecological, and biological impacts, including visual impacts on land, habitat disruption, construction noise, waste generation. We are committed to protecting biodiversity and minimizing the potential environmental and ecological impacts by taking the following measures.

From the early stages of project development for each solar and battery storage project, we incorporate evaluations of environmental, ecological, and biological impacts, regulatory requirements, and community engagement. These assessments are integral to our Investment Committee's (IC) approval process for each project we undertake. Our teams are required to provide detailed impact analyses spanning the full life cycle of a project.

Upon project approval by the IC, a comprehensive project execution plan is developed. This high-level strategy not only outlines project execution and safety but also includes measures to comply with local environmental and biological laws and regulations, along with initiatives to minimize the potential impacts.

An environmental O&M compliance plan is designed for every project serviced by our O&M teams. This plan provides guidance to ensure compliance with ESG factors over the lifetime of the power plant. A biological resources mitigation implementation and monitoring plan is also developed for each power plant to ensure compliance with local laws and regulations on biological permits.


300MW solar plus 561MWh storage, Slate solar and battery storage plant, U.S.

Project Development Execution

Project Execution Plan (Environmental and Biological Items)

- Environmental and biological permits
- Training on site safety orientation, mandatory training, and certification, emergency response training
- Incident reporting: exposure data, incident notification, and investigation
- Dust control plan
- Fire safety plan
- Emergency response plan
- Spill prevention and response plan
- Storm water pollution prevention plan

Power Plant Operation and Maintenance

Environmental O&M Compliance Plan

- Onsite documentation, site access and ROW restrictions
- Worker Environmental Awareness Program (WEAP)
- General operations and maintenance activities avoidance and minimization measures
- Dust control plan
- Lighting plan and other visual resources management
- Fire safety plan
- Biological Resources Mitigation, Monitoring, and Reporting Plan (BRMMRP)
- Wildlife Prevention and Drainage, Erosion, and Sediment Control Plan (DESCP)
- Stormwater management plan and DESCP

Protection of Biodiversity

We protect biodiversity as we develop solar and battery energy storage projects worldwide. For projects we develop, we prepare biological protection plans, take measures, and obtain all required approvals in terms of biodiversity protection as shown in the following table. Preserving the local biodiversity is also important for power plants in which we provide O&M services.

We implement a Worker Environmental Awareness Program (WEAP) for all projects we undertake. Before starting work on project sites, all construction personnel are required to undergo WEAP which has four primary objectives:

- Acquaint the workers with applicable environmental laws and regulations;
- Familiarize workers with potential sensitive biological, cultural, and paleontological resources in the project area;
- Outline measures designed to avoid any harm to these sensitive resources; and
- Explain the procedures to be followed if sensitive resources are encountered or in the event of compliance violations.

Biodiversity Related Permits and Measures

- Worker environmental awareness program
- Biological Resources Mitigation, Monitoring, and Reporting Plan (BRMMRP)
- Wildlife Prevention and Drainage, Erosion, and Sediment Control Plan (DESCP)
- Designated biologist(s)
- Biological monitors
- Wildlife entrapment avoidance
- Storm water management plan and Drainage, Erosion, and Sediment Control Plan (DESCP)
- Vegetation communities' restoration and compensation
- Riparian habitat
- Prevent ponding
- Weed management
- Resource agency notifications
- Delineation of work areas
- Staging, stockpiling, and materials storage
- Special-Status plant avoidance, minimization, and compensation
- Vehicle access and speed limits
- Equipment parking and storage
- Hazardous spills
- Debris and trash disposal

Below are a few examples of specific measures we have taken in our commitment to biodiversity and efforts to reduce the environmental and ecological impacts of our solar and battery energy storage development:

- The environmental and safety performance of a project is integrated into the KPIs of the EPC and O&M teams
- Contractors hired by the company must have site-specific environmental and safety plans to begin construction
- Adopting new technologies, such as mix-use projects incorporating agriculture and PV (Agro-PV), for example, using sheep for vegetation management around projects where permitted
- Integrating biodiversity conservation plan into projects' environmental management plans

- Measures must be taken to ensure there is no ground and surface water contamination at project sites
- Project site layouts must be designed to minimize potential visual impacts
- Compensating land acquired during project development to support native species, to be protected and maintained for at least 20 years to ensure a healthy habitat for native plant and animal species
- Module recycling on project sites where modules have been damaged during installation. These activities help ensure waste is not sent to landfills, but to recycling facilities where the materials can be recovered and reused

These efforts have helped us minimize project delays related to environmental and ecological impacts or community engagement, as these factors are considered early during the project planning phase.

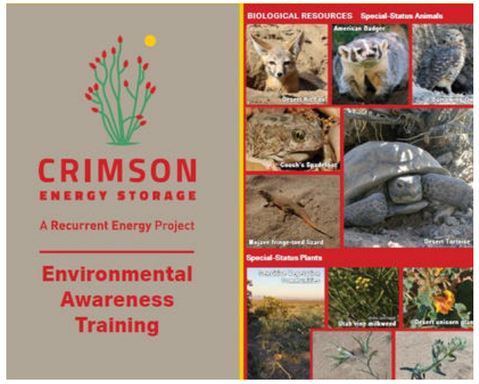
Case Study: Crimson Energy Storage Project Biodiversity Efforts

The Crimson Energy Storage project is a 350 MW / 1,400 MWh stand-alone energy storage project that provides flexible capacity to the California grid. This energy storage project was developed by Recurrent Energy, Canadian Solar's wholly owned subsidiary, and is now 20% owned by Recurrent Energy and 80% owned by a fund managed by Axium Infrastructure US Inc. CSI Solar's CSI Energy Storage team was the turnkey system integrator of the project who delivered the full engineering, procurement, and construction (EPC) services and is now providing the long-term operational services for the project. The Crimson Energy Storage Project is in Riverside County, approximately 13 miles west of Blythe, just north of the Mule Mountains and south of Interstate 10.

The following are the Environmental Awareness Training materials developed specifically for the Crimson Energy Storage project:

General Avoidance Measures

- Stay within marked project boundaries.
- Use only approved access roads. Observe a speed limit of 15 miles per hour on Powerline Road and anywhere within the Project area.
- Before moving a vehicle, check underneath for desert tortoise or other wildlife.
- Maintain and inspect all erosion and storm water control measures.
- Keep fluid spill-containment and clean-up materials readily available. Clean up and report all hazardous material spills immediately.
- Do not discharge water into unapproved areas. Prevent ponding of water.
- Backfill potential wildlife pitfalls by backfilling or sloping excavations. Cap pipes and culverts.
- Do not bring pets, firearms or weapons to the Project site.
- Dispose of all trash and leftover food items in trash receptacles.



Biological Resources

- Special-status wildlife and rare plants are known to occur in the Project area. Many of the biological resources found in the Project area are protected by state and federal laws.
- There will be no handling, feeding, or disturbing wildlife. **Do not touch** any wildlife, especially tortoises.
- Equipment and vehicle maintenance and wash areas will be located 100 feet from the upgradient side of any Environmentally Sensitive Areas for rare plants.
- Notify a Biological Monitor if you believe a protected animal or plant species is in an active work area.
- Biological Monitors will be on site to conduct surveys, monitoring, and ensure compliance with all biological measures.

Cultural and Paleontological Resources

- Cultural resources have been identifed in the Proiect area. Previously unidentified cultural resources may be affected during earth-moving activities, clearing, grading, drilling, and trenching These require appropriate treatment and protection.
- If you discover a potential cultural resource, stop work and do not touch or move it. Mark the area with flagging and contact a Cultural Resources Monitor.
- Paleontological resources, or fossils, are the remains, imprints, or traces of once-living organisms preserved in rocks and sediments. These sediments in the Project area have potential to yield signifcant fossil resources.
- If you think you see a fossil, let your supervisor and a Paleontological Resources Specialist know. Do not inspect, pick up, or pocket any fossils.

Unexploded Ordnance

- Unexploded ordnance (UXO) are military munitions that were used, but failed to function as intended. UXO could be found at the Project site, and could be on top of soil and vegetation, partially buried, or buried.
- If you find possible UXO, avoid contact, GPS the location, mark the vicinity of the UXO discreetly, take a photograph, and report it immediately.

Penalties for Non-Compliance

- This brochure outlines tips to avoid impacting environmentally sensitive resources thus avoiding violations of local, state and federal environmental laws.

Climate-Related Risks and Opportunities

100% of Canadian Solar's revenues are derived from clean, renewable energy, which contributes to the global decarbonization goals established in the Paris Agreement.

Climate-related risks pose a serious threat to human well-being and societal development. Although our businesses contribute to the global decarbonization efforts, our operations, especially our module and battery storage manufacturing businesses have impacts on the environment. We have set up an environmental management system that is certified under ISO14001 and 5-year rolling targets on environmental metrics to measure, manage and minimize these environmental impacts.

Climate-Related Risks

Climate-related risks associated with the development of our businesses are listed as below, including but not limited to:

Climate-Related Risks	Time Horizon	Potential Impacts	Estimated Financial Implications	Management Method
Compliance with climate-related regulations and initiatives	Short to long term	There may be increased costs and administrative responsibilities due to changes in regulations and policies in the areas of climate, energy, and environment	These may change depending on how the regulations and initiatives will evolve and how they will impact our business	Monitor and comply with the development of the regulations and initiatives in an efficient way
Environmental impact from our solar and battery storage manufacturing businesses	Short to long term	Although 100% of our revenues are related to renewable energy, our operations, especially our manufacturing activities, have impacts on the environment, from the perspective of GHG emissions, energy and water consumption, and waste generation	Our environmental related expenditure for 2022 was around US$41 million, including capital expenditures and other expenses. The environmental related expenditure depends on the scale of expansion of our business, and we expect it will continue to increase in 2023 and 2024, considering we are significantly expanding our manufacturing capacities	We have established an environmental management system that is certified under ISO14001 to measure these impacts and set up 5-year rolling targets on environmental metrics to reduce the impacts
Environmental and ecological impacts from our solar and battery storage project development businesses	Short to long term	Environmental and ecological impact on the community where we develop the projects, including visual impacts, habitat disruption, wildlife fatalities, and construction noise	Project development related expenses are expected to increase to optimize project design to minimize visual impacts, optimize project locations to minimize the risk of habitat disruption, and minimize noise resulting from construction activities	We have integrated the environmental and ecological risks associated with each of the project we develop into our internal project review and approval process to minimize the impacts
Product end of life management	Short to long term	Environmental impact of our solar modules after they come to end of life	Product end of life management increases our R&D expenses in terms of module recycling related technologies and technologies to prolong module's lifetime	Work on R&D activities related to module recycling and module lifetime extension
Environmental impact among our supply chain	Short to long term	Our suppliers' manufacturing activities have impacts on the environment, such as GHG emissions, energy and water consumption, and waste generation		We conduct supply chain ESG audit to make sure our suppliers comply with our standards on ESG. We aim to leverage this exercise to reduce the environmental impact from our suppliers

Please refer to our annual report Form 20-F filed with the U.S. Securities and Exchange Commission for a more detailed discussion of the risks associated with our businesses.

Climate-Related Opportunities

The widespread adoption of renewable energy, including solar, is critical to meeting global decarbonization goals. Meanwhile, solar has become one of the cheapest sources of energy with the most competitive Levelized Cost of Energy (LCOE) across the global major power markets, according to Lazard's 2023 LCOE Report. Therefore, market forces serve as a tailwind to the global adoption of solar energy.

As calculated by the International Renewable Energy Agency (IRENA), to fulfill the 1.5-degree Celsius target of the Paris Agreement, solar PV's cumulative installations must increase to 5.5 TW or 5,500 GW by 2030 and 20 TW or 20,000 GW by 2050, up from 1 TW or 1,000 GW in 2022. This indicates an average annual installation requirement of 680 GW of solar capacity until 2050, whereas the solar installations for 2022 were about 250 GW, as reported by Bloomberg New Energy Finance. With solar energy currently contributing to merely 3% of the global energy mix, the growth potential for solar energy is substantial, and we are only at the beginning of this structural growth trajectory.

Moreover, the demand for energy storage is expected to increase exponentially in tandem with the continued growth of renewable energy, including solar. The increasing penetration of renewable energy lowers power costs and decarbonizes the power grid. However, it creates price volatility and affects grid stability. Energy storage can mitigate the uncertainties of renewable energy on the grid; as such, energy storage has entered a phase of exponential market growth. According to Wood Mackenzie estimates, the cumulative capacity for energy storage could reach 1.2 TWh or 1,200 GWh by 2030 from close to 100 GWh in 2022.

For Canadian Solar, the significant growth visibility for both solar and energy storage presents major growth opportunities in both the short and long term, as the nature of our business and strategy is directly aligned with providing affordable clean solar energy and integrated end-to-end energy storage solutions.

