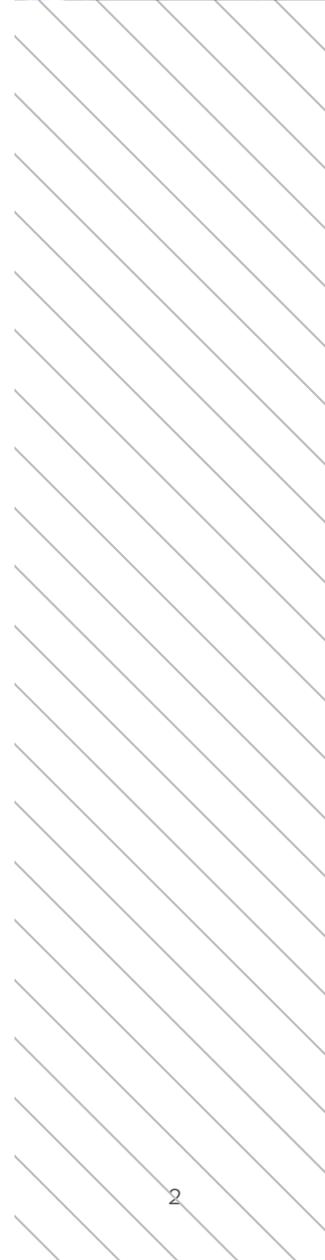


# SUSTAINABILITY REPORT 2022.



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# Note Regarding Forward-Looking Statements.

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All financial numbers in this report are based on U.S. Generally Accepted Accounting Principles. This report contains forward-looking statements within the meaning of the United States federal securities laws. These forward-looking statements are often characterized by the use of words such as “estimate,” “expect,” “anticipate,” “project,” “plan,” “intend,” “seek,” “believe,” “forecast,” “foresee,” “likely,” “may,” “should,” “goal,” “target,” “might,” “will,” “could,” “predict,” “continue” and the negative or plural of these words and other comparable terminology. Forward-looking statements are only predictions based on our current expectations and our projections about future events and therefore speak only as of the date of this report. You should not place undue reliance on these forward-looking statements. We undertake no obligation to update any of these forward-looking statements for any reason, whether as a result of new information, future developments or otherwise. These forward-looking statements involve known and unknown risks, uncertainties, and other factors that may cause our actual results, levels of activity, performance, or achievements to differ materially from those expressed or implied by these statements. These factors include, but are not limited to, the matters discussed under the captions “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” of our most recent Annual Report on Form 10-K and our subsequently filed Quarterly Reports on Form 10-Q, as supplemented by our other filings with the Securities and Exchange Commission.

# Message From the CEO.

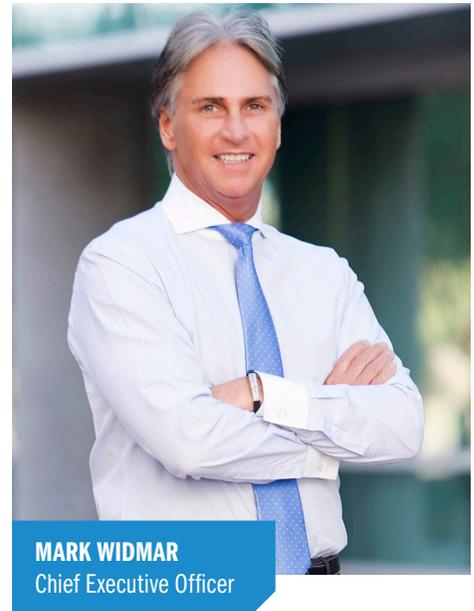
**As the fight against climate change accelerates and companies and governments commit to going Net Zero to limit global warming to 1.5 degrees Celsius, the need for a responsible approach to solar manufacturing and deployment has never been more urgent.**

It is a misconception that policymakers have to choose between fighting climate change and nurturing responsible, lower-carbon solar supply chains. It is also a misconception that responsible solar and competitiveness are not compatible with each other. The contents of this report refute the idea of “solar-at-any-cost.” By putting Responsible Solar at the heart of our business and investing in innovation and scale, First Solar is an example of how solar can be competitive without compromising on principles and purpose. First Solar is also an example of how solar technologies can be sustainably scaled without people and the planet paying a high price.

In the context of the fight against climate change, it is important to recognize that not all solar panels are created equal - how and where they are manufactured determines how many greenhouse gas emissions they will be able to avoid and displace. Thin film CdTe solar modules manufactured in the U.S. have a carbon footprint that is 2.5 times lower than conventional crystalline silicon modules manufactured in China. According to a recent study by the U.S. National Renewable Energy Laboratory, continuing to rely on silicon solar modules produced in coal-intensive grids, such as those in China, could consume as much as 14% of the remaining carbon budget that can be emitted before exceeding the 1.5 degrees Celsius limit.

The choice of solar technologies that will power the clean energy transition directly influences whether the transition is just and sustainable.

However, ensuring a just and sustainable clean energy transition requires collective action to minimize the environmental life cycle impacts and embodied carbon of solar, to invest in high-



**MARK WIDMAR**  
Chief Executive Officer

value recycling solutions which maximize resource recovery, and to respect human rights and reject the use of forced labor. A transition that fails to address these environmental and social impacts risks not only being seen as unjust, it also undermines the solar industry’s social license.

Our commitment to ‘Responsible Solar’ is underpinned by the belief that solar should never come at the price of people or the planet and drives our company’s environmental, social, governance (ESG) strategy and differentiation. Our approach to Responsible Solar is interwoven into every aspect of our business and product life cycle- from raw material sourcing to end-of-life recycling.

Since allegations of forced labor in the Chinese solar supply chain emerged two years ago, customers increasingly value our comprehensive approach to responsible sourcing and supply chain due diligence- from our supplier screening process to our ethics hotline. Our integrated manufacturing process and tightly controlled supply chain helps eliminate risks associated with outsourcing and the multiple supply tiers of conventional crystalline silicon solar manufacturing. Through our Responsible Business Alliance (RBA) membership, we are committed to leveraging credible third-party social auditing frameworks to verify conformance to fair labor practices, human rights and ethics across our operations and supply chain. Earlier this year, we completed our first RBA Validated Assessment Program (VAP) audit at our manufacturing facilities in Ohio, achieving platinum status- the highest possible rating- and providing further validation to our customers that they are working with a responsible partner.



We continue to set the industry benchmark for environmentally leading products with our Series 6 and Series 6 *Plus* modules being the first and only solar modules included in EPEAT, a globally recognized and independently validated ecolabel for sustainable electronics. We have a unique and long-standing leadership position in solar photovoltaic (PV) recycling as the only solar manufacturer with global in-house module recycling capabilities. We continue to invest in PV recycling technology improvements to increase recycling efficiency and drive down recycling prices for our customers. In the coming months, we plan to launch our fourth generation recycling technology which will enable higher leaching efficiency with reduced chemical consumption.

In 2021, we made progress on global diversity and inclusion (D&I) across the company with 4% more women in management compared to 2020. We are proud to be recognized as a “3+ company” by 50/50 Women on Boards for having at least three women serve on our Board. Today, First Solar’s Board of Directors is 33% diverse and each Board committee has at least one diverse representative. As part of our commitment to increasing transparency around diversity and inclusion at First Solar, we are publicly disclosing our Employer Information Report (EEO-1) data for the first time. At First Solar, we view D&I as a transformation, rather than a program or an initiative, and we are committed to making progress year over year in our journey to lead the world’s sustainable energy future and enable a transition that is both just and sustainable.

**Mark Widmar**  
*Chief Executive Officer*

# 2021 Highlights.

**7.9GW**

Produced



**13%**

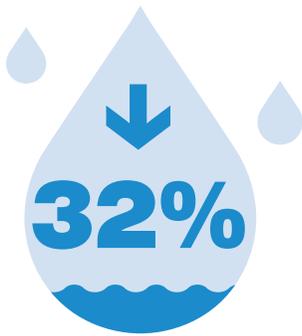
Lower GHG Emissions Intensity



**↓ 8%**



Lower Manufacturing Energy Intensity



Lower Manufacturing Water Intensity

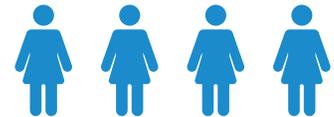
**↓ 9%**

Lower Manufacturing Waste Intensity



**+ 4%**

Women In Management



**1st**

EPEAT-Rated PV Products



**Prime**

ISS ESG Rating



**AA**

MSCI ESG RATING





# About First Solar.

**First Solar** is a leading American solar technology company and global provider of responsibly-produced eco-efficient solar modules advancing the fight against climate change. We are unique among the world's ten largest solar manufacturers for being the only US-headquartered company and for not using a crystalline silicon (c-Si) semiconductor. Developed at R&D labs in California and Ohio, First Solar's advanced thin film photovoltaic (PV) modules represent the next generation of solar technologies, providing a competitive, high-performance, lower-carbon alternative to conventional c-Si PV panels. From raw material sourcing and manufacturing through end-of-life module recycling, First Solar's approach to technology embodies sustainability and a responsibility towards people and the planet.



First Solar is headquartered in Tempe, Arizona, with regional offices around the world and manufacturing facilities in Perrysburg and Lake Township, Ohio; Kulim, Malaysia; and Ho Chi Minh City, Vietnam. Our annual manufacturing capacity has grown from 25 megawatts (MW) in 2005 to 7.9 gigawatts (GW) as of December 31, 2021. We set the foundation to reach approximately 16 GW of capacity in 2024 with the announced plans for new factories in Ohio and India to produce our next generation of solar panels, which we are calling Series 7. The two Series 7 factories are expected to come online in 2023. Our Ohio manufacturing footprint makes us the largest solar manufacturer in the United States and the Western Hemisphere.



## Responsible Solar

At First Solar, we have long understood that we have a responsibility towards our planet, our communities, and our customers. This responsibility drives our sense of purpose — “the why” that inspires every one of our thousands of employees worldwide who have committed themselves to our journey to lead the world’s sustainable energy future.

Since the beginning, we have placed sustainability at the heart of everything we do, focused not on meeting industry standards, but exceeding them and setting new ones. This is why we have a long history of establishing benchmarks in recycling, health and safety, responsible supply chain management, transparency, resource-efficient manufacturing and the carbon and water footprint of our technology.



**ENVIRONMENTAL**

- Lowest environmental footprint in the industry
- Resource-efficient and RE100-committed operations
- Industry leading high-value PV recycling services



**SOCIAL**

- Promote a safe, inclusive and diverse workplace
- Engage in local communities and contribute to a just transition
- Responsible sourcing with zero tolerance for forced labor

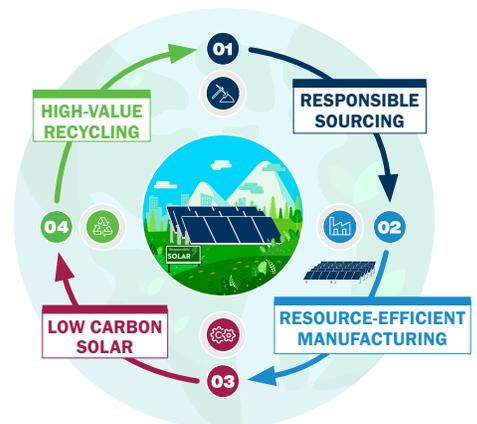


**GOVERNANCE**

- ESG oversight at Board level
- Transparent reporting and disclosure
- EPEAT Silver Rated
- Member of the Responsible Business Alliance (RBA)

Our approach to Responsible Solar is underpinned by the belief that solar should never come at the price of people or the planet. It’s a focus that is interwoven into every aspect of our business and product life cycle, from raw material sourcing to end-of-life recycling:

- Operating a responsible supply chain with zero tolerance for forced labor
- Manufacturing using less energy, water and semiconductor
- Enabling faster decarbonization through lower embodied carbon
- Maximizing resource recovery to enhance circularity

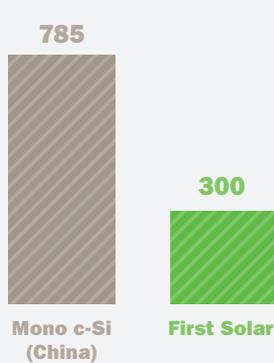


## Ensuring a just and sustainable clean energy transition ●

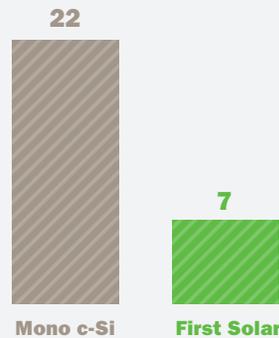
## Industry-Leading Environmental Profile

All PV technologies are not created equal. Where and how a PV module and its components are manufactured significantly impacts its environmental profile. First Solar’s advanced thin film modules are manufactured in a high-throughput, automated environment that integrates all manufacturing steps into a continuous flow operation under one roof, using less energy, water and semiconductor material than conventional crystalline silicon PV manufacturing. In less than 4.5 hours, a sheet of glass is transformed into a complete PV module — flash tested, packaged and ready for shipment.