The following climate change-related opportunities associated with our business development have been identified, among others:

Climate-Related Opportunities	Time Horizon	Potential Impacts	Estimated Financial Implications	Management Method
Growing demand for solar modules	Short to long term	Growth of our solar manufacturing business	2023 revenue is expected to grow to US$9.0 billion to US$9.5 billion from US$7.5 billion in 2022. 100% of our revenues are associated with renewable energy Long term revenue growth is expected, as we aim to increase our global market share to 15% in 3-5 years from 9% in 2022	Continue to invest in technology R&D to further increase efficiency of solar modules and product quality and reliability
Growing demand for battery storage system solutions	Short to long term	Growth of our battery storage system solutions business		Continue to invest in R&D of battery storage system solutions
Growing demand for solar power plants	Short to long term	Growth of our project development business and O&M business		Capture market opportunities and expand solar project development pipeline
Growing demand for battery storage plants	Short to long term			Capture market opportunities and expand battery storage project development pipeline
Green financing to support the growth of our solar and battery storage development businesses	Short to long term	Enable the continued growth of our solar and battery storage project development businesses	In 2022, we renewed our EUR100 million note program to support the development and acquisition of new solar PV and battery storage projects in Spain and globally In 2021, we successfully issued EUR30 million green bond to support the development of our solar and battery storage projects in the EMEA region Also in 2021, we received JPY8.1 billion (US$75 million) through the issuance of Green Project Bonds in Japan to support the construction and operation of the 43 MWp Ibaraki and Hiroshima projects developed by us. We received the "Green Bond of the Year" award from Environmental Finance, an online news and analysis services headquartered in London, for this green project bond We expect to receive further support in green financing as the demand for solar and battery storage increases to achieve decarbonization goals	Maintain good relationship with financial institutions as we execute on and expand our project development pipelines

Case Study: Canadian Solar Infrastructure Fund

Canadian Solar captures climate-related opportunities not only in EMEA, but also in Japan. Canadian Solar owns approximately 15% of CSIF, Japan's largest publicly listed solar infrastructure fund (TSE: 9284). CSIF invests in renewable energy power generation facilities in Japan and embraces ESG as a core tenet to enhance shareholder value. Canadian Solar's subsidiary, Canadian Solar Asset Management K.K. ("CSAM"), serves as the asset manager of CSIF and became **a signatory of the UN PRI (United Nations Principles for Responsible Investment)** in 2019. CSAM is committed to fulfilling its social responsibilities as an asset management company and integrates ESG factors into its investment and ownership decisions. CSAM was the first asset manager of a listed infrastructure fund on the Tokyo Stock Exchange to adopt this approach to sustainable investing.

The table below details green finance that has been secured by CSIF:

	Amount (JPY billion)	Type of Debt	Agency	Rating
2017.11.22	15.7	Green Loan	JCR	Green 1
2020.5.11	N/A	Green Finance Framework (Corporate)	JCR	Green 1
2021.1.26	3.8	Green Investment Bond	JCR	Green 1
2021.3.8	17.0	Green Loan Green Loan	JCR Shinsei	Green 1 Shinsei Green

CSIF's Corporate Green Finance Framework is based on ESG investment guidelines such as the Green Bond Principles (2018 Edition) published by the International Capital Markets Associations and the Green Bond Guidelines (2020 Edition) published by the Ministry of Environment in Japan. CSIF's Green Finance Framework, as well as its other bonds and loans, have received the highest rating of Green 1 from the Japan Credit Rating Agency, Ltd. (JCR).

300 KW Energies des Territoires Commercial Solar Rooftop, France

3 Social Responsibility

As one of the world's largest solar technology and renewable energy companies, Canadian Solar is dedicated to powering the world with solar energy and fostering a cleaner planet for future generations. Our goal is to "Make a Difference" by nurturing a corporate culture defined by equity, diversity, and inclusion, and generating a lasting positive impact on both societies at large and the specific communities where we operate. We regard our culture and people as our most valuable assets, serving as the key catalyst for our competitive advantage.

Mission

Lead the energy revolution and create a brighter future together

Vision

Power the world with solar energy and create a better and cleaner Earth for future generations

Core Values

Customer Success, Innovation, Grit, Excellence

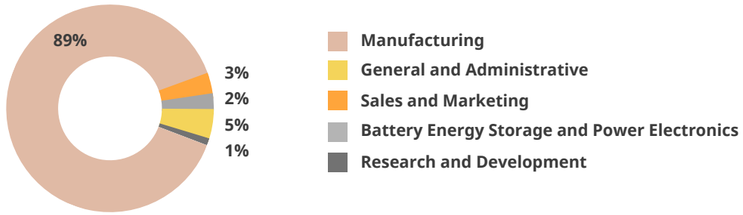
Slogan

Make The Difference!

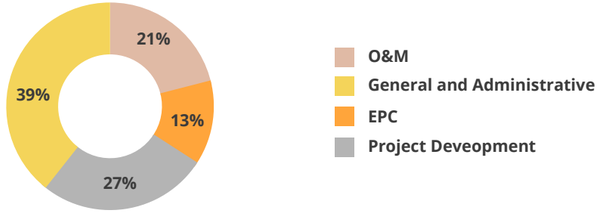
Working at Canadian Solar

As of December 31, 2022, our global team consisted of 18,423 individuals, 17,793 full-time employees and 630 part-time staff, including trainees. Of these, 17,737 were employed by CSI Solar, while 686 were part of our Recurrent Energy division, formerly Global Energy. In conjunction with our in-house team, we partner with roughly 2,000 part-time contractors globally.

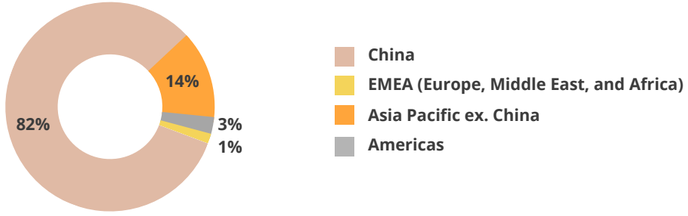
CSI Solar



Recurrent Energy



Total Employees by Region



Equity, Diversity, and Inclusion

At Canadian Solar, ethical business practices, responsible sourcing, and treating our employees with dignity and fairness are paramount. We champion equity, diversity, and inclusion throughout our organization and are committed to cultivating a diverse workforce, which fosters creativity, innovation, and underpins our long-term success. We not only adhere to but strive to exceed the employment laws and regulations in the jurisdictions where we operate. Aligning with our global strategies, we implement best practices across our local operations, from manufacturing to sales and project development, to ensure local relevance and effectiveness.

Canadian Solar is an equal employment opportunity employer (link). We maintain a policy of zero tolerance towards discrimination in any form, whether based on race, color, ethnicity, gender, religion, political or other opinions, sexual orientation, age, disability status, or any other distinguishing characteristics. As part of our commitment to transparency and fairness, we complete and submit the Equal Employment Opportunity Form, or **EEO form** (link) for our operations in the United States. This provides a comprehensive demographic breakdown of our U.S. workforce by race and gender.

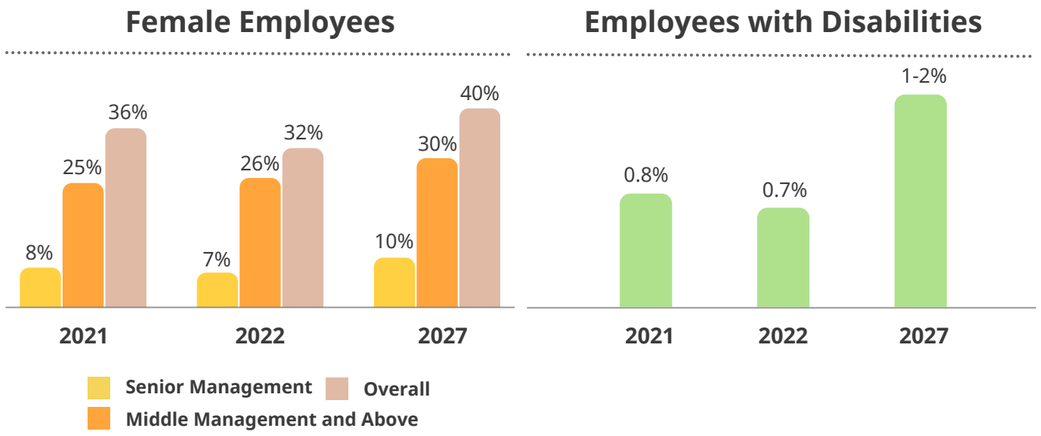
Canadian Solar is against any form of forced labor within our operations or supply chain. We are committed to treating all employees and individuals associated with our businesses fairly, respectfully, and with the utmost dignity. Our **Labor and Human Rights Policy** (link) stipulates these standards, outlining the rights to which all our employees are entitled to.

EMEA staff celebrating 2023 International Women's Day

Promoting Equity, Diversity, and Inclusion in all Human Capital Management Areas

Diversity and Inclusion

Embracing diversity and inclusion ranks high on our list of priorities. In 2022, women accounted for 32% of our workforce, with female representation in middle management at 26%. Our employees with disabilities made up 0.7% of our staff. Additionally, ethnic minority groups represented 45% of our workforce in the United States.



Hiring and Promotion

Canadian Solar hires, promotes, and rewards employees based on their qualifications, experience, potential for development, and meritocratic performance. We also consider diversity factors that help us drive a more competitive and effective business, aiming to increase the proportion of our female employees, employees with disabilities, and individuals from underrepresented racial or ethnic groups. Our goals include increasing female representation in our global workforce to 40% by 2027, up from 32% in 2022, and raising the proportion of employees with disabilities to 1-2% by 2027, up from 0.7% in 2022.

Raising Awareness

We regularly host events and workshops aimed at elevating the awareness of our employees and management team on equity, diversity, and inclusion. For example, we celebrate International Women's Day to applaud women's achievements, advocate for gender equality and fundraise for charities that champion gender equality.

On International Women's Day in 2022, our Chairman and CEO, Dr. Shawn Qu, addressed all Canadian Solar employees, underscoring the significance of acknowledging, connecting with, and including women in our work environment. In his speech, Dr. Qu stated, "Diversity and inclusion are vital elements of our entrepreneurial culture. They foster a variety of ideas, thoughts, and perspectives, driving innovation. A diverse and inclusive environment nurtures a sense of belonging among our employees, facilitating their growth and success. Diversity only thrives with inclusion; building such an environment is everyone's responsibility. I urge our leaders to adopt an inclusive leadership style, crafting a milieu of involvement, respect, and connection. We can generate business value by harnessing the richness of ideas, backgrounds, and perspectives."

In our EMEA offices, we organized a "Break the Bias" workshop. During this session, our colleagues exchanged ideas, shared personal experiences, and suggested ways we could further improve our performance in the areas of equity, diversity, and inclusion.

Training on Equity, Diversity, and Inclusion

Training plays an instrumental role in our ongoing pursuit of greater equity, diversity, and inclusion in the workplace. We provided the following programs in 2022 by collaborating with our compliance training partner, Traliant, and through Canadian Solar University:

- Guest lectures from leading Diversity, Equity, and Inclusion (DEI) experts
- Workshops on creating a respectful remote workplace
- Training on how to be an ally
- Seminars on how to prevent microaggressions and bullying in the workplace
- Workshops on cultural competence in the workplace
- Management training focusing on adopting inclusive leadership behaviors
- Courses on creating a positive work environment

For 2023, we will expand our offerings by introducing unconscious bias training specifically tailored for management roles.

Accountability

Diversity and inclusion are included in our team leaders' key performance metrics to ensure accountability in creating a diverse and inclusive workplace.

Gender Equality

At Canadian Solar, we champion gender equality, seeking to motivate and attract women to join our global team.

We recognize the importance of gender equality, not only as a human rights issue, but also as a crucial business consideration. Gender equality can enhance and diversify our talent pool. Women bring vital perspectives to decision-making, thereby improving execution efficiency and outcomes. Considering the underrepresentation of women in the renewable energy sector, we have made gender equity a priority at Canadian Solar, striving to attract more talented women.

Women in Leadership Program

In late 2022, we collaborated with Cornell University to initiate our comprehensive Women in Leadership program. This program offers training designed to guide women on their leadership journeys and enrich our talent pipeline with exceptional female leaders. Our inaugural cohort of carefully chosen female leaders participated in this three-month course featuring 40 hours of instruction from Ivy League professors and instructors. The program aims to expedite the development of our female leaders, thereby boosting female representation in senior leadership positions.

Development Group: WISE: Women in Solar Energy

In 2019, Canadian Solar established the Women in Solar Energy (WISE), an industry association in China aimed at promoting the participation and career advancement of women in the solar industry. WISE comprises female executives from various companies within the industry. The association frequently organizes events to discuss solar technology and industry trends, with the goal of offering mentorship and resources to women in the solar industry. During the most recent WISE forum, held in March 2023, topics related to ESG, and battery storage were discussed. These discussions enhanced ESG awareness and facilitated the sharing of cutting-edge industry knowledge among members.

Recurrent Energy Town Hall Meetings

Recurrent Energy conducts online townhalls every quarter. Town halls are opportunities for senior management to provide employees with strategic business initiatives, progress updates toward achieving annual targets, and other goals. Town halls also offer a public forum for employees to ask questions directly to senior management, holding them accountable and allowing management to align the company with industry developments and corporate goals. Furthermore, these meetings foster employees' sense of belonging, thereby creating an inclusive environment.

Employee ESG Survey

We conducted a comprehensive employee ESG survey in April 2023. The results indicated that 80% of respondents held a positive view of our environmental, social and governance performance, with governance standing out as our primary strength, receiving a favorable rating of 86%. Nevertheless, the environmental index recorded the lowest score at 68%. The four areas identified for enhancement include emphasis, awareness, leader, and colleague behavior.

Certain demographics, specifically middle managers, directors, employees with 3-5 years tenure, female employees, and those within the Asset Management and Legal functions conveyed fewer positive perspectives. The data suggest key opportunities for improvement lie in advocating for environmental responsibility, boosting social initiatives, and improving communication about retirement plans in certain countries.

The company is utilizing the survey results to devise an effective strategy that addresses and improves our ESG performance and employee communications. We continue prioritizing environmental responsibility, strengthening our social initiatives, and refining communication regarding our retirement plans in specific regions.

Talent Strategy, Training, and Development

Our team members are our most valuable assets. They are at the core of our sustainable competitiveness and crucial in achieving our goals and mission. Consequently, we periodically reassess our talent strategy and track progress to ensure alignment with our short, medium, and long-term objectives.

Talent Review and Succession Planning

We regularly assess and recognize the talent skillsets vital for our business's long-term success, consequently shaping our talent pipeline. We offer our employees professional training programs to develop the necessary skillsets and knowledge that contribute to their personal career growth and the company's sustainable development. Concurrently, we have established a succession planning process rooted in our business needs, talent availability, and employee feedback.