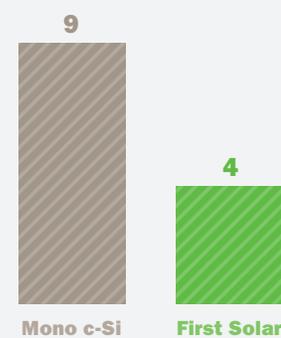
Due to our resource-efficient manufacturing process, First Solar modules have a carbon footprint that is up to 2.5 times lower, a water footprint that is up to three times lower and an energy payback time that is up to two times faster than conventional crystalline silicon solar panels on a life cycle basis . In just four months under high irradiation conditions, First Solar PV modules produce more energy than was required to create them. This corresponds to a 90-fold energy return on investment (EROI) over a 30-year project lifetime, providing an abundant net energy gain to the electricity grid.



**2.5X LOWER**



**3X LOWER**



**2X FASTER**

<sup>1</sup>R. Frischknecht, P. Stolz, L. Krebs, M. de Wild-Scholten, P. Sinha, V. Fthenakis, H. C. Kim, M. Raugei, M. Stucki. (2020). Life Cycle Inventories and Life Cycle Assessment of Photovoltaic Systems. International Energy Agency (IEA) PVPS Task 12, Report T12-19:2020.

With the smallest carbon footprint, fastest energy payback time and lowest life cycle water use in the industry, First Solar modules generate cleaner solar electricity than conventionally manufactured solar panels. This enables our customers to decouple their business growth from environmental impacts associated with conventional electricity generation and consumption. We are continuously working to drive down the environmental footprint of our modules. In 2020, we committed to going 100% renewable across our global operations by 2028, which will enable us to reduce the carbon footprint of our modules by 40%.

Assuming average worldwide irradiance and grid electricity emissions, 40 gigawatts (GW) of our products are being used to displace 26 million metric tons of CO<sub>2</sub> equivalent per year during their 30+ year lifetime. This is equivalent to powering more than 20 million average homes, planting over 430 million trees and saving over 75 billion liters of water (or 30,000 Olympic swimming pools) per year based on worldwide averages. Every year, First Solar products are displacing more than 10 times the amount of greenhouse gas emissions we emit through our global operations and supply chain.

As of December 31, 2021, First Solar Series 6 and Series 6 *Plus* modules are the first and only PV products to be included in the [EPEAT registry for sustainable electronics](#). EPEAT is a globally recognized and independently validated ecolabel that allows for the easy identification of environmentally preferable products from socially responsible companies. EPEAT addresses the full product life cycle, including managing substances in the product, manufacturing energy and water use, product packaging, end-of-life recycling, corporate responsibility and human rights. Our Series 6 and Series 6 *Plus* products were awarded an EPEAT Silver rating, certifying that they exceeded the basic but stringent environmental and social criteria of a Bronze rating.





[More than 50 researchers from leading international institutions](#) have confirmed the environmental benefits and safety of First Solar’s thin film PV technology over its entire life cycle; during normal operation, foreseeable accidents such as fire or breakage, and through end-of-life recycling and disposal. First Solar’s Quality and Reliability labs are over 64,000 ft<sup>2</sup> (6000m<sup>2</sup>) in size globally and test approximately 16,000 PV modules per year for light-induced degradation, resilience to extreme weather, wind, snow and ice loads, fire resistance under reverse current fault conditions, material adhesion, and long-term field performance. First Solar modules are the only module in the industry warranted against cell cracking and micro-cracking, which can be caused by excessive thermal and mechanical stress. First Solar modules are tested for safety during breakage, fire, flooding and hailstorms to ensure their durability in the field. With more than 45GW sold worldwide, First Solar modules have a proven record of safe and reliable performance.

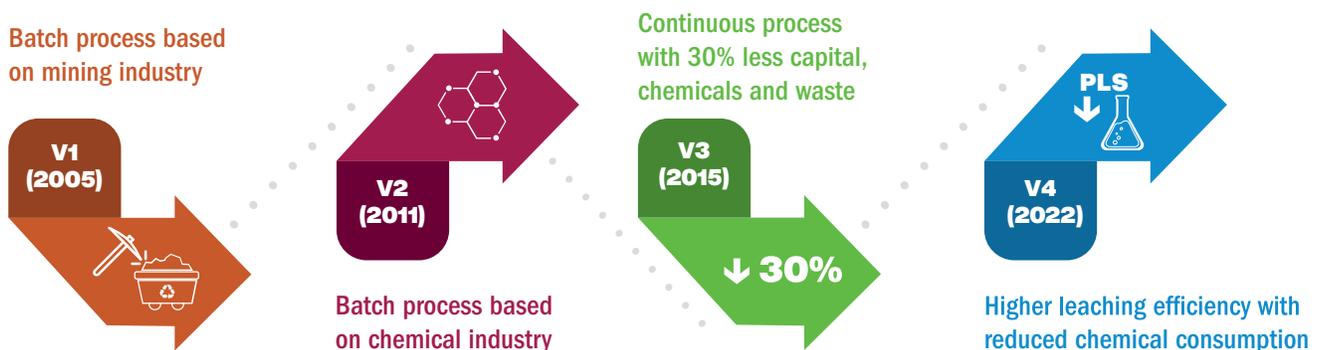
First Solar implements a robust change management system (CMS) to ensure product changes do not negatively impact product safety, reliability, environmental footprint or recyclability. Process changes and module design improvements undergo several test and validation runs before receiving final approval and being implemented across manufacturing facilities. Life cycle analysis is performed for significant product and manufacturing process modifications to assess environmental, health and safety impacts before any changes are implemented. First Solar Series 6 and Series 6 *Plus* PV modules consist of four articles: glass module, junction box, cable, and frame. These articles do not contain substances on the Candidate List of Substances of Very High Concern (SVHC) as defined by EU REACH regulation (revision date: June 25, 2020) above 0.1% by weight per article.

## Powering a Circular Economy

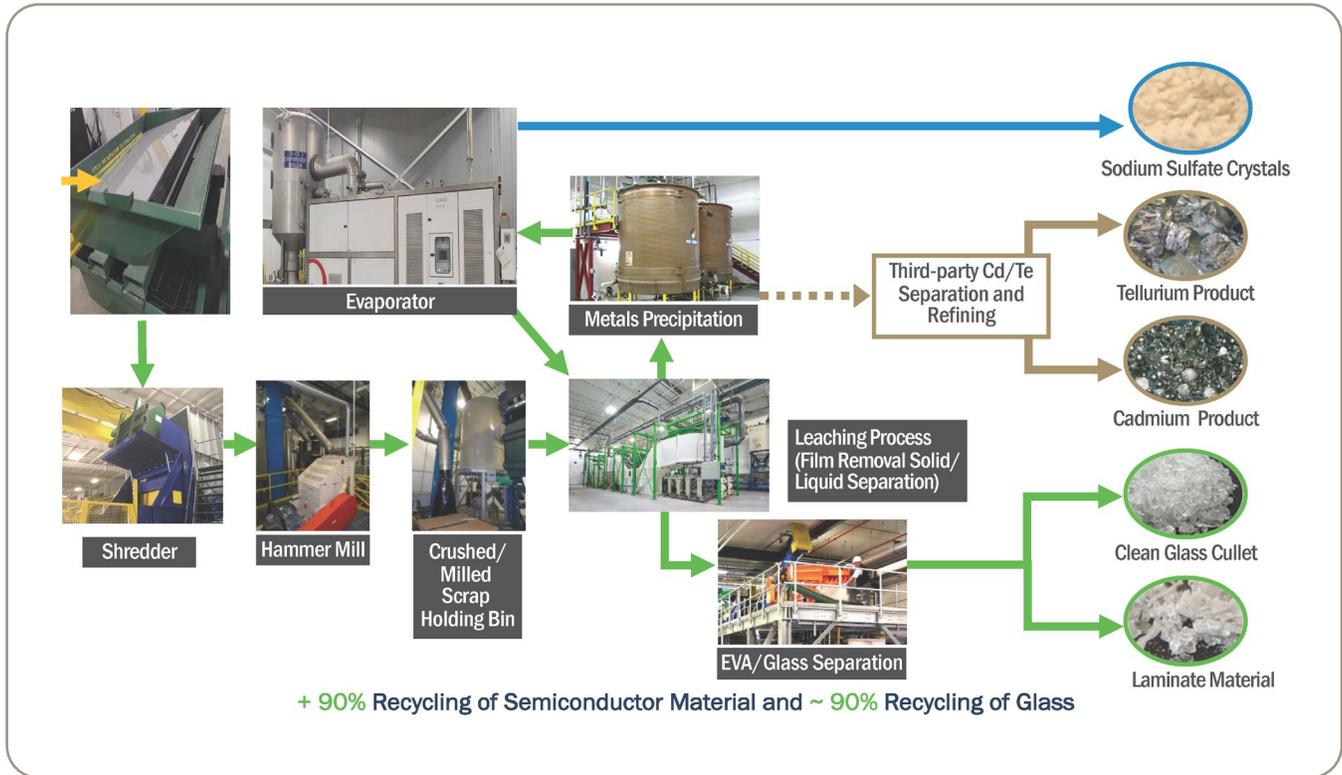
First Solar is contributing to a circular economy by converting mining byproducts into a leading eco-efficient PV technology that can be manufactured using less energy, water and semiconductor material than other commercially available PV technologies. First Solar modules are designed for high-value recycling to maximize material recovery at end-of-life and recover more than 90% of module materials for reuse, providing high quality secondary resources for new solar panels, glass, rubber and aluminum products.



First Solar has a unique and long-standing leadership position in PV recycling as the only solar manufacturer with global in-house PV recycling capabilities. We have more than 15 years of experience operating high-value PV recycling facilities on a global and industrial scale. Recognizing the importance of responsible product life cycle management, First Solar voluntarily established the industry’s first global PV module recycling program in 2005 and we have been investing in PV recycling technology improvements ever since to increase recycling efficiency and drive down recycling prices for our customers. To learn more about First Solar’s global recycling services, please see our [recycling brochure and datasheet](#).



## First Solar Module Recycling Process Overview



While most PV recycling processes focus only on recovering high-mass fraction materials such as glass and frames (i.e. bulk recycling), First Solar’s high-value recycling process goes further by recovering more than 90% of the semiconductor material for reuse in new First Solar modules and 90% of the glass for use in new glass container products. The module frame is removed and recycled for reuse in aluminum products. In Malaysia, the recovered laminate material is reused in rubber products. The remainder of the recycled module scrap (approximately 5 -10%) consists of glass fines which cannot be used in secondary raw materials and are handled using other responsible waste treatment techniques. Due to the shredding and crushing involved in the recycling process, material losses are inevitable, and the recovery ratio is always less than 100%.

### Did you know?

**One kilogram of First Solar’s semiconductor material can be recycled 41 times over, which translates into a use time of more than 1,200 years.**



Since 2018, First Solar's routinely operated recycling plants generate zero wastewater discharge. We installed evaporators at all our recycling facilities in order to recycle wastewater and convert it into freshwater for reuse in the recycling process. In addition to recycling water, the evaporators generate sodium sulfate crystals which can be used in glass manufacturing. We are in the process of identifying glass outlets that can reuse the sodium sulfate crystals from our recycling process to further close the loop on our product's life cycle.

First Solar is among 380 companies to sign the [America Recycles pledge](#), which aims to address the challenges facing the nation's recycling system and create a more resilient materials economy while protecting the environment.



# **Environmental Metrics and Targets.**

## Environmental Metrics and Targets

### ENERGY

#### Targets

- Power global operations with 100% renewable energy by 2028 and 100% of our U.S. operations by 2026.
- Achieve 74% reduction in global energy usage per watt produced by 2028, from a 2009 baseline (or 30% relative to 2020).

#### SDG



### EMISSIONS

#### Targets

- Reduce absolute scope 1 and scope 2 GHG emissions by 34% by 2028, from a 2020 baseline.
- Reduce scope 1 and scope 2 GHG emissions intensity per watt produced by 93% by 2028, from a 2008 baseline.
- Achieve Net Zero emissions by 2050.

#### SDG



### WATER

#### Targets

- Achieve 87% reduction in global water usage per watt produced by 2028, from a 2009 baseline.

#### SDG



### WASTE

#### Targets

- Achieve >90% waste diversion from landfills globally by 2028.
- Maintain >90% PV recycling material recovery rate.

#### SDG



**Leading the World's Sustainable Energy Future ●**

## Measuring Progress

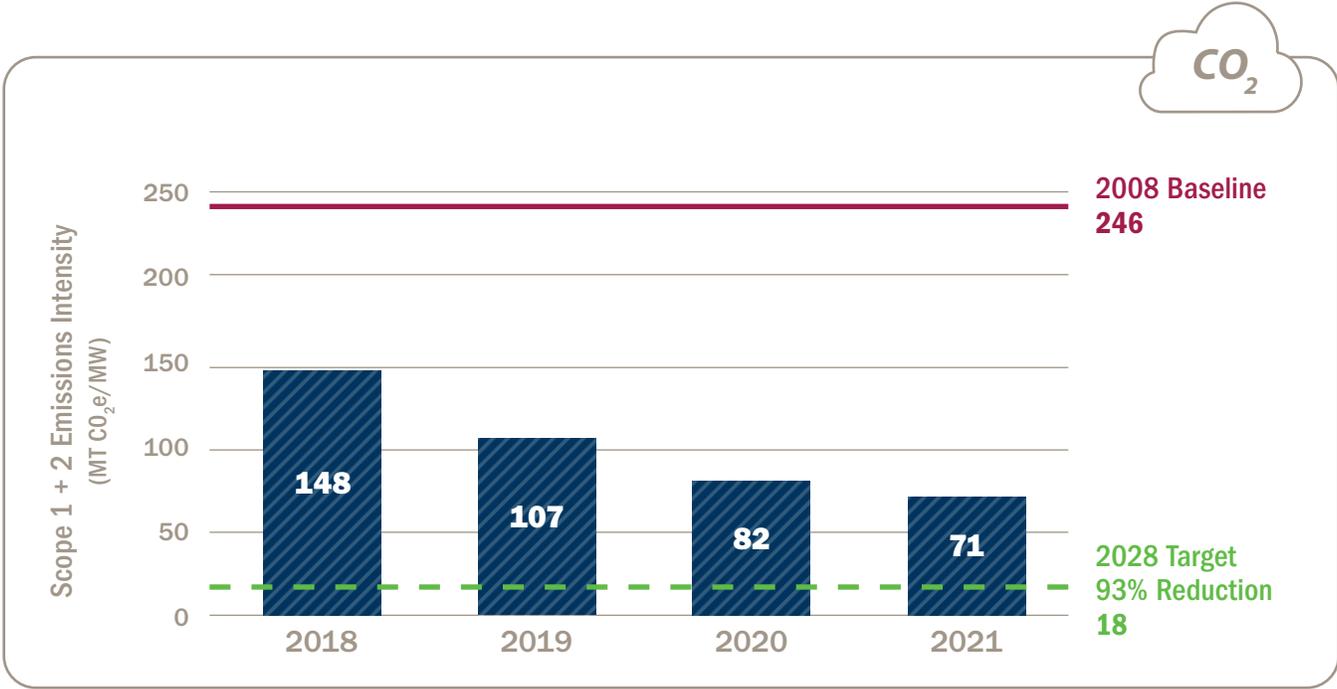
In addition to manufacturing PV modules with the lowest environmental impact in the industry, we are committed to reducing our operational impact. Since 2009, we've successfully reduced our greenhouse gas (GHG) emissions, energy, water and waste intensity per watt produced by implementing resource conservation and low carbon projects at our facilities and through improvements in module efficiency, manufacturing throughput, manufacturing yield and capacity utilization.

In 2021, we produced 7.9 GWDC of solar modules, which represented an approximate 29% increase compared to 2020. The increase in production was primarily driven by the incremental Series 6 production capacity added in Malaysia in early 2021 and higher throughput at our manufacturing facilities. We expect to produce between 8.2 GWDC and 8.8 GWDC of Series 6 and Series 6 *Plus* modules during 2022. The increase in our production capacity and throughput, along with the incorporation of resource efficiency measures into new buildings and Series 6 tool designs and processes, helped significantly reduce our GHG emissions-, energy-, water-, and waste intensity in 2021.

All First Solar manufacturing sites are certified to globally recognized standards: [ISO 14001 for Environmental Management](#), [ISO 9001 for Quality Management](#), and [ISO 45001 for Occupational Health and Safety](#). We foster a culture where environmental, health and safety (EHS) is an integral part of our associates' work and require our contractors and suppliers to adhere to our standards and commitments. [First Solar's Environmental, Health and Safety Policy is available on our website](#). The policy is communicated to all associates through internal communication channels, associate meetings and notice boards throughout the facilities.

We have received global recognition for our state-of-the art environmental controls, performance and manufacturing excellence. Our facilities in Perrysburg and Lake Township have received the Ohio EPA's Encouraging Environmental Excellence Platinum Level Award in recognition of the company's accomplishments in waste reduction, community engagement and eco-efficient manufacturing. In 2020, First Solar Malaysia received the prestigious State Environmental Excellence Award from the Kedah Department of Environment in recognition of our leadership and continuous efforts to demonstrate full environmental compliance in our manufacturing operations. First Solar's Santa Clara office received the Green Business Program certification for efforts to ensure that our business operates in an environmentally friendly manner. First Solar had no environmental non-compliance cases in 2021.

### GREENHOUSE GAS EMISSIONS INTENSITY GOAL



The chart depicts direct (scope 1) and indirect (scope 2) emissions of all manufacturing and recycling plants, R&D and testing facilities, pre-2020 EPC-owned construction equipment, company-owned operational solar projects, and company-owned vehicle fleet on a carbon intensity basis measured per MW produced.

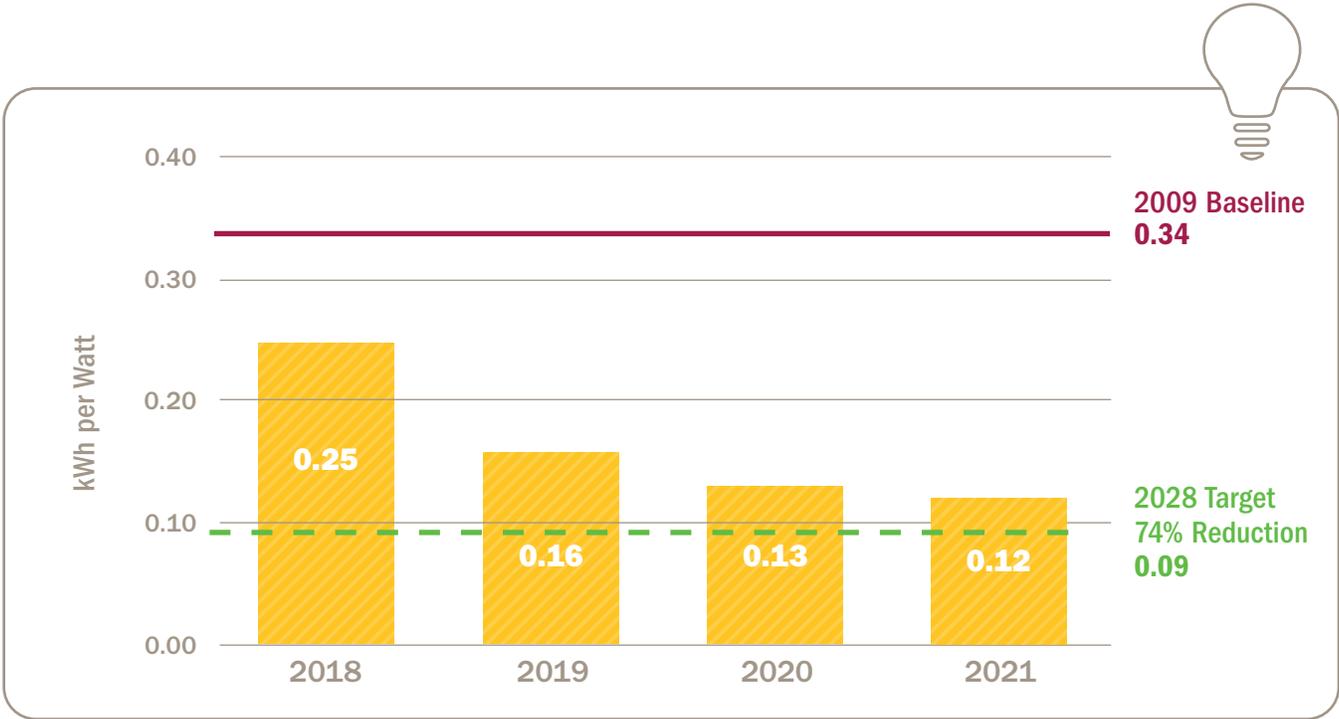
First Solar is committed to driving down our carbon footprint even as we continue to increase our manufacturing capacity and module throughput. Since 2008, our company-wide carbon intensity decreased by approximately 70% as a result of increased module efficiency, manufacturing throughput and capacity utilization, along with energy conservation and low carbon initiatives. In 2021, our GHG emissions intensity decreased by 13% primarily due to the greater throughput and enhanced energy efficiency of our Series 6 manufacturing process. Our 2018-2020 emissions inventory was adjusted based on the latest market-based grid electricity emissions factor for Vietnam.

We have set science-based targets to reduce our absolute scope 1 and scope 2 GHG emissions by 34% by 2028 and achieve net zero emissions by 2050, relative to 2020. We also aim to reduce our GHG emissions intensity by 93% by 2028, from a 2008 baseline. These targets are in line with limiting the global temperature rise to 1.5 degrees Celsius above pre-industrial levels. We aim to achieve this by increasing our energy efficiency, going 100% renewable across our U.S. operations by 2026, enabling the offsite solar market in Malaysia and Vietnam, and purchasing bundled RECs and offsets as a last resort.

In 2020, we joined RE100 and committed to powering our global operations with 100% renewable energy by 2028. We have installed onsite PV installations at our production sites in Ohio and Malaysia and at our recycling facility in Frankfurt Oder, Germany. We are now investigating opportunities to procure offsite solar electricity as part of our renewable energy strategy.



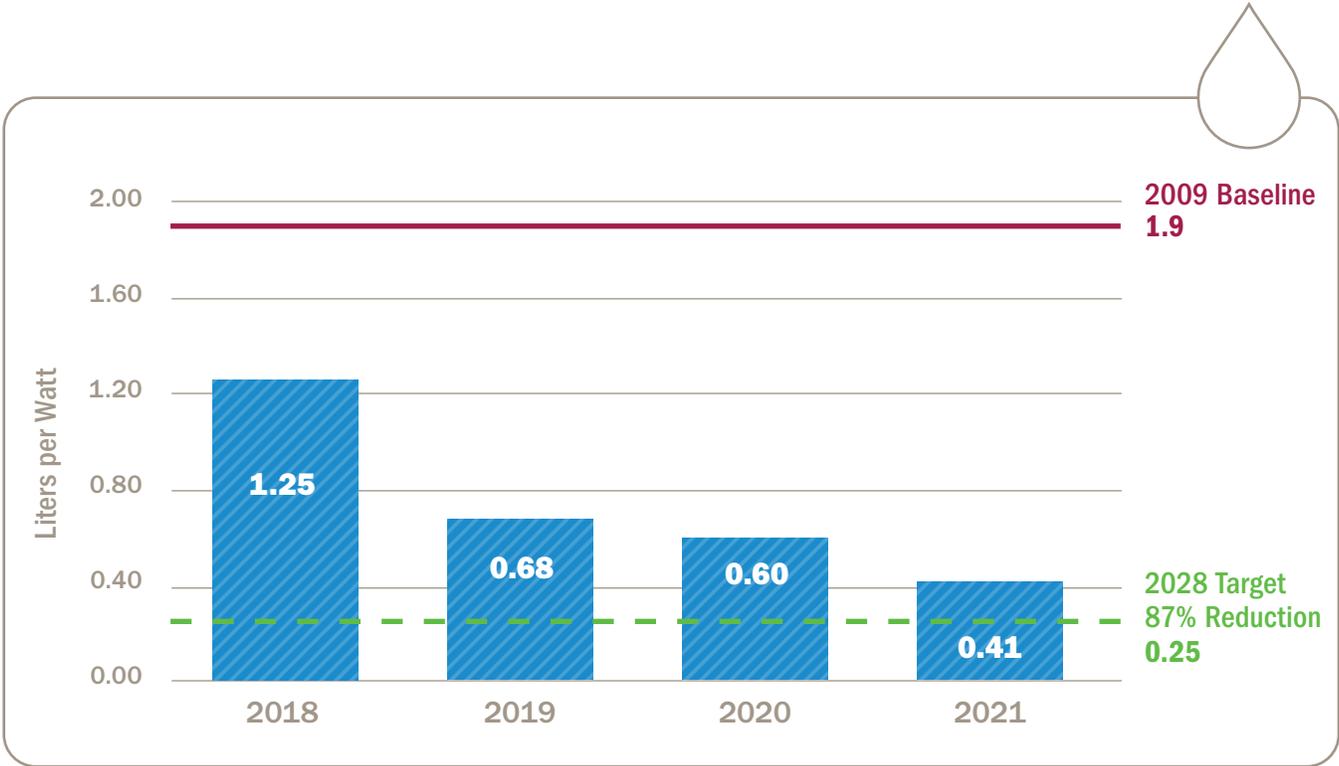
### MANUFACTURING ENERGY INTENSITY



In 2021, our manufacturing energy intensity (energy consumption per watt produced) decreased by approximately 8% compared to 2020 primarily due to the greater throughput and enhanced energy efficiency of our Series 6 manufacturing process. In 2021, we set a target to improve global energy efficiency per watt produced by 74% by 2028, from a 2009 baseline (or by 30% relative to 2020).

First Solar’s manufacturing energy intensity includes all processes, from the beginning of our manufacturing process to finished module. Increased manufacturing throughput combined with module efficiency improvements and energy conservation initiatives have enabled us to cut our manufacturing energy intensity per watt by more than 65% since 2009.