In 2022, we collaborated with Development Dimension International (DDI), a renowned global leadership and human resources consulting firm. This partnership aimed to implement a more systematic approach to evaluate our talent potential and capabilities for succession planning. This strategy has been instrumental in identifying and nurturing talents for critical management roles across our global operations.

Talent Retention Strategy

Share Rewards and Compensation Plans

At Canadian Solar, we offer share-based incentive plans to employees. In 2006, Canadian Solar Inc., adopted a share incentive plan under which we grant restricted shares, options, and restricted share units to eligible employees, directors, and consultants. Additionally, CSI Solar Co., Ltd., a majority-owned subsidiary of Canadian Solar Inc., maintains an Employee Stock Ownership Plan (ESOP) available to eligible directors and employees. We consider share-based compensation, including performance-based share awards, to be crucial for attracting, retaining, and motivating key personnel. We plan to continue offering share-based compensation in the future. For further details on our share-based incentive plans, please refer to our annual report (link).

Onboarding Buddy and Mentoring Programs

At Canadian Solar, we care about the onboarding experience of our new team members. To ensure an efficient, inclusive, and personalized experience, we pair new colleagues with experienced employees who serve as their buddies, providing support as they adjust to their new roles. For instance, in the EMEA region, new colleagues receive a welcome call from their buddies, are invited for coffee or social events, and are introduced to other team members and members from different departments. Additionally, we offer a mentoring program that pairs less experienced or newly joined employees with seasoned colleagues. This program emphasizes career development and diversity advocacy, typically spanning three months. After this period, the mentor or mentee can decide whether to continue the partnership.

Talent Training and Development Programs

Canadian Solar University

Canadian Solar University (CSU) seeks to expand our employees' understanding of our operations at our wholly owned subsidiary, Recurrent Energy. Our focus is on fostering innovation and enhancing internal collaboration. CSU is built on three pillars: Functional/Technical Training, Leadership Academy, and Individual Development. These elements support the advancement of employees' expertise across various disciplines, both within and across business functions. CSU provides a comprehensive suite of learning resources. These encompass all key business functions, including project development, project sales, project finance, procurement, energy storage, manufacturing, asset management, operations and maintenance, risk management, and EPC management. Each topic is structured into different proficiency levels, ranging from introductory 101 courses to advanced 301 courses.

In 2022, we designed and globally launched thirty-nine courses, including ten modules leading to certification in EPC project management and construction management. Through CSU, our employees received 88.5 hours of training and awarded us a satisfaction score of 4.6 out of 5.

Major courses we launched in 2022 include:

- Risk Management 201 - Investment Committee Process & Metrics
- O&M 201 Performance Monitoring & Data Analytics
- Procurement 201 - An Introduction to PV Mounting Systems
- Business Development 301 - Examining Key Variables in Early-Stage Projects
- Project Finance 301 - Corporate Finance Case Study
- PPA 301 - Deep Dive in Italy, Brazil, and the USA
- Project Sales 301 - Crimson Case Study

Canadian Solar University

At Canadian Solar, we acknowledge that leaders at all levels require ongoing guidance and training to thrive and inspire their teams. Our Leadership Academy, a key component of Canadian Solar University, offers individual and group-based training opportunities for our leaders. In 2022, we introduced courses designed for new and first-time leaders, such as Franklin Covey's "The 6 Critical Practices for Leading a Team" and "Leading at the Speed of Trust." In addition, we provided "Interviewing Skills for Managers" and "Executive Communication" courses to over 350 leaders across the company.

In 2022, we initiated a trial run of the Key Talent Program in the Recurrent Energy regions of Japan, Asia Pacific, and Latin America, with the objective of formulating individual development plans for emerging talent. Participants in this program undertook the Myers-Briggs Type Indicator assessment and consultation, as well as a competency-based 360 assessment through the reputable DDI 360 platform. The insights derived from both assessments enabled us to design comprehensive individual development plans, facilitating rapid progress toward participants' career goals. Several members of this Key Talent Program received promotions within months of completing the program. We plan to expand this initiative to other regions soon.

In addition, Canadian Solar established a partnership with Cornell University to deliver developmental courses specifically designed for women within our organization. This program comprises two tiers - Women in Leadership and Women in Executive Leadership, each offering content tailored to the respective career level of the participant. Moreover, we invested in the growth of our senior leaders, equipping them with the necessary skills to guide their teams through intricate challenges. In 2022, eight senior leaders and executives underwent coaching by an executive specializing in the High-Performance Patterns (HPP) coaching method.

In 2023, we will maintain our commitment to the Leadership Academy by introducing Essential Skills for People Leaders (ES4PL). This is a comprehensive 34-week program conceived to facilitate the transition of new leaders into proficient managers. The ES4PL program, integrating asynchronous learning with group coaching, ensures participants' immediate application of acquired knowledge. We plan to initiate a new ES4PL cohort every quarter.

The third pillar of CSU is individual development. Every employee should strive to enhance their skills, whether as an individual contributor or an emerging leader.

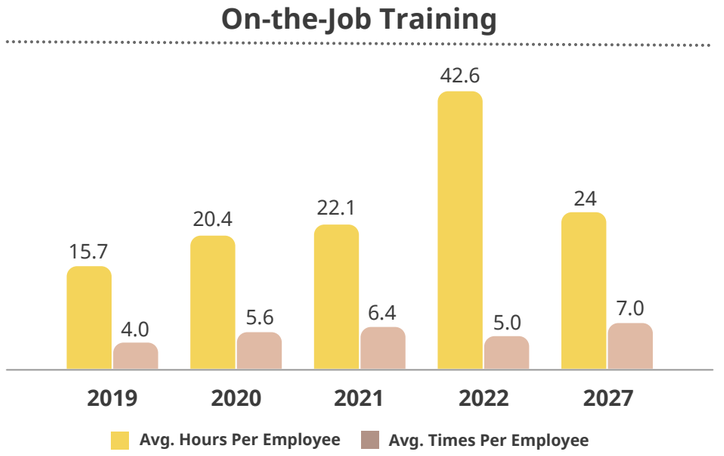
To facilitate this, Canadian Solar has partnered with LinkedIn Learning, granting our employees unrestricted access to an extensive suite of training and developmental courses. This broad spectrum of content enables employees to pinpoint resources specific to their developmental needs or to address objectives identified through performance management.

On-the-Job Training

Additionally, we facilitate regular on-the-job training sessions for all employees at our CSI Solar division, covering areas such as Environmental Health and Safety (EHS), compliance, industry and market development, professional skills, and trade knowledge.

Employees at CSI Solar received an average of 42.6 hours of training, equivalent to five sessions, in 2022.

We observed a substantial increase in the volume of training provided in 2022 compared to previous years, largely attributable to the significant expansion of our manufacturing capacities. We delivered a total of 1,463 courses in 2022, either online or in-person. These courses were classified into five categories: general courses, professional courses, special skill courses, compulsory courses, and leadership courses.



	Examples
General Courses	Efficient office skills, project management skills
PV Industry Professional Courses	Quality tools, new material knowledge, greenhouse gas emission standards
Special Skill Courses and Projects	New Power Camp, school enrollment talent cultivating project, IEC 62941 photovoltaic module manufacturer quality system
Compulsory Courses	Annual compliance training, EHS fire-fighting skills and fire evacuation drill, quality awareness, information security awareness
Leadership Courses	Leadership for middle and senior managers, women in leadership

Employee Performance Appraisal

We have implemented an online, trackable performance appraisal system that aligns employee contributions with our corporate goals and objectives. At the beginning of each year, employees work with their managers to establish quarterly and annual goals, ensuring they align with our yearly operational targets. In the year-end performance review process, supervisors give employees a preliminary performance rating, reflecting their performance and the actual business results of that year. Employees receive feedback on their performance, and the performance rating is only finalized upon employee approval.

Work-life-balance

Our employees are our most valuable assets, and we are committed to creating a workplace that fosters a healthy work-life balance. In 2022, we implemented a hybrid work policy, which allows our employees to work from home for a portion of their work time based on their individual needs and regulatory requirements in each country. This approach, which reflects a culture of trust, offers our employees the flexibility to choose a work arrangement that best suits them, potentially increasing employee satisfaction and work efficiency.

In addition, we offer various types of personal leave beyond legal requirements to support our employees in balancing work and family responsibilities. For instance, in China, we grant an additional three days of annual leave on top of the statutory annual leave, ten days of marriage leave, up to 158 days of maternity leave, fifteen days of paternity leave for male employees, ten days of annual paternity leave for three years following the birth of their child. In other regions, we also provide paternity leave to assist employees in caring for and nurturing their newborns.

Freedom of Association and Collective Bargaining

Canadian Solar strictly abides by the employment laws and regulations in the jurisdictions where we operate. Our respect for our employees' rights encompasses their ability to form or become members of labor unions or similar organizations of their choosing, as well as the right to collective bargaining to further their interests. Our **Labor and Human Rights Policy** (link) explicitly establishes our commitment to uphold our employees' rights to freedom of association and collective bargaining.

Grievance Procedure and Zero Tolerance for Retaliation

In line with our commitment to fostering a safe and inclusive workspace, we have put in place comprehensive internal processes aimed at shielding our employees from acts of discrimination and other forms of misconduct. Our grievance mechanism outlines the process for lodging a complaint, the investigation stages, and our stringent non-retaliation policy. Regular awareness drives about these support mechanisms are conducted to embolden our employees to confidentially report any grievances concerning policy violations, bullying, discrimination, harassment, or other potentially sensitive issues. Consequently, we are well-positioned to respond promptly and effectively to any grievances, helping to mitigate risk, limit the ramifications of transgressions, and promote a healthy, positive work environment.

Cafayate 100 MWp, Argentina

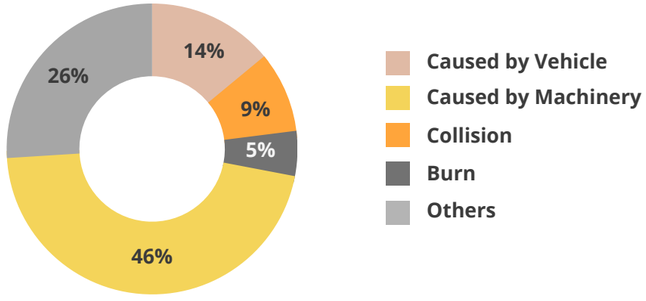
Occupational Health and Safety

At Canadian Solar, employee safety is our top priority. For our manufacturing businesses or CSI Solar, we have implemented the ISO45001 occupational health and safety management system (formerly OHS18001) since 2008.

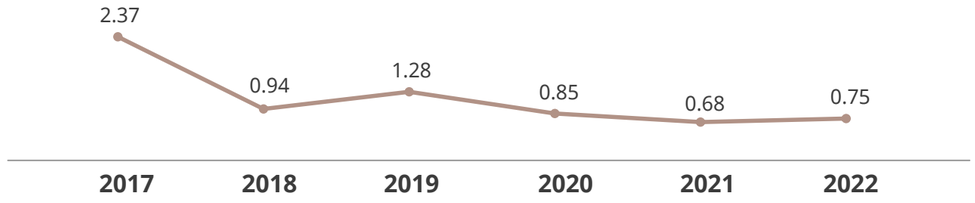
Our safety policies mandate the establishment of a safety committee and a dedicated safe operations management team before a factory commences operations. The safety committee convenes regularly to review, discuss, and decide on safety-related measures. Before their work commencement, all employees undergo environment, health, and safety (EHS) training and are required to pass the associated tests. We also ensure our employees are equipped with the appropriate personal protective equipment (PPE). We rigorously report and address safety incidents, including "near misses," in compliance with our safety protocols. Any incidents that result in lost work time must be reported within one hour of their occurrence. We conduct internal investigations for all such incidents and implement robust corrective and preventive measures to prevent future accidents.

Our safety policies and procedures have effectively enabled us to maintain a low frequency of safety-related incidents. In 2022, our recordable injury rate, encompassing any injuries that required medical treatment, stood at 0.75 cases per million working hours. To enhance our safety management system further, we are instituting programs such as management of change, LOTO (lockout-tagout), and machinery safety. These measures aim to reduce operational risks and prevent injuries to our employees.

Types of Injuries *(%)*



Recordable Injury Rate *(per million working hours)*



At Recurrent Energy, our global project development subsidiary, we prioritize the provision and maintenance of a safe and healthy work environment in collaboration with our employees and business partners.

This is implemented via an active health and safety program. We strictly comply with all pertinent occupational safety laws and regulations in every jurisdiction where we operate. In all instances, we prioritize the protection of our employees, contractors, and visitors from occupational illness, injury, and risk, while safeguarding materials, assets, and the environment against fire, damage, and other potential losses. Our commitment is carried out through an integrated system emphasizing prevention and continuous improvement.

Recurrent Energy is making significant progress towards compliance with ISO9001 quality management standards and ISO45001 occupational health and safety management system. We anticipate full compliance with these standards by the end of 2023.

Here is a summary of Recurrent Energy's incidents for 2022. Our aim is to reduce the total recordable incident rate (TRIR) in 2023. We remain committed to improving our health and safety performance across all our project development activities.

Incident Data (North America)	Recurrent Energy		
	Overall[1]	EPC[2]	O&M[3]
Fatalities	0	0	0
LTIR (lost time injury rate)	0	0	0
TRIR (total recordable injury rate)	2.4	2.8	0

1 EPC and O&M activities related to solar and battery storage projects owned by Recurrent Energy
2 EPC services provided by Recurrent Energy to solar and battery storage projects owned by Recurrent Energy and 3rd parties
3 O&M services provided by Recurrent Energy to solar and battery storage projects owned by Recurrent Energy and 3rd parties

Hazardous Materials and Environmental Management

Our Environmental Management System certified under ISO14001, and our Occupational Health and Safety Management System certified under ISO45001, both integrate chemical and operating equipment safety management. This integration ensures that hazards in the workplace are systematically identified, evaluated, and effectively controlled within our manufacturing businesses.