# MANUFACTURING WATER INTENSITY



Since 2009, First Solar’s manufacturing water intensity (water consumption per watt produced) decreased by 78% due to significant improvements in module efficiency, manufacturing throughput, and the implementation of water conservation and recycling projects in our manufacturing and recycling operations.

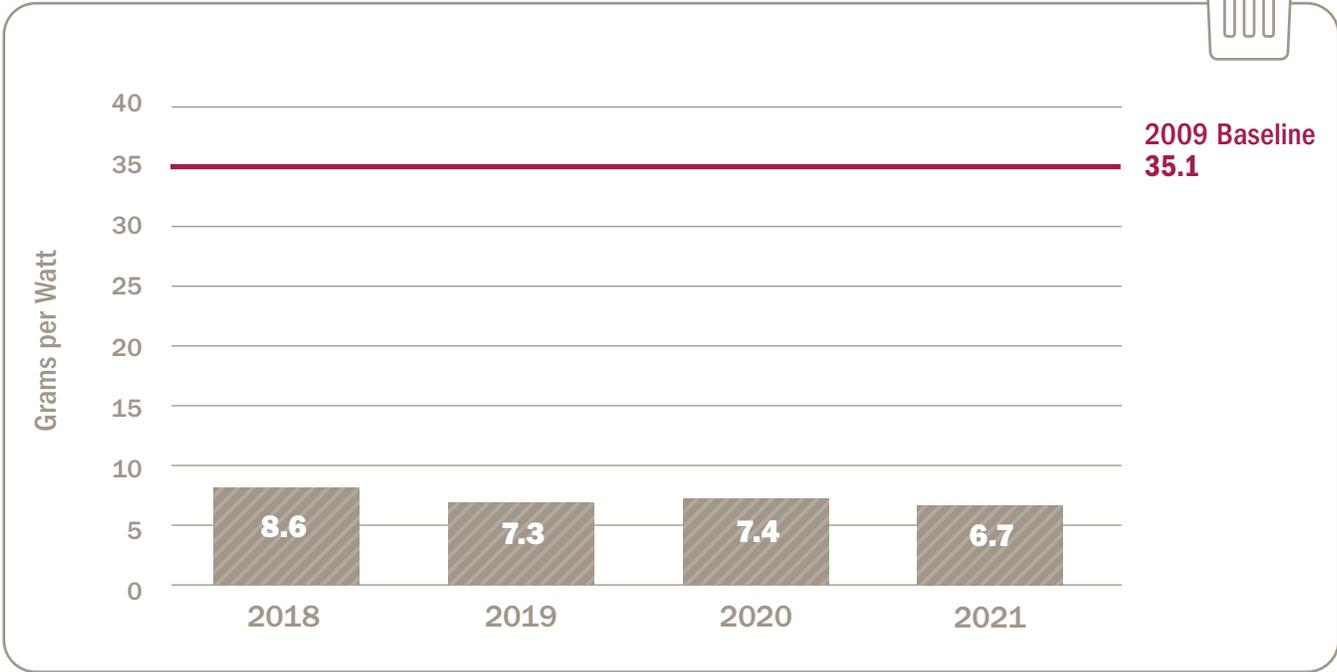
In 2021, First Solar’s manufacturing water intensity decreased by approximately 32% due to the increased throughput and efficiency of our Series 6 manufacturing process as well as water recycling initiatives. In total, we saved more than 268 million liters of water in 2021, equivalent to approximately 8% of our absolute water use. Since 2018, all routinely operated First Solar recycling facilities in the U.S., Germany, Malaysia and Vietnam generate zero wastewater discharge under normal operations. Instead, the wastewater is recycled and converted into freshwater, which can then be reused in the recycling process.

While our production increased by nearly 30% in 2021, our absolute water withdrawals decreased by approximately 7% due to the enhanced throughput and water efficiency of our Series 6 manufacturing process as well as water recycling initiatives. We continue to review water consumption patterns down to the unit-operation level in our manufacturing process and are challenging our process engineers to deliver additional water savings. After surpassing our 71% water intensity reduction target seven years early, we set a new water intensity target of 0.25 liters per watt by 2028 or an 87% reduction compared to our 2009 baseline.

We monitor and measure 100% of the water discharges from our manufacturing, recycling, and research and development facilities. In 2021, approximately 48% (or 1,629 megaliters) of First Solar's total water withdrawn from water utilities (3,392 megaliters) was discharged as wastewater from our industrial wastewater treatment systems. Approximately 74% of our wastewater was sent to a third-party (municipal wastewater facility) and approximately 26% was discharged directly to fresh surface water (river). First Solar treats wastewater at our manufacturing and recycling facilities using a batch discharge system. Once treated, the water is collected in holding tanks, which are sampled and tested to confirm compliance with regulatory limits before being discharged. No industrial wastewater leaves our site unless we have tested and approved it for discharge, even if it is being discharged to a municipal wastewater treatment plant. If the water contaminant levels are above the permitted discharge limit, it is sent for re-treatment internally.

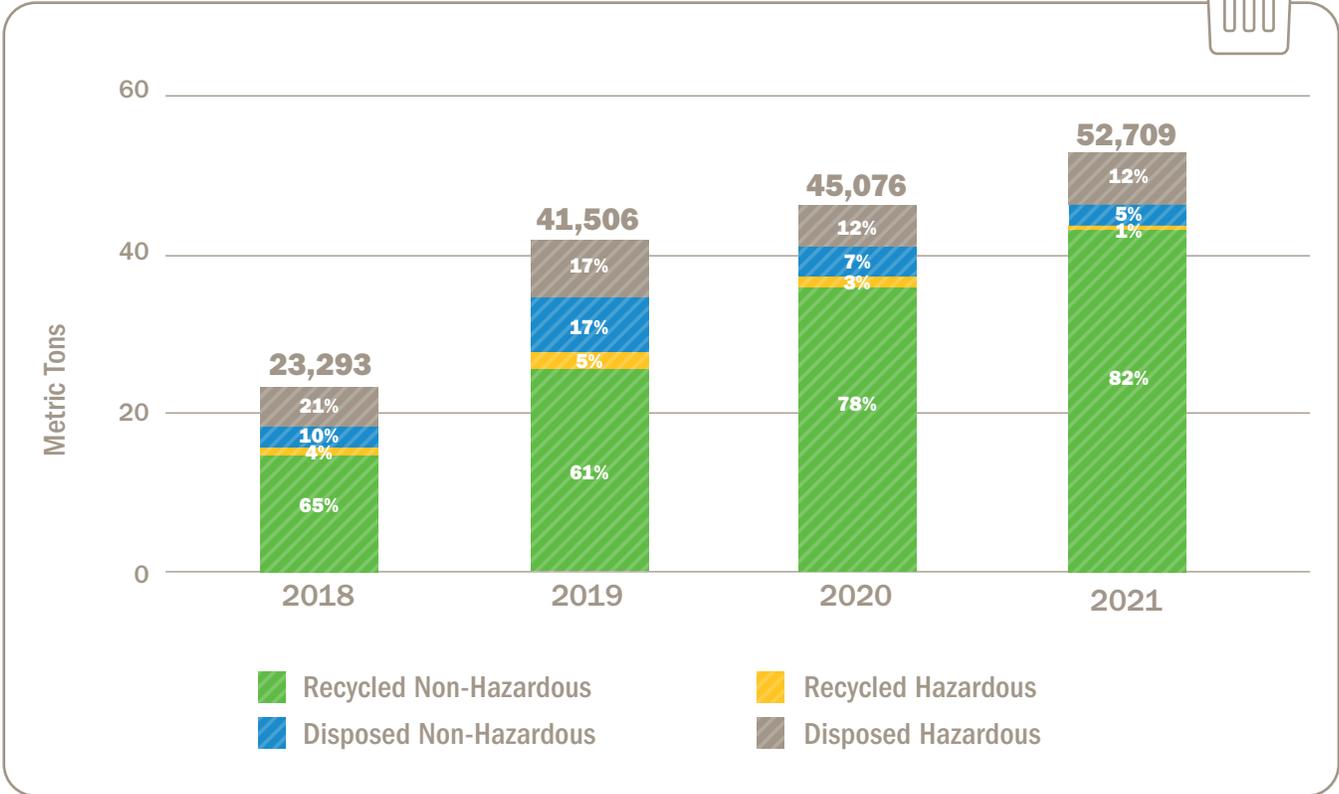


### MANUFACTURING WASTE INTENSITY



First Solar’s manufacturing waste generation intensity (grams per watt produced) has decreased by 81% since 2009 as a result of increased module and manufacturing efficiency combined with recycling and waste minimization projects. In 2021, our manufacturing waste intensity decreased by nearly 10% primarily due to increased throughput, manufacturing yield improvements and less waste generated per watt produced.

### WASTE BY TYPE AND DISPOSAL

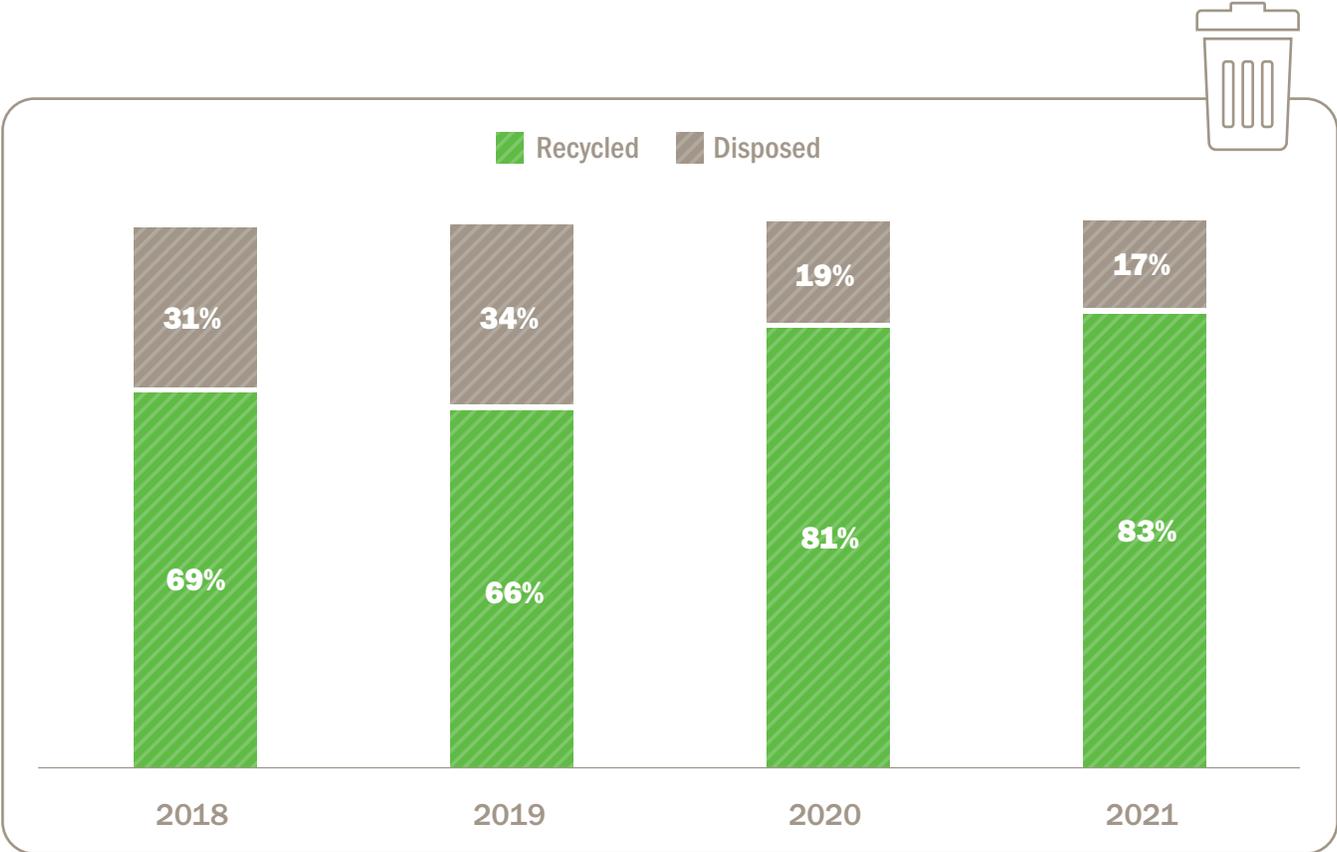


This graph depicts First Solar’s absolute manufacturing waste produced in metric tons with a percentage breakdown by type and destination. While our production increased by nearly 30% in 2021, our absolute waste generation only increased by 17% as a result of higher throughput, manufacturing yield improvements and less waste generated per watt produced.

First Solar is committed to reducing and recycling hazardous waste in line with our environmental management system objectives of minimizing waste and preventing pollution. Since 2012, we have reduced our hazardous waste generation per watt produced by 55%.

Hazardous waste is classified according to the definition used by the countries in which we operate, e.g. under the Environmental Quality (Scheduled Wastes) Regulations in Malaysia, Law No. 55/2014/QH13 on Environmental Protection in Vietnam, and the Resource Conservation and Recovery Act in the U.S.