Before introducing any hazardous materials or dangerous chemicals into our facilities, we implement a formal review and approval process. This process includes thoroughly examining the Safety Data Sheet (SDS) associated with each chemical, along with assessing potential hazards and risks. Our products, classified as "articles" within the REACH directive, do not release any chemical substances under normal or reasonably foreseeable conditions of use.

All employees responsible for handling hazardous chemicals receive specific training on the associated risks and the required safety precautions. We also provide general training programs to all employees, including mandatory environmental, health, and safety (EHS) training for all new hires, and regular EHS refresh training sessions.

Warning signs are clearly displayed in appropriate areas, and employees with duties related to hazardous materials have unimpeded access to information about these substances. We also provide medical checks for employees working in environments where they might be exposed to occupational hazardous agents.

Our safety procedures in all factories include hazard identification and assessment, management of changes, contractor safety, emergency response management, and confined space protocols, among others. When constructing a new factory, we conduct equipment safety reviews to ensure all deployed equipment is safe, aiming to provide a secure working environment for our employees.

To maintain control over hazardous materials entering our properties, we require our key suppliers and contractors to sign a suppliers' EHS agreement before commencing deliveries and services.

20 MW Changdu Utility Solar Plant, China

Connecting Employees with Company Mission

Sustainability lies at the heart of Canadian Solar's mission, and we encourage employees to engage and share in this vision actively. To achieve this, we have adopted the following approaches to embed our image with our employees' work.

Advocate

Our annual Earth Day celebration and company founding anniversary serve as platforms to underscore the importance of sustainability to our employees, particularly in the context of combating climate change. In conjunction with these celebrations, we host educational workshops and organize team building activities, fostering a culture of sustainability, and imparting practical ways to live more eco-friendly lives.

On Earth Day 2022, we organized two interactive sessions led by Sustainable Shane, who showcased the remarkable contributions of Canadian Solar towards environmental preservation. For our Founder's Day celebrations in 2022, we pivoted towards a deep reflection on our company values, culminating in engaging regional discussions and insights from a global guest speaker from the Barrett Values Centre. Looking ahead to 2023, we aim to broaden our advocacy initiatives within local communities, rendering our educational resources and events widely accessible.

Walnut Creek Staff celebrating Earth Day 2023

In December 2022, we organized a Sustainability Game at our EMEA offices. The goal of the game was to advocate the 17 Sustainability Development Goals of the United Nations as well as the company mission, vision, and values among our employees in a playful way through a memory game. The game itself was created in accordance with sustainable criteria and plastic-free materials.

In celebration of Earth Day 2023, Recurrent Energy's EMEA team initiated a sustainable hive adoption event. As a result, we have successfully adopted 190 beehives in Calascibetta, Sicily, Italy, as part of our ongoing efforts to advocate for biodiversity.

Volunteering

As of December 2022, we have planted a total of 1,136 trees in the EMEA region, offsetting approximately 24.9 tons of CO_2. This initiative includes tree planting at our EMEA offices for employees celebrating their 5th or 10th work anniversary. Furthermore, in 2022, our EMEA team initiated the "Bike for Environment" challenge. This team effort entailed logging the kilometers that employees rode on an exercise bike in our office or their own bikes. For every kilometer covered, Canadian Solar planted a tree. We planted 410 trees because of this challenge and 726 trees to honor our employees' work anniversaries. All trees were donated via GROW MY TREE (link).

In October 2022, our EMEA team based in Milan celebrated Canadian Solar 21st Founder's Day with a clean-up activity at Park Sempione, one of the most famous parks in downtown Milan. We partnered with Legambiente, an environmental association in Italy for this activity. Legambiente provided our team with working gloves, garbage bags, garbage grabber tools. The team collected many cigarette ends, plastic bottle caps, glass bottles and even an iron pipe. This was a very engaging team building opportunity connected to our company mission.

Corporate Giving Program

Canadian Solar is deeply committed to having a positive impact on the local communities where we operate. We strongly believe that investing in our surrounding neighborhoods not only benefits the well-being of our employees but also enhances our business success. Therefore, we pledge to devote our time, talent, and resources to support the diverse communities we inhabit and serve. Annually, our Human Resources teams collaborate with our executive team to establish the overall budget and allocation for our Giving Program, which consists of three types of grants:

Gifting: All our employees in the U.S. are eligible to request donations from the Giving Program for an eligible 501(c)(3) nonprofit organization*, subject to approval.

Matching: Employees who make personal donations to a qualifying 501(c)(3) organization can request matching funds up to $250 per year from the Giving Program budget, subject to approval from our compliance team.

100 Club Volunteer Grant: Employees who volunteer 100 hours within a year at a qualifying 501(c)(3) organization are eligible to request a $1,000 grant from the Giving Program budget.

*Section 501(c)(3) refers to a portion of the U.S. Internal Revenue Code that allows federal tax exemptions for nonprofit organizations, particularly those classified as public charities, private foundations or private operating foundations. This section is regulated and administered by the U.S. Department of Treasury through the Internal Revenue Service.

Donations Events

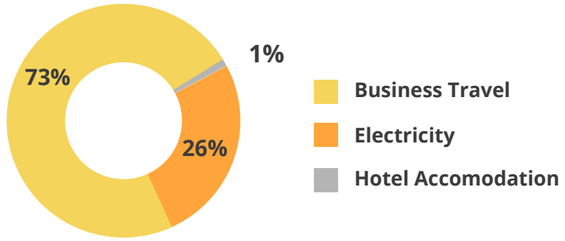
In 2022, our team extended their generosity to orphanages in Munich and South Africa. At our Munich office, employees came together to prepare Christmas gifts for children at a local orphanage, aiming to bring joy and a spark of happiness to their lives. The children expressed wishes for flashlights, towels, and trolleys, which were individually packed by our EMEA team members. Similarly, our team extended support to the Ithemba Labantwana Children's Centre in Cape Town, South Africa, reaffirming our commitment to make a positive impact on those in need (link).

Greenhouse Gas Emissions at Our Global Sales Offices

The main sources of carbon emissions at our sales offices include electricity consumption, business travel, and hotel accommodations. Business travel, as indicated in the pie chart below, is the primary contributor to these greenhouse gas (GHG) emissions. These emissions largely fall within the categories of scope 2 and scope 3 emissions. We calculated these figures based on actual expenditures related to electricity consumption, employee business travel, and hotel stays, including the use of hotel services.

Emission factors for electricity were primarily derived from local energy management authorities' data or from the France PPE2 tender. Emission factors for business travel and hotel accommodations were obtained from the EXIOBASE database v3.3. In 2022, the total GHG emissions from our offices amounted to approximately 939 tons of CO_2 equivalent, a rise from 2021. This increase primarily resulted from the inclusion of our newly opened energy storage offices and a resurgence in business travel following the abatement of the COVID-19 pandemic.

Sales Offices Carbon Emission Composition *(%)*



We are consistently striving to reduce or offset carbon emissions originating from our offices by prioritizing energy efficiency. In 2022, for instance, our U.S. offices were relocated to a LEED Gold Certified Building. This structure is equipped with a variety of features designed to enhance energy efficiency, such as LED lighting and motion sensors connected to the lighting system. All the appliances and office equipment installed, including computers, monitors, and printers, are ENERGY STAR®* certified. Notably, we were able to downsize our office space from 19,325 square feet to 12,500 square feet without reducing our headcount. At our EMEA offices, energy-saving measures are also in place, including motion sensor lights and timers that turn off the coffee machine after hours. Significantly, our Munich office is now entirely powered by green electricity.

In 2021, we invested in SolarWorX (link). SolarWorX provides off-grid solar home systems (SHS) for rural areas in Sub-Saharan Africa which has deployed 3,500 SHS in 2022, translating to providing green-electricity to approximately 14,000 people or displacing approximately 1,400 tons of CO_2 emissions.

*ENERGY STAR® is the U.S. government-backed symbol for energy efficiency.

Making the Difference through Community Commitment

Our goal is to cultivate long-term relationships that enable us to work together in the communities where we operate, making a difference through a positive contribution to society and the environment.

We collaborate closely with stakeholders in the communities where we develop our projects. Ranging from local grid experts to first responders, we seek partnerships with local entities, aiming to seamlessly integrate solar and battery storage projects into existing energy infrastructures and their surrounding communities.

Below are examples showcasing our risk mitigation strategies while integrating solar and battery technology into pre-existing infrastructure. Additionally, we detail our commitment to community engagement, ecological considerations, and energy policy initiatives.

1 MW SunEnergy Utility Solar Plant, Spain

NORTH AMERICA

United States

In 2022, the U.S. government passed the important Inflation Reduction Act, thereby setting off unprecedented growth in renewable energy projects. Nevertheless, challenges persist in realizing successful development, and proactive stakeholder engagement is one of our key drivers of competitive advantage. We initiate engagement with local, state, and federal agencies early in the development cycle to identify and mitigate potential risks. We respect community values and local ecological concerns and proactively interact with communities to seek development opportunities that minimize or avoid environmental and permitting obstacles.

LATAM

Brazil

Whenever possible, we undertake social work and prioritize hiring within local communities. For instance, our Salgueiro project is situated within a community inhabited by quilombolas, descendants of formerly enslaved Africans. We constructed a community center equipped with computers, printers, and soccer fields and organized social activities such as dance and gardening classes.

Mexico

Our projects in Mexico align with social plans designed to benefit the communities neighboring the Horus, Tastiota, and El Mayo solar project sites. These plans include specific programs that focus on indigenous communities. Annually, the three indigenous communities located adjacent to the El Mayo Project collectively decide on improvement works to enhance community infrastructure and quality of life. These works are financed through project funds and contributions from municipal and state sources.

Colombia

An agreement was established with the Mokaná community, located adjacent to our Caracoli project, to supply and connect solar modules that would power their local radio station. Additionally, we have secured a plot of land to construct a community development center for children. Furthermore, the project will notify the community of any reusable materials generated during construction and will prioritize hiring community members whenever feasible.

EMEA

Italy

Canadian Solar has consistently led the charge in Italy's energy transition by developing renewable energy projects that also generate positive local impact.

In Italy, integrating agro-PV solutions in our projects enables efficient solar generation using cutting-edge PV technologies while preserving local agricultural lands and biodiversity. Our agro-PV projects not only involve the cultivation of various native crops—specifically chosen based on land type—but also animal grazing and deploying beehives. Importantly, dual land usage facilitates the preservation of agricultural and pastoral jobs through agreements with local farms. Currently, Canadian Solar has a pipeline of 1.1 GW of agro-PV projects in Italy. Additionally, we minimize the visual impact on the landscape by incorporating vegetation barriers composed of Mediterranean scrub or native species.

Our renewable projects contribute to local socio-economic development by implementing compensatory works that align with local community needs. These compensatory measures are sustainability projects designed specifically for communities residing near our renewable plants. Thus far, Canadian Solar has funded energy efficiency projects for public buildings, improved existing road infrastructure to reduce noise and air pollution, and constructed water purification and sewage treatment plants.

Spain

Canadian Solar is deeply involved with the communities in which we operate from the beginning of the project development process. A core objective is to contribute to their sustainable development and gain long-term support from local communities.

For instance, we have established agreements with local governments and associations to strength the local economy, foster employment through local training, identify community needs and implement improvement measures, and support local cultural and recreational activities.

In the case of the Dueñas project, Canadian Solar participated in Arraigo—a national program initiated by local governments. This program seeks to revitalize rural areas experiencing depopulation due to urban migration. It provides employment opportunities and accommodation to individuals willing to relocate to the town. In Zamora, Canadian Solar has designated land to farmers, supporting them in seeding new crops, such as native plants and flowers.

We present an economic and industrial plan tailored to the region in projects that are part of a public grid capacity auction. These plans aim to stimulate economic and social development in the region, drive industrial growth, and generate employment and wealth. All of this is achieved while respecting the environment and harnessing locally sourced energy.

United Kingdom

Canadian Solar is steadfast in its commitment to support the U.K.'s goal of achieving carbon neutrality by 2050. Our strategy lies in deploying solar and storage solutions that adhere to the highest engineering standards. We conduct comprehensive evaluations of the potential impacts of our projects on stakeholders and the environment, and use these findings to guide the design, construction, and operation of our projects. With community engagement, meticulous design, and careful planning at the forefront, we strive to minimize any negative impacts and optimize benefits throughout the life of each project. We also assign a portion of our development costs towards community benefit funds specific to each project, which can in turn be used to improve the livelihoods of local communities once the project is operational.

The U.K.'s energy transition involves complex upgrades to the national energy transmission system and operating procedures. These upgrades have paved the way for viable grid connections for our projects. Although these connections' contractual arrangements and technical solutions are constantly evolving, integrating co-located solar and battery energy storage projects is becoming increasingly commonplace. This trend reduces risks and maximizes benefits for both the grid system and the energy market. Both the renewable energy industry and grid operators prefer the combination of these two technologies. Canadian Solar will continue to collaborate closely with technical and grid experts to ensure that our grid connections are fit for their intended purpose and are delivered promptly and at an appropriate cost. Our goal is to continue supporting the grid and help reduce energy bills for residents.

300MW solar plus 561MWh storage, Slate solar and battery storage plant, U.S.

APAC

Japan

The Japanese government has announced its ambitious goal of achieving carbon neutrality by 2050, which requires more sustainable solutions for the country's power grid. We anticipate regulatory changes designed to accelerate the installation of renewable energy to meet this target. Wind and solar power are variable resources with intermittent output; hence, transmission system operators must skillfully balance the demand and supply of power within their grid system to ensure resilience. Our solar solutions and battery storage combination perfectly align with this market requirement.

At the project level, we prioritize consistent consultation with local communities and government officials throughout all phases of our projects—development, construction, and operation. Our project development adheres to strict design protocols, which include implementing comprehensive drainage systems and stormwater prevention measures to protect water in and near the project site from contamination. The mountainous terrain of Japan presents unique challenges, but we have successfully navigated these complexities for over a decade, developing valuable expertise.