### MANUFACTURING WASTE RECYCLED VS. DISPOSED



This graph depicts waste recycled and disposed by First Solar’s manufacturing and recycling facilities in Ohio, Malaysia, and Vietnam. The data includes modules that we recycle onsite; both manufacturing line scrap and modules returned from the field, along with many other manufacturing byproducts that are recycled. The data does not include modules that are being recycled at our recycling facility in Germany.

The amount of waste recycled increased in 2021 due to improved recycling throughput. Overall, of the total material First Solar sends off-site, 83% is sent for beneficial reuse and not to landfill.

## 2021 RECYCLING AND RECOVERY ACHIEVEMENT

Metric	Unit	Global
Total collected (metric tons)	Metric tons	41,921
Total recycled - metals (not including semiconductor materials)	%	1.5
Total recycled - semiconductor materials	%	0.4
Total recycled - glass	%	87
Total recycled - other materials	%	0.3
Total disposed - sent to a thermal with energy recovery facility	%	3
Total disposed - sent to a thermal or landfill facility for disposal	%	5
Products or components prepared for reuse**	%	0
<b>Recycling Rate</b>	<b>%</b>	<b>~90</b>
*Recycling rate is the quotient of total recycled and total collected.		
**Refers to products or components that are used again for the same purpose for which they were conceived without any pre-processing, e.g. refurbishment.		

First Solar PV Module Recycling Material Recovery Achievements	
<b>Glass</b>	= 90 mass-%
<b>Metals (not including semiconductor materials)</b>	≥ 90 mass-%
<b>Semiconductor Materials</b>	≥ 90 mass-%

The background of the page is a photograph of solar panels, showing the grid lines and the reflective surface. A white rectangular box is positioned in the lower-middle part of the page, containing the main title. Below the title, there is a decorative horizontal line consisting of several parallel diagonal slashes.

# **Responsible Supply Chain Management.**

# Responsible Sourcing

## SCREENING

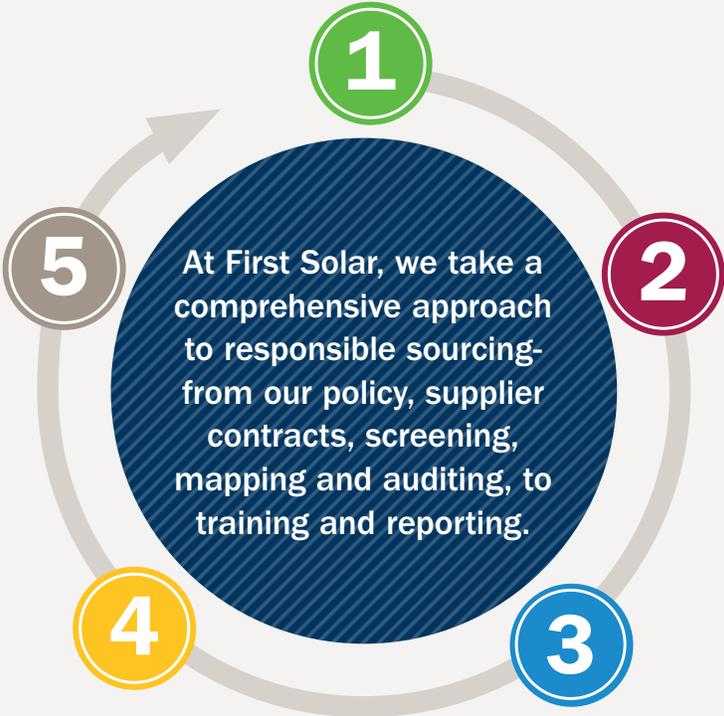
All new suppliers undergo a rigorous qualification process using a balanced scorecard which focuses on Quality, Cost, Flexibility, Service, Technology and Sustainability. We regularly map our supply base and conduct an annual risk assessment to identify potential high-risk suppliers. In 2021, we leveraged third-party tools and indexes on global slavery, forced labor and other environmental, social, governance (ESG) aspects to identify high-risk suppliers based on industry, geography and spend.

## CERTIFICATION

First Solar’s supplier agreements require compliance with applicable laws and regulations in addition to First Solar requirements, which may exceed local legal requirements. Under the terms of First Solar’s supplier agreements, suppliers must commit to comply with the [Responsible Business Alliance \(RBA\) Code of Conduct](#) and require their suppliers to do the same. Suppliers must also represent, warrant and covenant that they will not use child, slave, prisoner or any other form of forced or involuntary labor, or engage in abusive employment in the supply of goods or provision of services. Violation of any labor standards may result in the termination of First Solar’s business relationship with such party.

## REPORTING

First Solar has established a third-party operated [Ethics Hotline](#) to provide an anonymous and confidential solution to communicate serious legal, financial, ethical or human rights concerns. No human rights concerns were reported in 2021. The Ethics Hotline ensures that serious concerns are heard and are acted upon immediately. Any associate, employee of First Solar, supplier and other external stakeholder can report concerns toll-free via our Ethics Hotline.



## TRAINING

In 2021, we provided Transparency across Supply Chain training to all First Solar associates involved in procurement and achieved a 100% completion rate. The training includes the following objectives: recognizing and communicating awareness of human trafficking risks relevant to First Solar’s business; ensuring compliance with the California Transparency in Supply Chains Act (SB 657) and global human rights regulations; and identifying and avoiding trafficked labor in each specific business unit at First Solar.

## AUDITS

First Solar audits new and high risk suppliers on quality as well as environmental management, health and safety, labor, human rights, and ethics by leveraging the RBA Code as a framework. In 2021, First Solar became a member of the RBA which gives us access to their advanced due diligence tools and programs, and enables us to conduct third-party audits of potential high-risk suppliers by leveraging their Validated Assessment Program (VAP) — a leading standard for onsite compliance verification and effective, shareable audits. We work with suppliers to drive improvements and to remedy adverse impacts through Corrective Action Plans. In 2022, we completed our first RBA Validated Assessment Program (VAP) audit at our manufacturing facilities in Ohio and achieved platinum status, the highest possible rating.

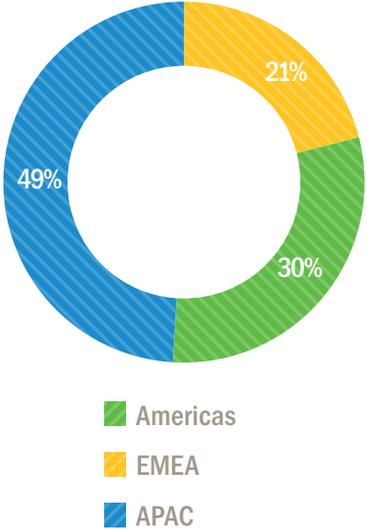
## Supply Chain Overview

Our thin film module manufacturing process uses approximately 30 types of raw materials and components to produce a solar module. Critical raw materials and components in our manufacturing process include CdTe, front glass coated with transparent conductive oxide, organics such as photo resist, tempered back glass, frames, packaging components such as interlayer, cord plate/cord plate cap, cables and solar connectors. As part of our sourcing strategy, we are enabling suppliers that are near to our manufacturing locations, thereby reducing the transportation costs, environmental footprint as well as the lead times for such materials.

First Solar has a global set of specifications for the materials used in our products which results in a tightly controlled supply chain, superior traceability and quality products. We also own and operate the facilities which manufacture our modules- turning a sheet of glass into a completed module all under one roof. In contrast, many traditional tier one crystalline silicon PV manufacturers have multiple products, processes and bill of materials with a sprawling supply chain, which includes multiple process steps (polysilicon/ingots/wafers/cells/modules) often across multiple continents, resulting in increased risks relating to variability, quality, reliability and traceability.

In 2021, First Solar spent more than \$3.1 billion on our global supply chain. Our data includes our manufacturing bill of materials, project spend, capital spend and indirect expenses. The data is based on the region to which purchase orders are issued. 29% of our global spend was spent on local suppliers in the U.S. to support our module manufacturing operations in 2021. In total, we estimate we have created over 42,000 direct, indirect and induced jobs across the supply chain worldwide. Approximately \$53 million was awarded to women-, minority-, and disabled veteran-business enterprises (WMDVBE) in 2021, based on actual spend.

### 2021 Supplier Spend by Region (%)



GRI Indicator	Title	2021 Disclosure	Social impacts Used for Screening
414-1	New suppliers that were screened using social criteria	100%	Suppliers are screened on the following social criteria: <ul style="list-style-type: none"> <li>• Clean and safe facilities</li> <li>• Minimum wages</li> <li>• Working hours (allowing at least one day off per week)</li> <li>• Health and safety practices</li> <li>• Non discrimination</li> <li>• Freedom of association and collective bargaining</li> <li>• Humane treatment and prevention of harassment or abuse</li> <li>• Prohibition of child labor</li> <li>• Prohibition of forced or compulsory labor</li> <li>• Collective bargaining</li> <li>• Business ethics (including corruption, extortion, embezzlement, conflict of interest, bribery, excessive gift giving, disclosure of information, intellectual property, fair business advertising and competition, privacy and non-retaliation.)</li> <li>• Conflict minerals</li> </ul>
414-2	Negative impacts on social impacts in supply chain and actions taken	5	In 2021, First Solar conducted six audits which included environmental and social criteria based on the RBA Code of Conduct and one supplier completed a third-party VAP audit. Due to COVID-19 travel restrictions in 2021, most of the audits were conducted virtually. There were zero priority non-conformances and only one (or 14%) of the suppliers were identified as having significant actual or potential negative social impacts. Five major non-conformances were identified in the areas of labor, health and safety. Corrective action plans were put in place for the supplier in Malaysia to ensure workers get at least one day off every seven days, improve emergency response programs, First Aid kit maintenance and PPE inventory log, establish cafeteria food handling procedure and religious accommodation policies.
308-1	New suppliers that were screened using environmental criteria	100%	Suppliers are screened on the following environmental criteria: <ul style="list-style-type: none"> <li>• Environmental management systems</li> <li>• Pollution prevention and resource reduction</li> <li>• Solid waste management</li> <li>• Hazardous substances management</li> <li>• Environmental permits</li> <li>• Air emissions monitoring and management</li> <li>• Water management</li> <li>• Energy consumption and GHG emissions</li> </ul>
308-2	Negative environmental impacts in the supply chain and actions taken	2	In 2021, First Solar conducted six audits which included environmental and social criteria based on the RBA Code of Conduct and one supplier completed a third-party VAP audit. Due to COVID-19 travel restrictions in 2021, most of the audits were conducted virtually. There were zero priority non-conformances and only one (or 14%) of the suppliers were identified as having significant actual or potential negative environmental impacts. Two major environmental non-conformances were identified. Corrective action plans were put in place for the supplier in Malaysia to conduct scheduled waste vendor assessments and revise its environmental discharge management procedure.



## Human Rights Standards and Practices

First Solar is committed to protecting human rights, enforcing fair labor practices and addressing the potential risks of forced labor, child labor, human trafficking and slavery across our operations and supply chain. As part of this commitment, we stand against all forms of modern slavery and have zero tolerance for forced labor, human trafficking and child labor. Our [2021 Transparency in Supply Chains and Modern Slavery Statement](#) describes our efforts to address the risks of modern slavery across our operations and supply chain. The statement was published in accordance with the California Transparency in Supply Chains Act of 2010 (SB 657) and the UK Modern Slavery Act 2015, and is publicly available on our website.

Our [Labor and Human Rights Policy](#), which references international human rights declarations and due diligence guidelines, applies to everyone at First Solar and its affiliates, including all associates, officers, and directors. As a member of the Responsible Business Alliance, we implement the RBA Code of Conduct within our operations and our supply chain. Under the terms of First Solar's supplier agreements, suppliers must commit to comply with the RBA Code of Conduct and require their suppliers to do the same. Suppliers must also represent, warrant and covenant that they will not use child, slave, prisoner or any other form of forced or involuntary labor, or engage in abusive employment in the supply of goods or provision of services.

Our Chief Compliance Officer manages First Solar's Global Compliance Organization which oversees our ethics and compliance program. The goal of this organization is to implement policies, processes, training, monitoring and general awareness programs to promote ethics and compliance with applicable legal and regulatory standards. Subject to the requirements of local law, and after due diligence and full and fair investigation, any employee found to have directly engaged in or knowingly engaged suppliers engaged in slave labor or human trafficking will be subject to immediate termination of employment.

## Conflict Minerals

First Solar is committed to operating a supply chain free of conflict minerals, which include gold, tin, tantalum, and tungsten and their derivatives (or any other mineral or its derivative determined by the Secretary of State) whose extraction and trade are financing conflict in the eastern Democratic Republic of the Congo or an adjoining country (together, the “covered countries”). To the extent we source minerals from the covered countries, we are dedicated to protecting and respecting human rights by responsibly sourcing such minerals.

We have a long-standing commitment to conducting our business in compliance with applicable laws and regulations and condemn human rights abuses associated with the extraction, transport, or trade of minerals. Similarly, we have a no-tolerance policy with respect to corruption, money laundering, and/or bribery. We require all direct suppliers to agree to follow such principles. First Solar’s [Conflict Mineral Policy](#) is communicated to our suppliers and is publicly available on our website. We have an operating, cross-functional internal governance team with representatives from our supply chain, compliance, and legal departments to ensure policy statements and control processes are followed.