South Korea

Canadian Solar Korea is actively participating in the green energy transition as part of the country's Renewable Energy 3020 Plan and UN Nationally Determined Contributions (NDC) goals. We are not only developing traditional solar projects but also co-developing them with major RE100 partner companies. We foresee a future where our collaboration with these companies intensifies, as we aim to transform customer sites into clean solar energy projects. By working hand in hand with our partners, we can secure more projects for development, while our partners achieve decarbonization goals. This symbiotic relationship will contribute significantly to achieving the country's renewable energy targets for 2030.

Australia

Given Australia's swift progress towards renewable energy and electrification targets, our primary focus is increasingly on community and stakeholder engagement. We can address local concerns throughout the development process by maintaining open communication with local communities.

Our development process also involves interactions with rule-making bodies such as the Australian Energy Market Commission. We also remain vigilant for state and federal governments' proposed energy policy changes. We aim to advocate for a cost-effective transition to a lower emissions electricity network, with an increasing focus on solar and hybrid projects. These projects incorporate energy storage and innovative technical features not previously present in the Australian network.

We carefully choose project sites to minimize potential impacts on native flora, fauna, farmland, and local wildlife. If total avoidance is not possible, we ensure no net environmental loss by creating or purchasing biodiversity offsets.

146 MW Gunnedah Utility Solar Plant, Australia

Non-Governmental Organizations and Memberships

Country	Organizations
Australia	Clean Energy Council
	Clean Energy Investor Group
	Smart Energy Council
	The Australian Industry Group
Brazil	Brazilian Solar Photovoltaic Energy Association (ABSOLAR)
	Brazilian Association of Distributed Generation
Chile	The Canadian Chamber of Commerce in Chile
	The Chilean Association of Renewable Energies and Storage
China	China Chamber of Commerce for Import and Export of Machinery and Electronic Products (CCCME)
	China Photovoltaic Industry Association (CPIA)
	SEMI Standards
	Jiangsu Energy Storage Association (JSESA)
	East Energy Storage Association (EESA)
	Society of Entrepreneurs & Ecology (SEE)
	Women in Solar Energy (WISE)
Colombia	The Association of Renewable Energies Colombia (SER Colombia)
Costa Rica	The Costa Rican Solar Energy Association
France	ENERPLAN
	The Renewable Energies Syndicate
Italy	Future Electricity
	The Association of the Italian Solar PV Community
Japan	Asia Pacific Real Assets Association Limited (APREA)
	Japan Association of Asset Management (JAAM)
	Japan Builders Network (JBN)
	Japan Climate Initiative (JCI)

Country	Organizations
Japan	Japan Climate Leaders' Partnership (JCLP)
	Japan Electrical Manufacturers' Association (JEMA)
	Japan Photovoltaic Energy Association (JPEA)
	Principles for Responsible Investment (PRI) Signatory
	Renewable Energy Association for Sustainable Power Supply (REASP)
	Investment Trusts Association, Japan (JITA)
Mexico	The Mexican Solar Energy Association
	The Canadian Chamber of Commerce in Mexico
Middle East and Northern Africa	Middle East Solar Industry Association (MESIA)
Netherlands	Holland Solar
Peru	Peruvian Association of Renewable Energies (SPR)
Portugal	The Portuguese Renewable Energy Association
Puerto Rico	Solar and Energy Storage Association (SESA)
South Africa	South African Photovoltaic Industry Association (SAPVIA)
Spain	Spanish Photovoltaic Union
	Spanish Photovoltaic Union (UNEF)*
	Association of Renewable Energy (PPA)*
	Association of Storage (AEPIBAL)*
USA	American Clean Power
	Kentucky Solar Industries Association (KYSEIA)
	Mid-Atlantic Renewable Energy Coalition (MAREC)
	Solar Energy Industries Association (SEIA)
	Southern Renewable Energy Association (SREA)
	Texas Solar Power Association

*Newly joined in 2023

4 Responsible Supply Chain

Canadian Solar is committed to responsible procurement of materials in all parts of our business, from manufacturing to project development.

CSI Solar, our majority-owned subsidiary, is responsible for manufacturing solar modules and battery energy storage products. CSI Solar works with third-party suppliers to ensure a responsible, reliable, and sustainable supply of raw materials and components. These include solar silicon, ingots, wafers, cells, PV glass, aluminum, silver metallization paste, back sheets, and ethylene vinyl acetate encapsulants (EVA) for solar modules, as well as lithium iron phosphate battery cells for our battery energy storage products. CSI Solar is committed to expanding our in-house manufacturing capabilities for ingots, wafers, cells, modules, and battery storage products. This expansion is integral to increasing the control over our supply chain and our costs, ensuring product quality, and solidifying our industry-leading position in the solar and battery storage sectors.

Recurrent Energy, formerly Global Energy and a wholly owned subsidiary of Canadian Solar, develops utility-scale solar and battery energy storage projects worldwide. Capitalizing on our scale of operations, Recurrent Energy applies centralized procurement strategies to secure a stable, adequate, and cost-effective supply of essential equipment. This includes solar modules, inverters, trackers, mounting hardware, grid interconnection and power stability equipment, and other crucial components for our global development projects. These procurement strategies support a robust supply chain, optimize project performance, and enhance our competitiveness.

11 MW Utility Solar Plant, France

ESG Integration in Supply Chain Management Strategy

Our procurement management strategy utilizes a centralized approach, overseen at the group level and executed by individual divisions. Canadian Solar actively incorporates ESG considerations into our supply chain management. To ensure adherence to our high quality, cost, and ESG standards, we implement comprehensive supply chain-related policies and conduct rigorous supplier screenings. In addition, our supplier auditing program further aims to cultivate a sustainable, efficient, and robust supply chain that not only meets our company's development needs but also serves our stakeholders' interests.

Anti-Modern Slavery Initiatives

Canadian Solar does not tolerate forced labor or any form of modern slavery and is committed to ensuring that modern slavery does not take place anywhere in our business, including our supply chain. To achieve this goal, we have established anti-forced labor measures, including policy development, training, execution, and compliance, to prevent modern slavery in our operations and supply chain.

Policy Deveopment, Communication, Training, and Compliance

Canadian Solar has formed teams dedicated to developing anti-modern slavery policies and enforcing these policies and processes.

At the Company level:

- Internal Audit, led by the Global Director of Internal Audit
- Global Compliance, led by the Chief Compliance Officer
- Legal Department, led by the Group General Counsel and Legal Senior Director
- Human Resources, led by the Group Head of HR

- Anti-Modern Slavery Policy (link)
- Labor and Human Rights Policy (link)
- Supplier Code of Conduct (link)
- Code of Business Conduct and Ethics (link)
- Environmental, Health and Safety Policy (link)
- Conflict Minerals Policy (link)

Anti-Modern Slavery Task Force:

In October 2021, Canadian Solar established the Anti-Modern Slavery Task Force to fortify our group-wide initiatives against modern slavery, including forced labor. This task force is responsible for developing and disseminating anti-modern slavery policies and procedures. It also oversees the implementation of training programs and conducts due diligence to ensure the efficacy of our anti-slavery efforts. The task force is comprised of management personnel from several key areas: compliance, HR, legal, procurement, customer service, and safety, quality, and environment.

Anti-Modern Slavery Efforts in Our Own Operations:

All our global manufacturing entities are required to sign "Statement of Anti-Modern Slavery Risk Management" on an annual basis. As part of this process, our HR directors or managers are required to confirm that their respective manufacturing entities comply with all applicable laws and regulations and company policies related to forced labor, and they must explicitly affirm that their respective factories are not involved in any activities associated with forced labor. The statement was developed based on the key internationally recognized principles and guidance in this respect, including the Ten Principles of the UN Global Compact (UNGC) (link) and the International Labor Office Indicators of Forced Labor from which UNGC Principles are in part derived. Furthermore, we administer mandatory training on anti-modern slavery, both as part of our employee onboarding process and in annual training sessions. These programs aim to heighten our employees' awareness of anti-modern slavery initiatives, with a particular emphasis on combating forced labor.

Modern Slavery Risk Assessment and Contractual Assurance from Suppliers:

We extend our anti-modern slavery initiatives to encompass our supply chain. Prior to engaging with any new manufacturing supplier, our central procurement division conducts a modern slavery risk assessment. We also require our suppliers to provide contractual assurances, verifying that they are not involved in any form of modern slavery, which requires them to investigate their supply chain to ensure their suppliers do not engage in modern slavery.

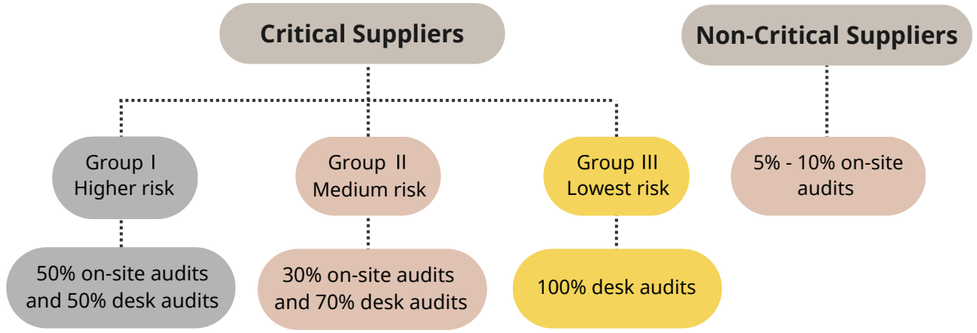
Supplier Code of Conduct

We require our suppliers to adhere to Canadian Solar's Supplier Code of Conduct (link, the "Code") to maintain a responsible supply chain. This Code transcends the basic requirement of prohibiting modern slavery, extending to broader issues such as human rights, environmental protection, health, safety, and business ethics. Our Code, primarily derived from the Responsible Business Alliance (RBA) Code of Conduct (link), serves as an integral part of our due diligence process for assessing new suppliers, who are required to adhere to it. Furthermore, we require our suppliers to ensure that their own suppliers to operate in compliance with the Code. In this way, we ensure that not only our direct suppliers but also our indirect suppliers - that is, our suppliers' suppliers - uphold the obligations set forth in the Code.

Supplier ESG Audits

To ensure our suppliers align with our ESG standards and effectively mitigate ESG risks within our supply chain, we actively oversee our suppliers through an ESG auditing program. This program incorporates both onsite and desk audits of our suppliers. Our supplier audits examine a range of areas, including quality control, human rights, environment, health, safety, business ethics, and other sustainability facets, all in accordance with our Code. Non-compliance or failure to meet Canadian Solar's standards will result in the termination of the business relationship, particularly if issued warnings are not adequately addressed. To support our suppliers, we provide training on compliance with the Code and consultations on enhancing their practices in line with ESG priorities.

We map our supplier base annually to identify critical suppliers, factoring in purchase expenditures and potential ESG risks associated with a supplier's industry sector, size, and type of work. Based on these criteria, we classify our critical suppliers into three groups, considering both our purchase spend and the supplier's ESG risks. We conduct onsite or desk audits for all our critical suppliers and a subset (5-10%) of our non-critical suppliers each year.



On-site and desktop ESG audits are conducted through supplier questionnaires supported by evidentiary documentation. Canadian Solar reviews the responses and associated documents, on-site or remotely.

The audits assess suppliers based on an array of criteria divided into "veto" and "scored" categories. The veto criteria are evaluated on a binary "yes or no" basis, wherein any negative response automatically disqualifies a supplier from conducting business with Canadian Solar. For instance, the potential presence of forced or child labor identified through our audit would immediately deem the supplier ineligible to partner with Canadian Solar.

The scored criteria necessitate that suppliers achieve a minimum score of 60 to qualify for collaboration with us. We issue warnings to those who fall short of this minimum requirement and provide consultations to help address the identified issues. The business relationship will be terminated with any suppliers who fail to meet our standards within a stipulated timeframe, ranging from 1 to 6 months following the consultation.

In 2022, we conducted 122 supplier ESG audits, including 17 on-site audits. After consultations and implementing corrective action plans (CAP), all suppliers passed the final ESG audits.

Conflict Minerals

Conflict minerals refer to certain mineral resources sourced that are produced in the Democratic Republic of the Congo and its neighboring countries. According to the U.S. Department of State, serious human rights abuses have been inflicted by local armed forces that mine and trade these minerals to finance their armed conflicts. To address this problem, the U.S. Securities and Exchange Commission (SEC) adopted a mandate by the Dodd-Frank Wall Street Reform and Consumer Protection Act (Section 1502), requiring companies listed on U.S. stock markets to disclose information about the usage of columbite-tantalite (coltan), cassiterite, gold, wolframite, and their derivatives, which are limited to tantalum, tin, and tungsten.

We are committed to keeping our supply chain free of these conflict minerals, as explained in **our Conflict Minerals Policy** (link). This is one of the key criteria for selecting new suppliers. All of our suppliers are required to sign the Declaration of Conflict-Free Minerals before contracting with us, especially suppliers of tin-containing products, as after reviewing all the materials used during the production of our products, we determined that tin was the only conflict mineral necessary for the functionality or production of the products that we manufacture or contract to manufacture from January 1, 2022, to December 31, 2022. We require our suppliers to describe the source of the tin used in their products and provide a confirmation statement to ensure that the tin used is not sourced from the Democratic Republic of the Congo or an adjoining country. We do not purchase raw ore or unrefined conflict minerals, and we make no purchases in the Democratic Republic of the Congo or adjoining countries.

After taking the aforementioned measures, we have no reason to believe that the tin we use may have originated in the Democratic Republic of the Congo or an adjoining country. As such, and as we procure the tin that we use directly from suppliers in China, we are confident that our production is free of conflict minerals. We file a Specialized Disclosure Report, or Form SD, with the U.S. SEC annually regarding conflict minerals. A copy of our filed Form SD can be accessed on SEC or our website (link).

5 Governance

Canadian Solar's board of directors ("Board") is responsible for managing or supervising the management of the business and affairs of the Company.

Our Board comprises eight directors,[12] of which five are independent non-executive directors. There are seven male and one female director, bringing a diversity of skills and industry knowledge. Together, this collective expertise is critical in supervising, and overseeing management performance, and thus ensures our business' success and creates long-term value for our stakeholders.

Each director is required to stand for election at Canadian Solar's Annual General Meeting (AGM). Our **Corporate Governance Guidelines** (link), serve as the guiding framework for the Board to exercise its responsibilities, ultimately serving the interests of the Company and our shareholders.

12 Karl E. Olsoni served as an independent director on the Company's Board between June 2020 to June 2023. Mr. Olsoni did not stand for re-election at the Company's 2023 Annual General Meeting that was held on June 28, 2023.

300MW solar plus 561MWh storage, Slate solar and battery storage plant, U.S.

Board Committees

To effectively fulfill its responsibilities, our Board has established five specialized committees. The Audit Committee, Compensation Committee, and Nominating and Corporate Governance Committee are chaired and staffed exclusively by independent board members. These committees convene periodically with the Company's senior management team and an external auditor, ensuring a thorough review of the Company's business performance and risk management practices.

Committee Name	Responsibilities
Sustainability Committee	The Sustainability Committee's responsibilities encompass reviewing sustainability risks and opportunities, inclusive of climate-related factors, as they pertain to our strategy and business development. Furthermore, the committee monitors progress, offers advice, and assists the Board with strategic measures geared toward the Company's long-term sustainability. It also oversees the implementation and progress of ESG plans. The Sustainability Committee convenes at least biannually to scrutinize ESG matters.
Audit Committee	The committee supervises the Company's accounting and financial reporting procedures, as well as the auditing of the Company's financial statements.
Compensation Committee	The committee conducts reviews and evaluations of the Company's compensation plans, policies, and programs, making revisions as necessary.
Nominating and Corporate Governance Committee	The committee identifies suitable candidates for the Board, selects nominees for director elections at the subsequent Annual Meeting of Shareholders, and identifies candidates to fill any Board vacancies. Additionally, it develops and proposes a set of corporate governance guidelines and principles for the Board's consideration, which are applicable to the Company. The committee oversees the evaluation of both the Board and Company management, while also monitoring compliance with the Company’s Code of Business Conduct and Ethics.
Technology Committee	The Committee reviews, provides guidance, and offers recommendations to both the Company's management and the Board on matters pertaining to the Company's technology strategy, initiatives, and investments, all in support of the Company's overarching strategy and performance.

Summary of Board Members and Duties

		Age	Board Tenure	Audit Committee	Compensation Committee	Nominating & Governance Committee	Technology Committee	Sustainability Committee	Independent/Non-Independent
	**Dr. Shawn (Xiaohua) Qu**	59	17				Member		Non-independent
	**Leslie Li Hsien Chang (Lead Independent Director)**	68	3			Member		Member	Independent
	**Dr. Harry E. Ruda***	64	12	Member	Member		Chair		Independent
	**Andrew (Luen Cheung) Wong**	65	9		Chair	Member			Independent
	**Lap Tat Arthur Wong***	63	4	Chair		Member			Independent
	**Lauren C. Templeton**	47	3		Member	Chair			Independent
	**Yan Zhuang**	59	3						Non-independent
	**Dr. Huifeng Chang**	57	3					Member	Non-independent
	Average	**60**	**7**						

*Mr. Lap Tat Arthur Wong qualifies as an "audit committee financial expert" as required by the SEC. Dr. Ruda is "financially literate" as required by the NASDAQ rules.
** Karl E. Olsoni did not stand for re-election at the Company's 2023 Annual General Meeting that was held on June 28, 2023. Mr. Olsoni served as an independent director on the Company's board between June 2020 to June 2023 and was the chair of the Sustainability Committee. With Mr. Olsoni's departure, the chair of the Sustainability Committee will be reelected in the board meeting to be held in August 2023.

Diversity of the Board of Directors

Canadian Solar's **Corporate Governance Guidelines** (link) and **Nominating and Corporate Governance Committee Charter** (link) clearly articulate our commitment to board diversity. We value diversity in terms of gender, age, nationality, culture, professional background, and industry experience, as we believe it fosters varied perspectives that can enhance the Board's effectiveness in overseeing the Company. During the nomination process, the Board considers diversity and evaluates each candidate within the context of the entire Board's composition.

We continuously make efforts to improve the diversity of our board of directors and strive to further improve diversity at the board level and meet the Nasdaq New Rule 5605(f) for Diverse Board Representation in the specified time frame, including based on gender, nationality, ethnicity, age, and expertise. The following is our Board Diversity Matrix, based on self-identified attributes:

Board Diversity Matrix (As of February 28, 2023)				
Country of Principal Executive Offices	Canada			
Foreign Private Issuer	Yes			
Disclosure Prohibited Under Home Country Law	No			
Total Number of Directors	9			
	Female	Male	Non-Binary	Did Not Disclose Gender
Part Ⅰ: Gender Identity				
Directors	1	7	0	1
Part Ⅱ: Demographic Background				
Underrepresented Individual in Home Country Jurisdiction	7			
LGBTQ+	0			
Do Not Disclosure Demographic Background	2			

Board Expertise and Training

Our Board boasts diverse professional backgrounds and industry experiences, collectively bolstering its capacity to oversee the company's overall performance. Our board members are proficient in many areas, including solar technology, strategy, global operations, corporate finance, auditing, accounting, corporate reporting, capital markets, investing, mergers and acquisitions, risk management, marketing management, and corporate branding. Please refer to our annual report on Form 20-F for more details.

To ensure that our Board has the right skill sets and knowledge to act in the best interests of our stakeholders, we conduct comprehensive training programs. These cover a broad spectrum of areas such as securities laws in the U.S., where the Company is listed, and Canada, where the Company is legally domiciled. Additional training includes directors' duties, solar and battery storage technologies, and instruction on piercing the corporate veil.

Board Meeting Attendance

During 2022, our board of directors convened eight Board meetings, twelve Nominating and Corporate Governance Committee meetings, eleven Audit Committee meetings, five Compensation Committee meetings, two Sustainability Committee meetings, and two Technology Committee meetings. Additionally, they passed 32 resolutions through unanimous written consent. Both Board and committee meetings achieved a perfect attendance rate of 100% in 2022, a testament to our board members' dedication and commitment to fulfilling their roles and responsibilities.

Mandate from the Board for Third Party Audit of our Operations and Supply Chain

In May 2022, our Board passed a resolution mandating a third-party assessment, at a reasonable cost, on the extent to which Canadian Solar's policies and procedures effectively protect against forced labor in its operations, supply chains, and business relationships. The assessment would draw upon international standards such as the UN Guiding Principles on Business and Human Rights, ILO Declaration on Fundamental Principles and Rights at Work, and ILO Forced Labor Convention, 1930 (No. 29).

In response, the Company engaged RBA (Responsible Business Alliance) to conduct a VAP audit or Validated Assessment Program at our module manufacturing facility in Thailand earlier in 2023. The VAP audit is an extensive on-site review carried out by an RBA-accredited auditing firm, verifying a company's compliance with the RBA Code of Conduct (link) through document reviews, facility tours, and employee interviews. This on-site audit covers labor practice (including no force labor), health and safety, environment, ethics, and management systems. The RBA audit is an industry gold standard in manufacturing facility on-site evaluations.

Canadian Solar's module factory in Thailand was recognized by RBA and earned a Silver-level recognition for the VAP audit, **fully in compliance with "Freely Chosen Employment" rules, in other words, no presence of forced labor.** Canadian Solar plans to conduct further third-party audits of our operations and supply chain in 2023.

Executive Management

Our Chief Sustainability Officer (CSO), Ms. Hanbing Zhang, is responsible for shaping and executing our sustainability strategy. She spearheads an ESG working group comprised of members from diverse facets of the Company, such as strategy, R&D, certifications, project development, EHS, HR, government policy, investor relations, and global marketing teams. The ESG working group receives guidance from external advisors on implementing ESG strategy and staying abreast with the latest standards for disclosing and reporting GHG emissions. The ESG team collaborates closely with the Company's management team to intertwine ESG strategies within the strategic decision-making process of the Company, including incorporating sustainability targets, like environmental metrics, into operational team KPIs. Our CSO communicates with the Board's Sustainability Committee, providing updates on the progress and initiatives tied to our sustainability targets.

Intersolar 2023 at Munich, Germany

Executive Management Team

		Title	Work Experience
	**Dr. Shawn (Xiaohua) Qu**	Chairman and CEO	• Founded Canadian Solar in 2001 with NASDAQ IPO in 2006 • Director and VP at Photowatt International S.A. • Research scientist at Ontario Hydro (Ontario Power Generation)
	**Yan Zhuang**	President, CSI Solar Co., Ltd.	• Head of Asia of Hands-on Mobile, Inc. • Asia Pacific regional director of marketing, planning, and consumer insight at Motorola Inc.
	**Dr. Huifeng Chang**	Senior VP and Chief Financial Officer	• Co-Head of Sales & Trading at CICC US in New York • CEO of CSOP Asset Management in Hong Kong • Vice President of Citigroup Equity Proprietary Investment in New York
	**Ismael Guerrero Arias**	Corporate VP and President of Recurrent Energy	• President, Head of Origination, and COO at TerraForm Global • Vice President of Global Projects at Canadian Solar • Director of Operations for Asia at the Global Sustainable Fund
	**Jianyi Zhang***	Senior VP, Chief Legal Officer, Chief Compliance Officer and Corporate Secretary	• Senior advisor to several Chinese law firms • Senior assistant general counsel at Walmart Stores, Inc. • Managing Partner at Troutman Sanders LLP (Hong Kong office)
	**Guangchun Zhang**	Senior VP, CSI Solar Co., Ltd.	• Vice President for R&D and Industrialization of Manufacturing Technology at Suntech Power Holdings • Centre for Photovoltaic Engineering at the University of New South Wales and Pacific Solar Pty. Limited
	**Hanbing Zhang**	Corporate VP and Chief Sustainability Officer, CSI Solar Co., Ltd.	• Global Head of Marketing at Canadian Solar • Founder and President of Women in Solar Energy (WISE)

*Mr. Jianyi Zhang retired on July 14, 2023 after working at Canadian Solar for 7 years. Mr. Zhang has been succeeded in his roles by Mr. Kah Locke Tham as Corporate Secretary, and Mr. Jeffrey Kalikow, as Interim Compliance Officer until a successor is appointed. Mr. Tham is currently also the Company's Global Corporate Controller, and Mr. Kalikow is the Company's wholly owned subsidiary Recurrent Energy's General Counsel. The Company has initiated an executive search process to evaluate candidates for the Chief Legal Officer's role.

Ethical Business Conduct

Canadian Solar is committed to upholding the highest standards of business ethics. Our Code of Business Conduct and Ethics is applicable to all directors, officers and employees of Canadian Solar and its subsidiary entities.

Presented below is a synopsis of our principal governance documents and guidelines:

Policy	Area of Focus
Code of Business Conduct and Ethics (link)	• Environment, health, and safety • Harassment and discrimination • Employment practices, including anti-discrimination, freedom of association, privacy, and collective bargaining • Conflict of interests • Confidential information • Competition and fair trading • Gifts and entertainment expenses
Whistleblower Policy (link)	• Provides a 24/7 reporting channel where internal and external stakeholders can report their concerns on financial reporting and disclosure, fraudulent activity, breaches of compliance policies, etc. to the Board • Protection from retaliation for whistleblowers • Anonymous reporting and confidentiality
Insider Trading Policy (link)	• Procedure for preventing insider trading
Related-Party Transactions (link)	• Policy and procedures on reporting, approval, and disclosure of related-party transactions
Anti-Corruption Policies	• Prohibition against giving bribes (link) • Prohibition against accepting bribes (link)

Policy	Area of Focus
Anti-Modern Slavery (link)	• Measures taken to ensure modern slavery does not occur anywhere in Canadian Solar's business, including through its supply chain
Labor and Human Rights Policy (link)	• Labor and human rights standards to which Canadian Solar's employees are entitled
Equal Employment Opportunity Policy (link)	• Canadian Solar's commitment to providing an equal opportunity and discrimination-free workplace
Diversity Policy (link)	• Emphasize our commitment to diversity at all levels, including its senior management and board of directors
EHS Policy (link)	• Canadian Solar's guiding principles and objectives for environmental preservation and providing a healthy and safe workplace for employees
Supplier Code of Conduct (link)	• Canadian Solar's standards on human rights, environmental protection, health, safety, and business ethics for our suppliers and their suppliers
Conflict Minerals Policy (link)	• Measures taken to ensure Canadian Solar's supply chain remains free of conflict minerals illegally produced in the Democratic Republic of the Congo and its neighbors

Business Ethics Awareness and Compliance Training

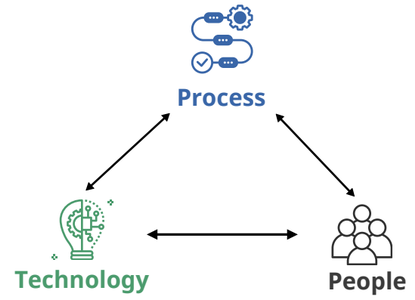
At Canadian Solar, we ensure that all our employees are thoroughly informed about, and trained on, our compliance policies, which are publicly available on our website (link). We conduct annual training sessions for existing employees and quarterly sessions for new employees. These sessions may encompass key definitions, responsibilities of Canadian Solar employees, supplier expectations, among other topics. As a part of our comprehensive training process, we may also incorporate assessments to gauge the successful completion of each training by the employees. Outlined below are instances of business ethics awareness and compliance training sessions provided to the employees at Canadian Solar:

Training/Result Review	Scope	Frequency
Business ethics training, including Foreign Corrupt Practices Act (FCPA)	All employees	Annual; at least quarterly for new employees
Anti-modern slavery training	All employees	Annual; at least quarterly for new employees
Data protection	All employees	Annual; at least quarterly for new employees
Compliance Declaration and Questionnaire, declaring conflict of interest and related party transactions, if any, and the acknowledgement and adherence to Canadian Solar's policies and procedures	All employees from Sales, Business Development and Procurement departments, and employees at managerial level or higher from other departments	Annual
Compliance test of compliance awareness and Canadian Solar's policies and procedures	All employees	Annual

Cyber Security

Cybersecurity is of utmost importance at Canadian Solar to safeguard the people, data, and other assets of the Company. Adopting a proactive and risk-based approach, we focus on technology investments and enhancements, personnel development, and process improvements. Our cybersecurity model is aligned with industry standards and frameworks, encompassing ISO27001, NIST 800-53, and ITIL (Information Technology Infrastructure Library). We are working to receive the ISO27001 certification by the end of 2024.