We support sourcing from the covered countries when performed in accordance with accepted international standards, specifically within the guidance from the Organization for Economic Co-operation and Development (“OECD”). Suppliers with minerals not found to be conflict free in their sourcing will be given a reasonable amount of time to begin sourcing minerals responsibly and in a manner consistent with the principles of responsible sourcing from conflict-affected areas. First Solar reserves the right to take appropriate actions up to and including identifying an alternate source of supply or discontinuing purchases from a supplier should a supplier’s efforts to comply with this policy be deficient.

As we do not source directly from smelter or refiner processing facilities, we rely on the Responsible Minerals Initiative’s Responsible Minerals Assurance Program (RMAP), previously known as Conflict-Free Smelter Program, to oversee and coordinate third-party audits of these facilities. The RMAP audit protocols and procedures require the smelters or refiners to engage specially trained third-party auditors to independently verify that these smelters and refiners can be considered conflict free. Our conflict minerals risk mitigation plan defines supplier-risk management strategies, including (i) continued procurement, (ii) assistance in identifying alternate sources of supply, and (iii) disengagement, the severity of which is at the discretion of our executive management. We aim to advance the effectiveness of our due diligence efforts and further enhance our compliance processes by, among other things, encouraging non-RMAP validated processing facilities to become validated either through the RMAP or a RMAP-recognized third-party audit program.

First Solar is committed to complying with the reporting obligations required under Section 1502 of the Dodd-Frank Act and the SEC’s rules on conflict minerals, including the requirement to conduct inquiries and, if necessary, due diligence into the source and chain of custody of any conflict minerals included in our products. First Solar’s Specialized Disclosure and Conflict Minerals reports are available on our public website (see “[Specialized Disclosure](#)” tab in SEC Filings).



# Social Responsibility.

## Our Culture

At First Solar, innovative and passionate people, working ethically and safely, form the foundation of our success. We generate results through a culture of agility, collaboration and accountability. Our internal Vision, Mission and Culture includes behaviors that support safety first, mutual respect for all associates, empowered collaboration between functions and individuals, and personal ownership of decisions, performance and results. As a global culture, we value multiple voices and perspectives. This diverse tapestry of different viewpoints, approaches and needs helps us to produce better products and services.

### Agility



We are creative and resilient.

### Collaboration



We help each other succeed.

### Accountability



We own the results of our actions.



In May 2022, we completed our first RBA Validated Assessment Program (VAP) audit at our manufacturing facilities in Ohio and achieved platinum status, the highest possible rating. The audit was conducted by independent third-party auditors specially trained in social and environmental auditing and the VAP audit protocol. It covered the full scope of the VAP, including fair labor practices and human rights, health and safety measures, environmental performance, business integrity, ethics, and supporting management systems. The rating is valid until May 5, 2024.



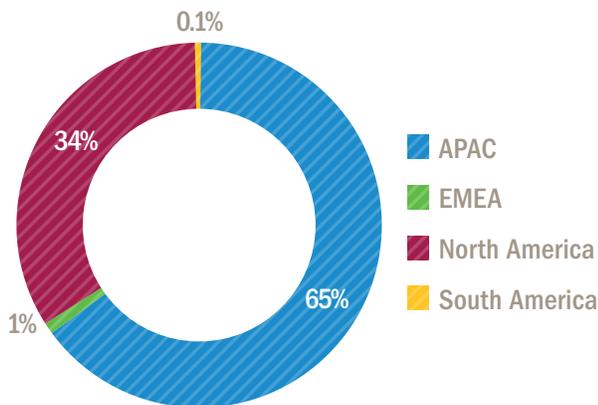
**We're incredibly proud that our Ohio facilities set the benchmark for socially- and environmentally-responsible solar manufacturing, based on an independent, impartial standard used across manufacturing industries. The fact that we achieved Platinum status on our first try is a tribute to the passion and purpose of our people who exemplify First Solar's commitment to Responsible Solar.**

**Mark Widmar**  
**Chief Executive Officer | First Solar**

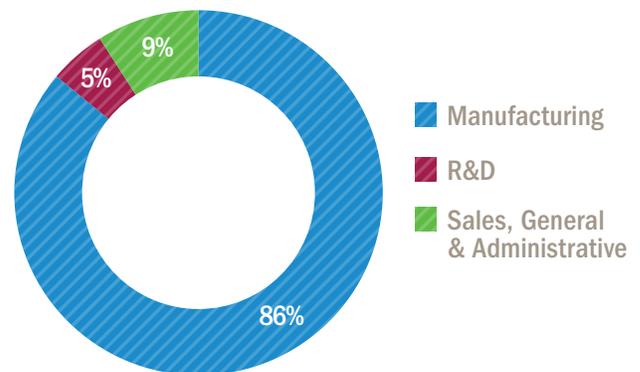
## Working At First Solar

As of December 31, 2021, we had approximately 4,800 associates (our term for full and part-time employees) compared to approximately 5,100 in 2020. The change in the number of associates was primarily attributed to the sale of First Solar’s U.S. Project Development and North American O&M businesses which was completed in 2021. Approximately 85% of our associates work in manufacturing and the remainder of our associates are in research and development, and sales, marketing, general and administrative positions. In 2021, eight associates (or approximately 0.2%) were part-time while the rest were full-time.

Associates by Region in 2021



Associates by Function in 2021



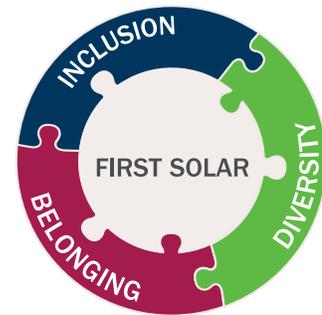
As part of our efforts to attract new and diverse talent, First Solar Ohio launched a High School Initiative in 2021 to introduce students to opportunities in production operations. From Fall 2021 through Spring 2022, First Solar hosted 350 high school students from area schools such as the Penta Career Center and the Toledo Public Schools. The students visited our Perrysburg manufacturing plant where they learned about solar energy, First Solar, production careers, and attended a factory tour to witness a high tech manufacturing facility in action.

In 2021, First Solar created part-time positions for students to gain production experience while finishing their senior year. Seven students have since become full time associates after graduating. We recently hired our first associate to a new full-time apprenticeship position within maintenance. The position was created for high school graduates of vocational programs that are looking to get a start on their career while furthering their education paid for by First Solar.

First Solar’s High School Initiative also seeks to inform local schools of the skills needed for solar manufacturing. We recently hosted a Faculty in the Workplace experience where an instructor from the Toledo Public Schools got to participate in our week-long production onboarding program which includes on-the-job production line training.

## Inclusion, Diversity & Belonging

At First Solar, inclusion, diversity and belonging is more than a program or an initiative, it is a transformation. We recognize that diversity and inclusion (D&I) is a driving force in the success of our company and believe in creating an environment where different voices are encouraged, heard and valued including, gender, race, ethnicity, sexual orientation, military status, generation, abilities, perspectives, backgrounds and personalities.



**First Solar has integrated inclusion, diversity and belonging goals and measures throughout, translating our global strategy into local action. We believe in comprehensive actions at every level to drive foundational change in the culture and promote a diverse and inclusive workplace.**

**LEADERSHIP:** Over the past year, we've increased the gender, racial and ethnic diversity of our Board of Directors. Today, each Board committee has at least one diverse representative. First Solar's Board of Directors is 33% diverse, with 25% of seats occupied by women and 17% occupied by ethnic or racially diverse Directors. We are proud to be recognized as a "3+ company" by [50/50 Women on Boards](#) for having at least three women serve on our Board. In 2021, we published a [Board of Directors Diversity & Inclusion Transparency Report](#) which highlights our journey and ongoing commitment to enhance diversity at the Board level. A diverse Board and Executive Leadership Team sets the tone from the top, helping the company drive diversity and inclusion throughout our organization. We are committed to including one or more qualified diverse candidate in each search process for new Board members and new members of the Executive Leadership Team. We are also committed to using a search firm to broaden our Board recruiting pipeline in instances where one or more qualified diverse candidates have not been identified among our Directors' or Executive Leadership Team's personal networks. We disclosed the gender and racial composition of our Board in our [2022 proxy statement](#).



**TALENT ACQUISITION:** At First Solar, we seek to hire outstanding, qualified talent globally to further our mission. Consistent with this, we take a consciously inclusive approach in our hiring practices to build globally diverse, high performing teams. We post our open jobs on more than 25 diversity and veteran-focused recruitment sites and we strive to have every external candidate search include diverse individuals. Our Talent Acquisition team reviews applicant and new hire metrics quarterly, including metrics related to diversity. In addition, we monitor ethnicity and gender diversity on an annual basis, including through our Affirmative Action Policy (AAP) and reports, and

take action as appropriate. First Solar is an Equal Opportunity Employer (EOE), and we prohibit discrimination based on race, color, religion, sex, age, national origin, veteran status, disability, sexual orientation, or gender identity. First Solar makes good faith efforts to improve year over year our representation in those areas. First Solar's [EOE policy](#) is available online.

**PAY AND PROMOTIONS:** At First Solar, we have a Global Career Framework for our associates' growth and development and a Pay-for-Performance model, which rewards our associates for achieving goals and associated metrics. Promotions are managed within our Global Career Framework which provides a common language to describe career pathways, job and skill requirements and facilitates talent movement. Within the Framework, we use a Global Grading System, a rigorous process for job leveling and a consistent and systematic approach to evaluate individual positions in the context of the entire company. We review pay on a regular cadence to check for internal and external equity including minimum wage and living wage assessments across our global operations. In 2021, we raised our minimum hourly wages in line with prevailing wage levels. We are in the process of completing our gender pay gap assessment and in the future we intend to expand this to formally assess racial equity. Our 2022 Bonus Plan includes D&I goals and metrics for all associates.



**BENEFIT PROGRAMS AND POLICIES:** First Solar is committed to helping associates face the demands of balancing work, family and life-related issues by offering a number of possible alternative work options. First Solar provides a hybrid virtual working model called FLEX. Through First Solar's FLEX program, associates may work on premises, at home or both depending on current circumstances and the need of the business. First Solar's alternative work schedules enable women to work part-time while transitioning back into the workforce. First Solar also offers four-week paid parental leave to all U.S. associates who meet basic employment requirements to enable associates and their families to care for and bond with a newborn child, a newly adopted child, or a newly placed foster child.

**ENGAGEMENT AND INCLUSION:** In 2021, we conducted a global inclusion and engagement survey and incorporated an inclusion index to provide a baseline for future surveys. The global inclusion index for 2021 was 81%, and a number of areas including fair promotions and feeling respected and valued improved compared to our 2019 associate engagement survey. We have just completed our 2022 inclusion and engagement survey and are compiling the results.

**EXTERNAL PARTNERSHIPS:** First Solar is committed to supporting and encouraging girls and women in science, technology, engineering, and mathematics (STEM) fields by participating in initiatives such as the University of Toledo College of Engineering's Introduce a Girl to Engineering Day and contributing to the AmCham Women in Engineering Scholarship (ACWES) in Vietnam. In addition to working with local universities, First Solar is also partnering with external organizations such as Women in Cleantech and Sustainability, to foster an industry network of professionals with a mission to further the roles of women in growing the green economy and making a positive impact on the environment.

**COMMUNITY IMPACT:** In 2021, First Solar invested \$11 million in efforts to revitalize American communities and bridge racial gaps in health, wealth, and opportunity. As part of the initiative, First Solar purchased \$10 million in Impact Notes, or fixed-income debt securities, issued by the Local Initiatives Support Corporation ([LISC](#)) which help fund community and economic development projects across 36 cities and 2,100 rural counties in 45 states. First Solar also made a \$1 million Transformational Deposit in Mississippi-based [HOPE Credit Union](#) to provide business, mortgage, and consumer loans, and other financial services to Black communities across the Southern United States.



**GLOBAL AND REGIONAL DIVERSITY NETWORKS:** We continue to establish global and regional diversity networks and affinity groups consistent with First Solar's culture and philosophy. Sponsored by our CEO and supported by a quarterly Executive Advisory Group, these Networks aim to attract talent, develop future leaders through mentoring, sponsorship, networking, and a collaborative learning culture and enrich our dialogue across the business, forging external partnerships that bring new perspectives.



#### THE GLOBAL WOMEN'S NETWORK (GLOW)

Launched in 2019, GLOW's goals encompass supporting hiring managers and talent acquisition on strategies to find and attract diverse talent by participating in university career fairs, enhancing women's professional and personal development through inspiring discussions and webinars with thought leaders including the company's female Board members. We promote an inclusive and supportive work environment by providing valuable insights, feedback and analysis.

#### BLACKS IN RENEWABLES NETWORK (BNR)

Launched in 2020, BnR is dedicated to promoting the development of Blacks, African Americans and other minorities as future renewable energy leaders through attracting talent, professional development, associate retention, and community involvement. In 2021, BnR participated in First Solar Talent Acquisition's University Recruiting Campaign at Arizona State University, Howard University and University of Toledo's National Society of Black Engineers (NSBE) chapter.