STRATEGIC FOCUS:
PEOPLE – PROCESS – TECHNOLOGY =



Our Corporate IT Group oversees all aspects of cyber security, including the development and implementation of information security strategy and policies, incident response procedures, breach notification policies and associated software policies, and the provision of information security measures training to employees.

In addition to complying with laws and regulations where we operate, the group is also responsible for the continuous improvement of our cyber security management system covering all our subsidiaries.

The group provides an update on the company's cyber security status to Canadian Solar's board annually.

Policies: Information Technology Security Strategy Policy, Information Technology Security Management Procedure, Information Technology Security Incidents Management Policy, Employee Handbook.

Training: We deliver cybersecurity training to key IT staff, which includes sessions on "Secure Service Edge" technology. Additionally, we offer cybersecurity awareness training to our broader employee base, incorporating exercises such as email phishing simulations.

Performance evaluation: We gauge our cybersecurity performance using various KPIs and performance metrics incorporated into routine reporting. Cybersecurity considerations are integrated into the KPIs of our IT team.

All Canadian Solar employees are required to comply with our information security policies. Non-compliance will result in disciplinary and potential legal action, including termination of employment.

6 About this Report

Canadian Solar's Sustainability Report was developed in accordance with the recommendations of the Task Force on Climate-Related Disclosures (TCFD), the Sustainability Accounting Standards Board (SASB) framework under Solar Technology & Project Developers standards, and is in accordance with the Sustainability Reporting Standards (2021 version) released by the Global Reporting Initiative (GRI).

This report has been created to underscore our ESG strategy and disclosures, reflecting feedback gathered from the investment community and other stakeholders. Unless otherwise noted, the reporting period covered in this document spans from January 1, 2022, to December 31, 2022.

We did not seek third-party verification for this report. However, the data collection and calculation of our greenhouse gas emissions inventories of scope 1, scope 2 and scope 3 sources were based on the methodology advised by SGS, a qualified, well-known, and international inspection, verification, testing, and certification organization.

Acknowledgements: This report was produced as a collective effort across various departments in Canadian Solar. I would like to express gratitude to every individual who contributed to the production of this report, namely Mary Ma, Holly Zhang, Isabel Zhang, Yuan Zhou, Angela Zhang, Heidi Peng, Andrea Zhu, Jimmy Wang, Katherine Wang, Giulia Tamanini, Beth McCormack, Susan Chen, Huizhen Gao, Raffaella Balzaretti, Pauline Wong, Emma Lenze, Pauline Levean, Giulia Bettazzi, Cari Collins, Dylan Marx, Dan Barnard, Stella Su, Shaoting Wan, Xiaobin Zhang, Brian Bayne, Bernie Jungreithmayr, and David Pasquale. I would also like to thank the members of the Board, including Sustainability Committee members, for their constructive guidance.

Hanbing Zhang
Chief Sustainability Officer

To provide feedback on our sustainability report, please contact

ESG@canadiansolar.com

300MW solar plus 561MWh storage, Slate solar and battery storage plant, U.S.

Materiality Assessment and Stakeholder Engagement

Canadian Solar actively engages with our internal and external stakeholders to pinpoint and prioritize the environmental, social, and governance (ESG) topics of paramount importance to our business and stakeholders. Our materiality assessment incorporated insights from an array of internal stakeholders – including our board of directors, executive management, and employees throughout our global operations – and external stakeholders, such as our customers, suppliers, investors, creditors, local communities, industry associations, NGOs, media outlets, and the scientific community.

This sustainability report outlines key ESG topics and our strategies and actions based on our materiality analysis, all of which have undergone review by our Chief Sustainability Officer and the Sustainability Committee. The results of this comprehensive assessment enable us to identify opportunities, mitigate risks, and better integrate ESG principles into our business fabric.

The right chart describes Canadian Solar's approach to stakeholder engagement:

Stakeholders	Engagement Methods	Engagement Frequency	Focus Areas
Employees	Trainings, meetings, emails, surveys, townhalls	Ongoing	Company performance, environmental impact and social responsibility
Customers	Meetings, emails, conferences, trade shows, technical workshops	Ongoing	Company performance, product quality, social responsibility, supplier assessments
Suppliers	Meetings, emails, conferences, trade shows, technical workshops, surveys, audits	Ongoing	Company performance, product quality, procurement practices
Investors/Shareholders	Meetings, earnings calls, emails, conferences, roadshows	Ongoing	Company performance, ESG performance
Creditors	Meetings, emails, conferences, trade shows	Ongoing	Company performance, credit quality, key risks, ESG performance
Rating Agencies	Meetings, emails, conferences	Ongoing	Company performance, credit quality, key risks, ESG performance
Media	Interviews, emails, meetings, trade shows	Ongoing	Company performance, ESG performance
Local Communities	Community presentations and meetings, local tours, training programs	Ongoing	Environmental and ecological impacts, job creation, occupational health & safety
NGOs	External surveys, emails, partnerships, meetings, workshops	Ongoing	Environmental, ecological, and social impacts
Scientific Community	Conferences, emails, standards development meetings, technical workshops	Ongoing	Product quality, environmental impacts, social responsibility, job creation, supplier assessment

APPENDIX: Alignment with Standardized Reporting Frameworks

TCFD

TCFD Recommended Disclosures	Response
Governance	
A) Describe the board's oversight of climate-related risks and opportunities	2022 Sustainability Report, 1) Environmental Metrics and Targets, Climate-Related Risks and Opportunities, p.31-32 2) Governance, Board Committees, p.55
B) Describe management's role in assessing and managing risks and opportunities.	2022 Sustainability Report, Governance, Executive Management, p.58-59
Strategy	
A) Describe the climate-related risks and opportunities the company has identified over the short, medium, and long term.	2022 Sustainability Report, Environmental Metrics and Targets, Climate-Related Risks and Opportunities, p.31-32
B) Describe the impact of climate-related risks and opportunities on the company's businesses, strategy, and financial planning.	2022 Sustainability Report, Environmental Metrics and Targets, Climate-Related Risks and Opportunities, p.31-32
C) Describe the resilience of the company's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	2022 Sustainability Report, Environmental Metrics and Targets, Climate-Related Risks and Opportunities, p.31-32

TCFD Recommended Disclosures	Response
Risk Management	
A) Describe the company's processes for identifying and assessing climate-related risks.	2022 Sustainability Report, 1) Environmental Metrics and Targets, Climate-Related Risks and Opportunities, p.31-32 2) Governance, Executive Management, p.58-59
B) Describe the company's processes for managing climate-related risks.	2022 Sustainability Report, 1) Environmental Metrics and Targets, Climate-Related Risks and Opportunities, p.31-32 2) Governance, Executive Management, p.58-59
C) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the company's overall risk management.	2022 Sustainability Report, Governance 1) Board Committees, p.55 2) Executive Management, p.58-59
Metrics and Targets	
A) Disclose the metrics used by the company to assess climate-related risks and opportunities in line with its strategy and risk management process.	2022 Sustainability Report, Environmental Metrics and Targets, p.12-30
B) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	2022 Sustainability Report, Environmental Metrics and Targets, Greenhouse Gas Emissions, p.15-16
C) Describe the targets used by the company to manage climate-related risks and opportunities and performance against targets.	1) 2022 Sustainability Report, Environmental Metrics and Targets, p.12-26 2) Aim to achieve powering our global operations with 100% renewable energy by 2030

SASB Content Index

Topic	Accounting Metric	Category	Unit of Measure	Code	Response
Energy Management in Manufacturing	(1) Total energy consumed	Quantitative	Gigajoules (GJ)	RR-ST-130a.1	6,225,779
	(2) Percentage grid electricity		Percentage (%)		93%
	(3) Percentage renewable		Percentage (%)		2.1 (only including solar energy generation on site for self-consumption). The percentage would be 29% if including renewable electricity from the grid
Water Management in Manufacturing	(1) Total water withdrawn	Quantitative	Thousand cubic meters (m^3)		8,550
	(1) Total water consumed		Thousand cubic meters (m^3)		2,170
	(2) Total water withdrawn, percentage of each in regions with High or Extremely High Baseline Water Stress		Percentage (%)		26%
	(2) Total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress		Percentage (%)		28%
	Description of water management risks and discussion of strategies and practices to mitigate those risks	Discussion and Analysis	n/a	RR-ST-140a.2	2022 Sustainability Report, Environmental Metrics and Targets, Water Risk Management Strategy, p.24
Hazardous Waste Management	Amount of hazardous waste generated	Quantitative	Metric tons (t)	RR-ST-150a.1	1,800
	Hazardous waste percentage recycled	Quantitative	Percentage (%)	RR-ST-150a.1	68%
	Number and the aggregate quantity of reportable spills		Number		0
	Spills quantity recovered		Kilograms (kg)		0
Ecological Impacts of Project Development	Number and duration of project delays related to ecological impacts	Quantitative	Number, Days	RR-ST-160a.1	None
	Description of efforts in solar energy system project development to address community and ecological impacts	Discussion and Analysis	n/a	RR-ST-160a.2	2022 Sustainability Report, Environmental Metrics, Environmental Stewardship in Project Development and Operations and Maintenance, p.28-30

Topic	Accounting Metric	Category	Unit of Measure	Code	Response
Management of Energy Infrastructure Integration & Related Regulations	Description of risks associated with integration of solar energy into existing energy infrastructure and discussion of efforts to manage those risks	Discussion and Analysis	n/a	RR-ST-410a.1	2022 Sustainability Report, Social Responsibility, Making the Difference through Community Commitment, p.45-48
	Description of risks and opportunities associated with energy policy and its impact on the integration of solar energy into existing energy infrastructure	Discussion and Analysis	n/a	RR-ST-410a.2	2022 Sustainability Report, Social Responsibility, Making the Difference through Community Commitment, p.45-48
Product End-of-life Management	Percentage of products sold that are recyclable or reusable	Quantitative	Percentage (%)	RR-ST-410b.1	2022 Sustainability Report, Environmental Metrics and Targets, Product End-of-Life Management and Recycling, p.26
	Weight of end-of-life material recovered, percentage recycled	Quantitative	Metric tons (t), Percentage (%)	RR-ST-410b.2	2022 Sustainability Report, Environmental Metrics and Targets, Product End-of-Life Management and Recycling, p.26
	Percentage of products by revenue that contain IEC 62474 declarable substances, arsenic compounds, antimony compounds, or beryllium compounds	Quantitative	Percentage (%)	RR-ST-410b.3	Our modules are free of IEC 62474 declarable substances except for lead, which is a material used for soldering crystalline PV modules. Lead accounts for 0.03% of a solar module's weight. One of our top R&D and sustainability priorities over the coming years is to reduce lead content in our modules. IEC 62474 is an international standard for material declarations for the electrical and electronics industry and its suppliers. It provides requirements for material declarations including a Declarable Substance List and a material declaration procedure.
	Description of approach and strategies to design products for high-value recycling	Quantitative	n/a	RR-ST-410b.4	2022 Sustainability Report, Environmental Metrics and Targets, Product End-of-Life Management and Recycling, p.26

Topic	Accounting Metric	Category	Unit of Measure	Code	Response
Materials Sourcing	Description of the management of risks associated with the use of critical materials	Discussion and Analysis	n/a	RR-ST-440a.1	Not applicable, as the company does not use the critical materials defined by SASB
	Description of the management of environmental risks associated with the polysilicon supply chain	Discussion and Analysis	n/a	RR-ST-440a.2	Polysilicon manufacturing processes involve the use of volatile or dangerous chemicals and waste. Those chemicals are required to be handled with proper training provided. Wastewater and waste gas are processed through various treatments so that they meet the respective discharge standards. Most solid waste generated during the manufacturing process can be reused and does not contain hazardous materials. Pollution control systems are set in place to reduce, treat, and recycle the waste generated in the manufacturing process. Furthermore, laws and regulations are in place to govern water, air, solid waste, and noise pollution, as well as hazardous chemicals, among others, in places where the upstream polysilicon suppliers operate. Polysilicon suppliers are required to obtain all the necessary environmental permits to conduct business and are subject to regulation and periodic monitoring by local environmental protection and work safety authorities. Where there are environmental non-compliance incidents, the polysilicon suppliers are subject to substantial fines and potentially suspension of production or cease operations.