#### RENEWABLE EMPLOYEE RESOURCE GROUP

RenewABLE is a voluntary, employee-led group with a broad representation of abilities and backgrounds. RenewABLE focuses on collaborating, educating, and empowering employees to make First Solar a disability-friendly accessible workplace. RenewABLE's goal is to provide cultural support to associates who are born with or have acquired a disability, who have child(ren) with special needs, or serve as a caregiver to adults with disabilities. According to the World Health Organization, more than one billion people around the world live with a disability and almost everyone will likely face temporary, situational, or permanent disability at some point in life. In 2021, 26% of our U.S. associates identified as having a disability.



First Solar's Chief Manufacturing Operations Officer, Mike Koralewski, meets with GLOW members in Vietnam.

First Solar's women and minority networking and affinity groups such as Tempe's Curie Club, the Perrysburg Women's Networking Group, and Kulim's Women@FirstSolar, contribute to both formal and informal efforts to promote D&I across the company.

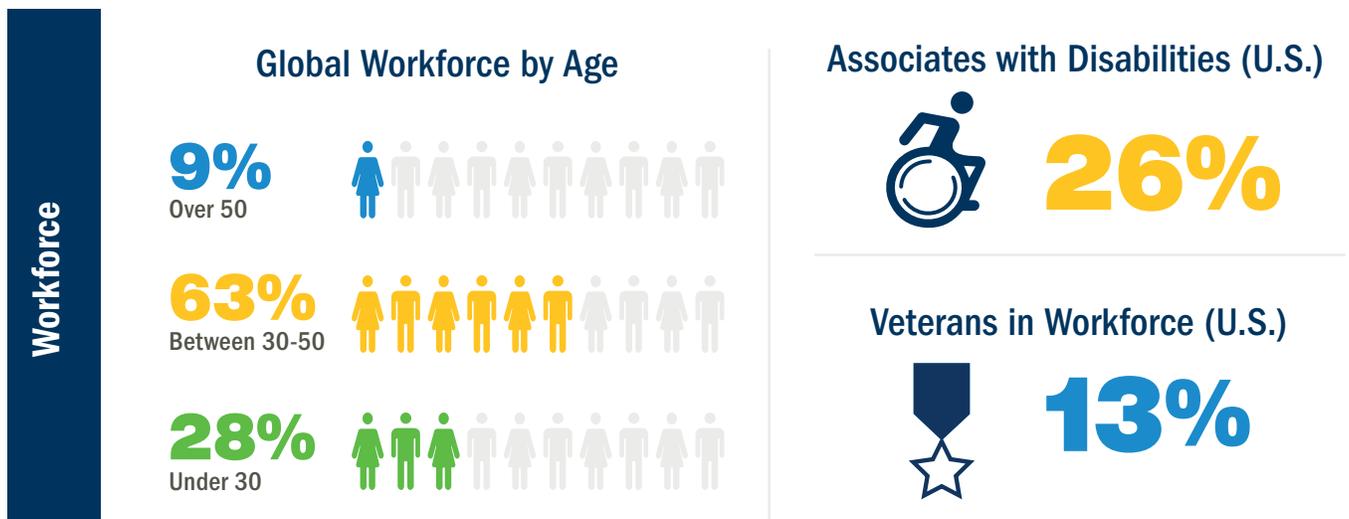
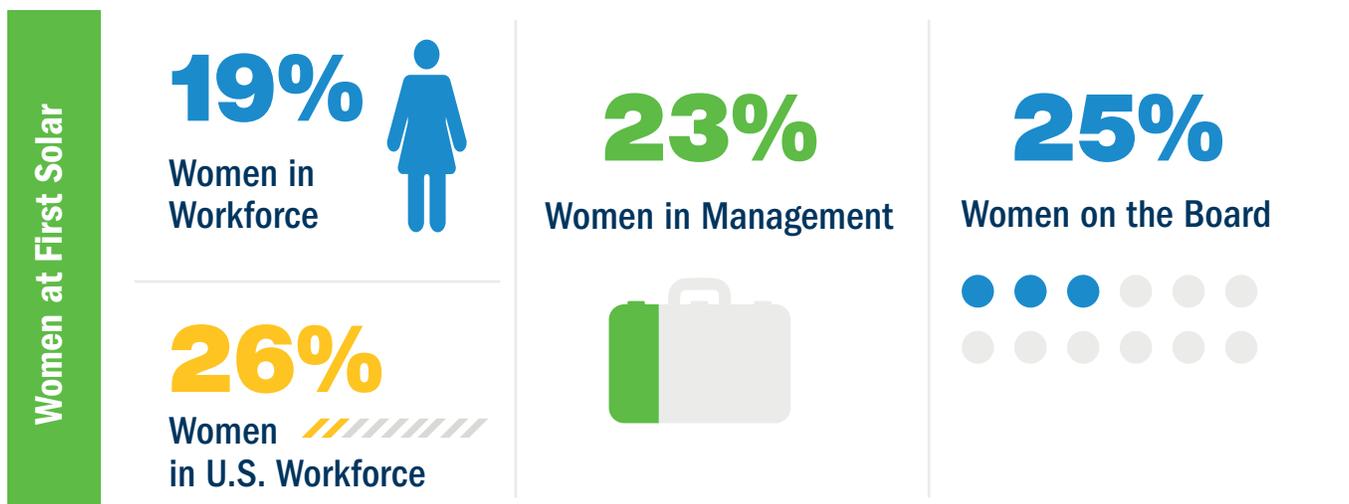
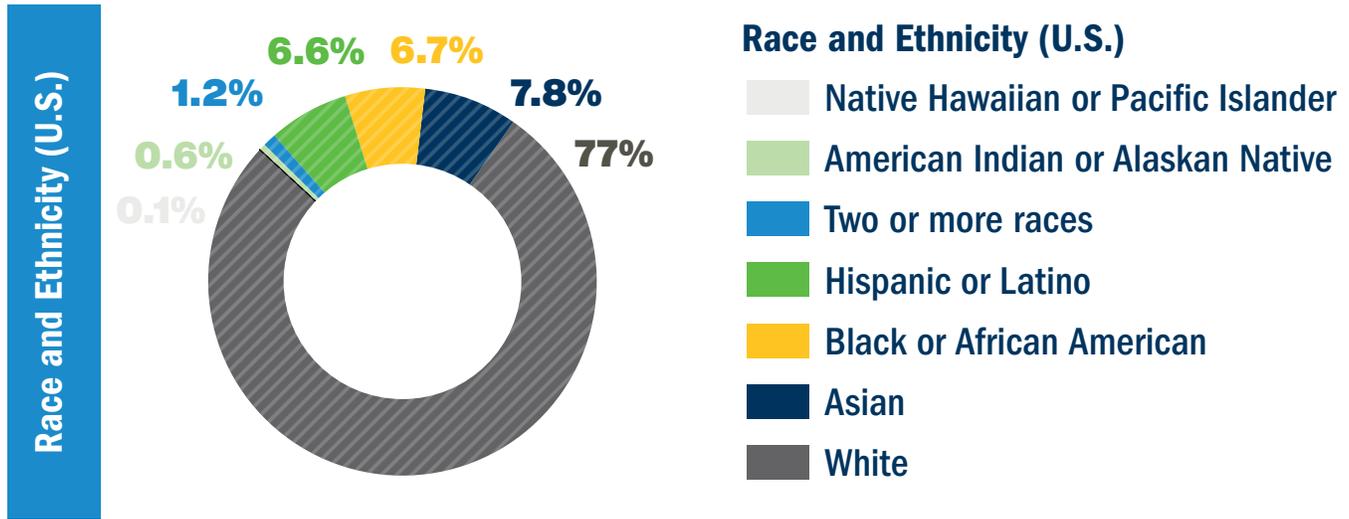
First Solar champions a culture of belonging for our LGBTQ+ associates every day. We frequently sponsor the pride parades in Tempe, Arizona, and Toledo, Ohio to show our support and be allies for our LGBTQ+ community. Here is what some of our LGBTQ+ associates have to say about why they choose to work at First Solar: [https://www.youtube.com/watch?v=Z9I5uSf\\_2rY](https://www.youtube.com/watch?v=Z9I5uSf_2rY)

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**I walked into First Solar the first day and I felt at home. I can dress the way I want to dress, and look the way I want to look, and they accept me. It's not just my team that accepts me, it's all of First Solar that accepts me and it's amazing ●**

**Kelly S.**  
IT Technician II

# By the Numbers.



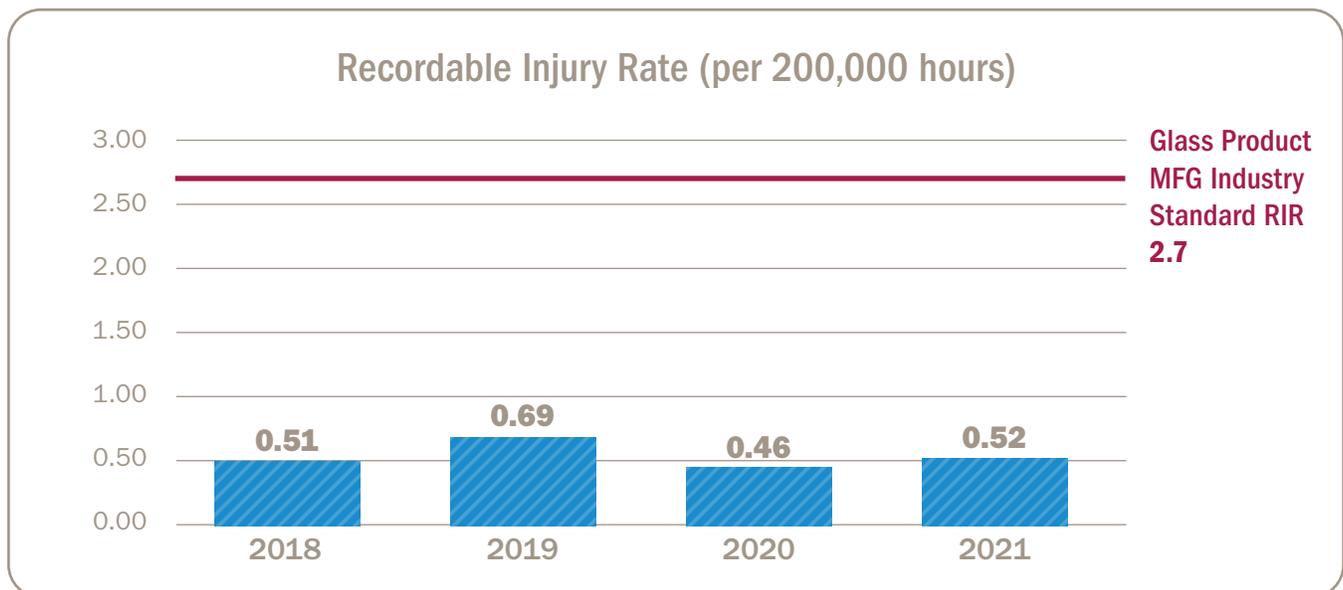
## EEO-1 Data (U.S. Data Only)

As part of our commitment to increasing transparency around diversity and inclusion at First Solar, we are publicly disclosing our Employer Information Report (EEO-1) data for the first time. The EEO-1 report is submitted to the Equal Employment Opportunity Commission on an annual basis. Although the EEO-1 data is solely U.S.-focused, our diversity and inclusion initiatives are global. The following table depicts First Solar's U.S workforce demographics as of December 31, 2021:

Job Category	Hispanic or Latino		Not Hispanic or Latino												Totals
	Male	Female	Male						Female						
			White	Black or African American	Native Hawaiian or Pacific Islander	Asian	American Indian or Alaskan Native	Two or more races	White	Black or African American	Native Hawaiian or Pacific Islander	Asian	American Indian or Alaskan Native	Two or more races	
<b>Executive/ Sr Officials &amp; MGRS</b>	3	0	14	0	0	2	0	1	3	0	0	0	0	0	23
<b>First/Mid Officials &amp; MGRS</b>	1	3	81	2	0	21	0	0	23	0	0	5	0	0	136
<b>Professionals</b>	9	4	247	4	0	62	0	1	89	4	0	27	2	1	450
<b>Technicians</b>	15	3	186	11	1	6	1	3	39	3	0	2	0	1	271
<b>Sales Workers</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Administrative Support</b>	1	4	9	0	0	0	0	1	12	0	0	2	2	0	31
<b>Craft Workers</b>	7	0	122	5	1	1	1	0	4	1	0	0	0	1	143
<b>Operatives</b>	31	22	257	50	0	0	2	5	128	25	0	0	1	5	526
<b>Laborers &amp; Helpers</b>	3	2	43	2	0	0	1	0	12	3	0	0	0	0	66
<b>Service Workers</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL</b>	70	38	959	74	2	92	5	11	310	36	0	36	5	8	1646
<b>PREVIOUS REPORT TOTAL</b>	72	43	1006	81	0	107	5	17	350	44	1	39	6	9	1780