Global Reporting Initiative Metrics

Statement of use	Canadian Solar has reported the information cited in this GRI content index for the period January to December 2022, unless otherwise specified, in accordance to the GRI standards.	
GRI 1 used	GRI 1: Foundation 2021	
Applicable GRI Sector Standard(s)	Not applicable	
GRI 2: General Disclosures		
2-1	Report its legal name	Canadian Solar Inc.
2-1	Report its nature of ownership and legal form	Investor-owned corporation, NASDAQ: CSIQ
2-1	Report the location of its headquarters	Guelph, Ontario, Canada
2-1	Report its countries of operation	2022 Sustainability Report, About Canadian Solar, p.7
2-2	Entities included in the organization's sustainability reporting	2022 Sustainability Report, About Canadian Solar, p.7
2-3	Reporting period, frequency and contact point	Reporting period: January 1 to December 31, 2022, unless otherwise stated Frequency: annual Contact point: ESG@canadiansolar.com
2-4	Restatements of information	2022 Sustainability Report, Environmental Metrics and Targets, Water Pollutants and Effluents, p.25 Fluoride for 2021 should be 21.1 metric tons, instead of 12.9 metric tons as stated in last year's report.
2-5	External assurance	2022 Sustainability Report, About this Report, p.62
2-6	Activities, value chain and other business relationships	2022 Sustainability Report, 1) About Canadian Solar, p.6-7 2) Environmental Metrics and Targets, Environmental Stewardship in Project Development and Operations and Maintenance, p.28 3) Responsible Supply Chain, Supplier ESG Audits, p.52 2022 Annual Report, Results of Operations, p.85-86
2-7	Employees	2022 Sustainability Report, Social Responsibility, Working at Canadian Solar, p.35
2-8	Workers who are not employees	2022 Sustainability Report, Social Responsibility, Working at Canadian Solar, p.35
2-9	Governance structure and composition	2022 Sustainability Report, Governance, 1) Board Committees, p.55 2) Board Members and Duties, p.56
2-10	Nomination and selection of the highest governance body	2022 Sustainability Report, Governance, Board Committees, p.55-56
2-11	Chair of the highest governance body	2022 Sustainability Report, Governance, Board Committees, p.55-56
2-12	Role of the highest governance body in overseeing the management of impacts	2022 Sustainability Report, Governance, Board Committees, p.55-56
2-13	Delegation of responsibility for managing impacts	2022 Sustainability Report, Governance, 1) Board Committees, p.55-56 2) Executive Management, p.58
2-14	Role of the highest governance body in sustainability reporting	2022 Sustainability Report, Governance, Board Committees, p.55
2-15	Conflicts of interest	2022 Sustainability Report, Governance, Ethical Business Conduct, p.60 Code of business conduct and ethics

GRI 2: General Disclosures		
2-16	Communication of critical concerns	2022 Sustainability Report, 1) Social Responsibility, Grievance Procedure and Zero Tolerance for Retaliation, p.40, 2) Whistleblower Policy
2-17	Collective knowledge of the highest governance body	2022 Sustainability Report, Governance, 1) Board Committees, p.55-56 2) Board Expertise and Training, p.57
2-18	Evaluation of the performance of the highest governance body	2022 Sustainability Report, Governance, Board Committees, p.55
2-22	Statement on sustainable development strategy	2022 Sustainability Report, 1) Message from the Chief Executive and Chief Sustainability Officers, p.3 2) Highlights, p.4-5 3) Governance, Executive Management, p.58-59
2-23	Policy commitments	2022 Sustainability Report, 1) About Canadian Solar, Sustainability at Canadian Solar, p.8 2) Governance, Ethical Business Conduct, p.60-61
2-24	Embedding policy commitments	2022 Sustainability Report, 1) About Canadian Solar, Sustainability at Canadian Solar, p.8 2) Social Responsibility, Making the Difference through Community Commitment, p.45-48 3) Responsible Supply Chain, Supplier Code of Conduct, p.52 Supplier Code of Conduct 4) Governance, Ethical Business Conduct, p.60
2-25	Processes to remediate negative impacts	2022 Sustainability Report, Social Responsibility, 1) Grievance Procedure and Zero Tolerance for Retaliation, p.40 2) Whistleblower Policy
2-26	Mechanisms for seeking advice and raising concerns	2022 Sustainability Report, Social Responsibility, 1) Grievance Procedure and Zero Tolerance for Retaliation, p.40 2) Whistleblower Policy
2-27	Compliance with laws and regulations	We comply with laws and regulations in every jurisdiction where we operate.
2-28	Membership associations	2022 Sustainability Report, Social Responsibility, Non-Governmental Organizations and Memberships, p.49
2-29	Approach to stakeholder engagement	2022 Sustainability Report, About this Report, Materiality Assessment and Stakeholder Engagement, p.63
2-30	Collective bargaining agreements	2022 Sustainability Report, Social Responsibility, Freedom of Association and Collective Bargaining, p.40
GRI 3: Material Topics		
3-1	Process to determine material topics	2022 Sustainability Report, About this Report, Materiality Assessment and Stakeholder Engagement, p.63
3-2	List of material topics	2022 Sustainability Report, About this Report, Materiality Assessment and Stakeholder Engagement, p.63
3-3	Management of material topics	2022 Sustainability Report, About this Report, Materiality Assessment and Stakeholder Engagement, p.63
GRI 201: Economic Performance		
201-1	Direct economic value generated and distributed	2022 Annual Report, Results of Operations, p.85-87
201-2	Financial implications and other risks and opportunities due to climate change	2022 Sustainability Report, Environmental Metrics and Targets, Climate-Related Opportunities and Risks, p.31-32

GRI 203: Indirect Economic Impacts		
203-1	Infrastructure investments and services supported	2022 Annual Report, p.55-58, 80-83; p.F4, F-13, F-15, F18-20, F63
GRI 205: Anti-corruption		
205-1	Operations assessed for risks related to corruption	2022 Sustainability Report, Governance, Ethical Business Conduct, p.60 Prohibition against giving bribes Prohibition against accepting bribes
205-2	Communication and training about anti-corruption policies and procedures	2022 Sustainability Report, Governance, 1) Ethical Business Conduct, p.60 2) Business Ethics Awareness and Compliance Trainings, p.61 Prohibition against giving bribes Prohibition against accepting bribes
205-3	Confirmed incidents of corruption and actions taken	None
GRI 206: Anti-competitive Behavior		
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	None
GRI 302: Energy		
302-1	Energy consumption within the organization	Unit: Gigajoules (GJ) Total energy consumption: 6,225,779 Gas: 178,836 Diesel: 3,890 Gasoline: 2,580 Steam: 91,820 Grid electricity: 5,816,234 Solar PV electricity: 132,419
302-2	Energy consumption outside of the organization	Environmental Metrics and Targets, Greenhouse Gas Emissions, Scope 3 emissions, p.16
302-3	Energy intensity	Unit: MWh/MW Ingot production: 75.87 Wafer production: 13.04 Cell production: 64.73 Module production: 17.61
302-4	Reduction of energy consumption	2022 Sustainability Report, Environmental Metrics and Targets, Energy Intensity, p.20-22
302-5	Reductions in energy requirements of products and services	2022 Sustainability Report, Environmental Metrics and Targets, Module Carbon Footprint Improvement, p.19
GRI 303: Water and Effluents		
303-1	Interactions with water as a shared resource	2022 Sustainability Report, Environmental Metrics and Targets, Water Intensity, p.23-25
303-2	Management of water discharge-related impacts	2022 Sustainability Report, Environmental Metrics and Targets, Water Intensity, p.23-25
303-3	Water withdrawal	8,550 thousand cubic meters (m^3)
303-4	Water discharge	6,380 thousand cubic meters (m^3)
303-5	Water consumption	2,170 thousand cubic meters (m^3)
GRI 304: Biodiversity		
304-2	Significant impacts of activities, products and services on biodiversity	2022 Sustainability Report, Environmental Metrics and Targets, Environmental Stewardship in Project Development and Operations and Maintenance, p.28-30
304-3	Habitats protected or restored	2022 Sustainability Report, Environmental Metrics and Targets, Environmental Stewardship in Project Development and Operations and Maintenance, p.28-30

GRI 305: Emissions		
305-1	Direct (Scope 1) GHG emissions	75,647 metric tons of CO_2 equivalent (tCO_2eq)
305-2	Energy indirect (Scope 2) GHG emissions	1,213,638 metric tons of CO_2 equivalent (tCO_2eq)
305-3	Other indirect (Scope 3) GHG emissions	256,177 metric tons of CO_2 equivalent (tCO_2eq)
305-4	GHG emissions intensity	Unit: tCO_2eq/MW Ingot production: 65.6 Wafer production:8.2 Cell production: 38.6 Module production:11.0
305-5	Reduction of GHG emissions	2022 Sustainability Report, Environmental Metrics and Targets, Greenhouse Gas Emissions, p.15-19
305-7	Nitrogen oxides (NO_x), sulfur oxides (SO_x), and other significant air emissions	Unit: metric tons (t) Nitrogen oxides (NO_x): 18.0 Sulfur oxides (SO_x): 0.1 Fine dust (PM10): 15.5 Hazardous air pollutants (HAP): 12.4 Volatile organic compounds (VOC): 30.6 Persistent organic pollutants (POP): 0 Other standard air emissions: 39.2
GRI 306: Waste		
306-1	Waste generation and significant waste-related impacts	2022 Sustainability Report, 1) About Canadian Solar, Understanding the Environmental Impact of Manufacturing, p.13 2) Environmental Metrics and Targets, Waste Intensity, p.25-26 Climate-Related Risks and Opportunities, p.31-32
306-2	Management of significant waste-related impacts	2022 Sustainability Report, 1) About Canadian Solar, Approach to Environment, Health, and Safety (EHS), p.9 2) Environmental Metrics and Targets, Waste Intensity, p.25-26 Climate-Related Risks and Opportunities, p. 31-32
306-3	Waste generated	Unit: Metric kilotons (kt) Disposed hazardous waste: 0.6 Recycled or reused hazardous waste: 1.2 Disposed non-hazardous waste: 24.1 Recycled or reused non-hazardous: 104.0
306-4	Waste diverted from disposal	2022 Sustainability Report, About Canadian Solar, Environmental Metrics and Targets, Waste Intensity, p.25-26
306-5	Waste directed to disposal	2022 Sustainability Report, About Canadian Solar, Environmental Metrics and Targets, Waste Intensity, p.25-26
GRI 308: Supplier Environmental Assessment		
308-1	New suppliers that were screened using environmental criteria	2022 Sustainability Report, Responsible Supply Chain, Supplier ESG Audits, p.52
308-2	Negative environmental impacts in the supply chain and actions taken	2022 Sustainability Report, Responsible Supply Chain, Supplier ESG Audits, p.52
GRI 401: Employment		
401-3	Parental leave	2022 Sustainability Report, Social Responsibility, Work-life-balance, p.40
GRI 403: Occupational Health and Safety		
403-1	Occupational health and safety management system	2022 Sustainability Report, Social Responsibility, Occupational Health and Safety, p.41
403-2	Hazard identification, risk assessment, and incident investigation	2022 Sustainability Report, Social Responsibility, Hazardous Materials and Environmental Management, p.42
403-3	Occupational health services	2022 Sustainability Report, Social Responsibility, Occupational Health and Safety, p.41
403-4	Worker participation, consultation, and communication on occupational health and safety	2022 Sustainability Report, Social Responsibility, Occupational Health and Safety, p.41

403-5	Worker training on occupational health and safety	2022 Sustainability Report, Social Responsibility, Occupational Health and Safety, p.41
403-6	Promotion of worker health	2022 Sustainability Report, Social Responsibility, Occupational Health and Safety, p.41
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	2022 Sustainability Report, Social Responsibility, Occupational Health and Safety, p.41
403-8	Workers covered by an occupational health and safety management system	2022 Sustainability Report, Social Responsibility, Occupational Health and Safety, p.41
403-9	Work-related injuries	2022 Sustainability Report, Social Responsibility, Occupational Health and Safety, p.41
403-10	Work-related ill health	2022 Sustainability Report, Social Responsibility, Hazardous Materials and Environmental Management, p.42
GRI 404: Training and Education		
404-1	Average hours of training per year per employee	42.6 hours per employee for 2022 2022 Sustainability Report, Social Responsibility, On-the-Job Training, p.39
404-2	Programs for upgrading employee skills and transition assistance programs	2022 Sustainability Report, Social Responsibility, Talent Strategy, Training and Development, p.38-40
404-3	Percentage of employees receiving regular performance and career development reviews	100% of full-time employees

GRI 405: Diversity and Equal Opportunity		
405-1	Diversity of governance bodies and employees	2022 Sustainability Report, 1) Governance, Diversity of the Board of Directors, p.57 2) Social Responsibility, Equity, Diversity, and Inclusion, p.35-37
GRI 406: Non-discrimination		
406-1	Incidents of discrimination and corrective actions taken	None
GRI 407: Freedom of Association and Collective Bargaining		
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	2022 Sustainability Report, 1) Social Responsibility, Freedom of Association and Collective Bargaining, p.40 2) Responsible Supply Chain, Supplier ESG Audits, p.52
GRI 408: Child Labor		
408-1	Operations and suppliers at significant risk for incidents of child labor	None
GRI 409: Forced or Compulsory Labor		
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	None, we have been taking action to prevent this. 2022 Sustainability Report, Responsible Supply Chain, 1) Anti-Modern Slavery Initiatives, p.51 2) Supplier ESG Audits, p.52
GRI 411: Rights of Indigenous Peoples		
411-1	Incidents of violations involving rights of indigenous peoples	None

GRI 413: Local Communities		
413-1	Operations with local community engagement, impact assessments, and development programs	2022 Sustainability Report, 1) Environmental Metrics, Environmental Stewardship in Project Development and Operations and Maintenance, p.28-30 2) Social Responsibility, Making the Difference through Community Commitment, p.45-48
413-2	Operations with significant actual and potential negative impacts on local communities	None
GRI 414: Supplier Social Assessment		
414-1	New suppliers that were screened using social criteria	2022 Sustainability Report, Responsible Supply Chain, p.50-53
414-2	Negative social impacts in the supply chain and actions taken	2022 Sustainability Report, Responsible Supply Chain, p.50-53
GRI 416: Customer Health and Safety		
416-1	Assessment of the health and safety impacts of product and service categories	2022 Sustainability Report, 1) About Canadian Solar, Approach to Environment, Health, and Safety (EHS), p.9

Canadian Solar Inc.
545 Speedvale Avenue West
Guelph, Ontario, N1K 1E6

www.canadiansolar.com
ESG@canadiansolar.com