## Occupational Health And Safety

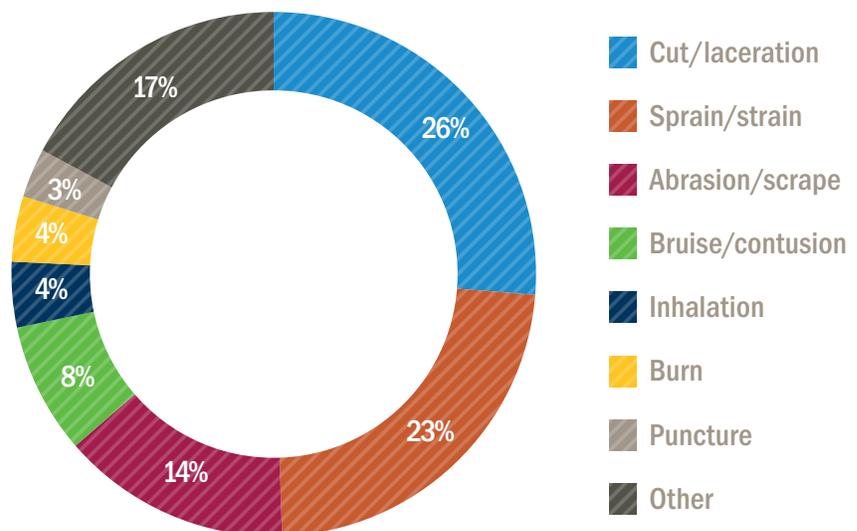
At First Solar, our goal is to achieve an injury-free workplace. Since 2008, our recordable injury rate (RIR) has decreased by 80% (from 2.6) by establishing a strong safety culture throughout the company and ensuring an understanding of First Solar's Safety Policies and Procedures. Our company-wide recordable injury rate is five times lower than the glass product manufacturing industry average. First Solar's RIR includes all manufacturing, R&D, and office locations, calculated per 200,000 hours. An injury is considered recordable if it requires medical attention beyond first aid. First Solar's manufacturing safety data covers all processes from the beginning of the manufacturing process to the finished module and includes all of the company's manufacturing facilities in the U.S., Malaysia and Vietnam. We had no high-consequence work-related injuries in 2021. In 2022, First Solar added a safety metric to the Annual Bonus Plan that measures the company's Good Catch Reporting. A Good Catch is an observation for a safety improvement, either an unsafe act or condition. All associates are encouraged to report Good Catches to enhance our safety culture and provide an opportunity to proactively identify and reduce risk.





All First Solar associates receive legally required health and safety training as well as routine refreshers on health and safety topics pertinent to their job requirements. First Solar requires all contractors to work under our safety policies, programs and procedures. 100% of First Solar’s workforce and management team are represented by formal joint management-worker health and safety committees. Associates from all levels and functions can participate in the cross-functional safety committees which meet on a regular basis to review incidents and implement corrective actions. The site safety committees report to the EHS Steering Committee on a quarterly or more frequent basis.

### Injuries by Type (2021)



Safety data includes all global manufacturing and offices.

First Solar’s safety management system hazard identification and risk assessment process identified the following hazards that have the potential for serious injury or fatality: confined space entry, electrical exposure and arc flash, line of fire, lock out/tag out, machine guards, vehicle collision, working with a suspended load, and working at heights. First Solar has developed EHS Design Requirements for new equipment that includes equipment and machine safety requirements. Training and procedures are in place to identify and control potential hazards.

## COVID-19 Pandemic Response

In line with guidance from the World Health Organization, local health authorities and governments, First Solar continued to implement the required measures over the past year as the Pandemic evolved to help inhibit the spread of COVID-19 across our global footprint. We maintained an internal COVID-19 Preparedness and Response Plan along with company policies to implement all necessary safety precautions to protect our associates. Key preventative actions at manufacturing facilities included temperature checks for all associates and visitors, sanitizing of all work stations after each shift, mandatory mask use and social distancing, routine training and communications on best practices, and restricted business travel. We maintained a dedicated intranet page with the latest COVID-19 news and resources, and provided routine updates via an internal newsletter.

First Solar provided benefits and new coverage to address multiple scenarios for all associates e.g. expanded telemedicine coverage; back-up child care coverage; paid quarantine; expanded Extraordinary Circumstance Leave. We provided additional vacation time and extra overtime plus incentive pay for those associates who had to work on site throughout the pandemic. At our manufacturing site in Vietnam, we implemented a “Quarantine and Work On-site” program in compliance with local directives for 931 associates and contractors to work, eat and sleep on-site to safely maintain operations and minimize risk of community transmission.

First Solar provided multiple on-site vaccination clinics globally at our manufacturing facilities that resulted in 86% of associates in Ohio, Malaysia and Vietnam being vaccinated for COVID-19.





## Sustainability Ambassadors Program

As part of our efforts to “think globally and act locally,” we launched a global internal Sustainability Ambassadors program in 2018. The program enables First Solar associates at various sites to identify and implement local sustainability initiatives such as resource efficiency and reduce-reuse-recycle (3R) projects, educational and awareness-building workshops, site clean-ups, and local community outreach and volunteering.

Despite the pandemic and many associates working remotely, our Sustainability Ambassadors helped identify opportunities to save energy and water at our global manufacturing locations, participated in site clean-ups in California and Ohio, volunteered at a local orphanage in Vietnam, implemented 3R projects in Malaysia, and organized green challenges and photo contests for Earth Day in 2021.



## Global Charitable Giving Program

First Solar makes three kinds of donations as part of our Global Charitable Giving Program: corporate donations (i.e., donations made through the First Solar Corporate Charitable Fund), site donations (i.e., donations made through First Solar local offices and manufacturing sites), and business development donations (i.e., donations related to First Solar sales activities). First Solar donated \$363,163 in 2021 in total cash and in-kind contributions.

Global Charitable Giving Program	Type	2020
<b>Manufacturing and Office Site Donations</b>	Community	\$192,590
<b>Business Development Donations</b>	Community	\$110,573
<b>Corporate Charitable Fund Donations</b>	Charitable	\$60,000
	<b>Total</b>	<b>\$363,163</b>



First Solar is a proud sponsor of the Smithsonian Arts + Industries Building FUTURES exhibition. As part of this partnership, First Solar donated biomimicry-inspired and solar-powered energy charging stations and committed to a \$250,000 sponsorship which will be paid over three years starting in 2021. The installations incorporate a battery storage system which helps to run a cooling fan and charge electronic devices and electric landscaping equipment used by the Smithsonian horticulturists to maintain and beautify the surrounding Enid A. Haupt garden- contributing to the institution's goal to reduce its carbon footprint. These installations along with the educational display help teach the general public about solar energy and how it is applicable to everyday use.

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**In 2021, First Solar continued its company-wide efforts to mitigate COVID-19 impacts on communities where we live and work.**

First Solar Malaysia donated more than \$10,000 to support COVID-19 vaccination efforts and help distribute food aid packs to underprivileged residents impacted by the Movement Control Order. First Solar Malaysia also donated more than \$2,000 to support the basic needs of flood victims in the town of Guar Chempedak in Yan Kedah and approximately \$12,000 for various community outreach and education initiatives.

First Solar Vietnam donated more than \$9,000 to purchase ventilators and other critical Covid-related medical equipment, along with necessary goods and essential supplies which helped support 40 elders at the Nhan Nghia old-folks house and 50 disabled children at the Thien Phuoc Orphans House.

In Ohio, First Solar donated \$20,000 to support a Covid-19 vaccination awareness campaign led by VProject. The organization’s goal is to help vaccinate 70% of Toledo and Northwest Ohio. As of June 2022, more than 60% of residents in Ohio had received at least one dose of the Covid-19 vaccine.



**We partner with NGOs to improve the quality of life in communities around the world to:**

- Empower the next generation through education for sustainable development
- Ensure access to clean energy and water
- Reduce inequality through economic inclusion, diversity and equal opportunity
- Promote a circular economy through sustainable production and responsible consumption

**Corporate Giving Initiatives**

\$20,000 grant to support Toledo's participation in a regional civic hacking competition designed to develop technology-based water quality solutions.

**NGO/PARTNER**  
**Cleveland Water Alliance**

**YEAR**  
**2021**

**SDG**  
**6 CLEAN WATER AND SANITATION**



\$5,000 grant to support the First Solar Corporate Scholarship Program which provides awards to eligible scholars from member colleges.

**NGO/PARTNER**  
**The Ohio Foundation of Independent Colleges**

**YEAR**  
**2021**

**SDG**  
**4 QUALITY EDUCATION**



\$15,000 grant to support the Solar Ambassador Fellowship program.

**NGO/PARTNER**  
**Re-Volv**

**YEAR**  
**2021**

**SDG**  
**7 AFFORDABLE AND CLEAN ENERGY**



\$20,000 grant to support northwest Ohio's COVID-19 vaccine awareness campaign.

**NGO/PARTNER**  
**VProject**

**YEAR**  
**2021**

**SDG**  
**3 GOOD HEALTH AND WELL-BEING**






# Governance.

## ESG Oversight At First Solar

At First Solar we define sustainability as our “capacity to endure and scale.” Our sustainability approach enables us to achieve long-term growth while following environmentally and socially responsible practices. First Solar’s sustainability program drives our commitment to the triple bottom line of “people, planet and profit” through our approach to responsible life cycle management, environmental footprint analysis, resource efficiency and greenhouse gas emissions reduction, waste management, global charitable giving, operational cost reduction, responsible sourcing and human rights, as well as our global PV module recycling services. We are committed to minimizing the environmental impacts and enhancing the social and economic benefits of our products across their life cycle. First Solar’s [Corporate Sustainability Policy](#) is available on our website.

First Solar’s Board of Directors’ Nominating and Governance committee has overall oversight of the company’s environmental, social, governance (ESG) strategy and policies, as defined in their [charter](#). First Solar’s ESG Steering Committee, led by our Chief Executive Officer and consisting of our Executive Leadership Team, has the highest level of direct responsibility for ESG matters and reports into the Board of Directors on a biannual or more frequent basis. First Solar’s ESG and Sustainability team coordinates the cross-functional taskforce of ESG focus leaders responsible for defining, measuring and reporting on progress to the ESG Steering Committee on a quarterly basis. First Solar’s ESG focus leaders help advance the company’s approach to Responsible Solar by driving progress on key strategic ESG areas including:

- Energy, Emissions & Resource Efficiency
- Circular Economy
- Inclusion, Diversity & Belonging
- Innovative Products
- Public Policy and Public Sentiment
- Reliable Products
- Responsible Sourcing and Human Rights



## Board Of Directors

First Solar's business is conducted under the oversight of our Board of Directors. The primary responsibility of the Board is to oversee and review senior management's performance of First Solar's business operations. Our Board of Directors is composed of 12 directors, including ten independent directors and two non-independent directors, our Chair of the Board and our CEO. Each of the chairs of our Board committees are held by an independent director. In 2021, the Board of Directors established the position of Lead Independent Director and adopted a Lead Independent Director Charter setting forth the duties and responsibilities of the position. Molly E. Joseph was selected unanimously by the independent directors of the Board to serve as the Company's first Lead Independent Director.

In 2020, we revised our Nominating and Governance Committee Charter to underscore that we are "actively seeking highly qualified women and minority candidates as part of the search process for new Board members," and better defined diversity to include background, gender, race and ethnicity. In 2021, we further revised our Nominating and Governance Committee Charter and Corporate Governance Guidelines to state that "the search process for new Board members... shall include one or more racially or ethnically diverse candidate in each search process for new Board members." For more information, please visit our website: <http://www.firstsolar.com/en/About-Us/Leadership>

## Executive Management

First Solar's CEO and executive management team are responsible for managing the company's day-to-day business operations, including the preparation of financial statements and short- and long-term strategic planning. We have added gender, racial and multicultural diversity into the Executive Leadership team as a reflection of our commitment to diversity.

For more information, please visit our website: <http://www.firstsolar.com/en/About-Us/Leadership>

## Ethical Business Conduct

First Solar holds ethical business conduct as a core principle and we are committed to operating at the highest ethical standards in every area of our business, everywhere we do business. First Solar's [Code of Conduct, Relentless Integrity: How We Conduct Business Ethically](#), demonstrates our commitment to this principle and guides the company's business conduct. Our Code of Conduct applies to everyone, from members of the Board of Directors to our officers, associates and our valued partners. We have a

long-standing commitment to conducting our business in compliance with applicable laws and regulations. This commitment, along with our culture of agility, collaboration and accountability, defines our accepted behaviors and enables us to advance our mission to provide cost-advantaged solar technology through rigorous safety practices, innovation, customer engagement, industry leadership and operational excellence. First Solar has a Chief Compliance Officer, who reports regularly to the Board of Directors and the Executive Leadership Team on the status of our ethical culture and develops processes and procedure to further monitor and advance our ethics and compliance programs. First Solar has an existing mechanism for reporting any misconduct or policy violations via various channels, including our [Ethics Hotline](#). Any First Solar associate, supplier and other external stakeholder can report concerns free of any retaliation, discrimination, or harassments via our third-party operated Ethics Hotline which provides an anonymous and confidential solution to communicate any concerns on conduct.

## Collective Bargaining And Freedom Of Association

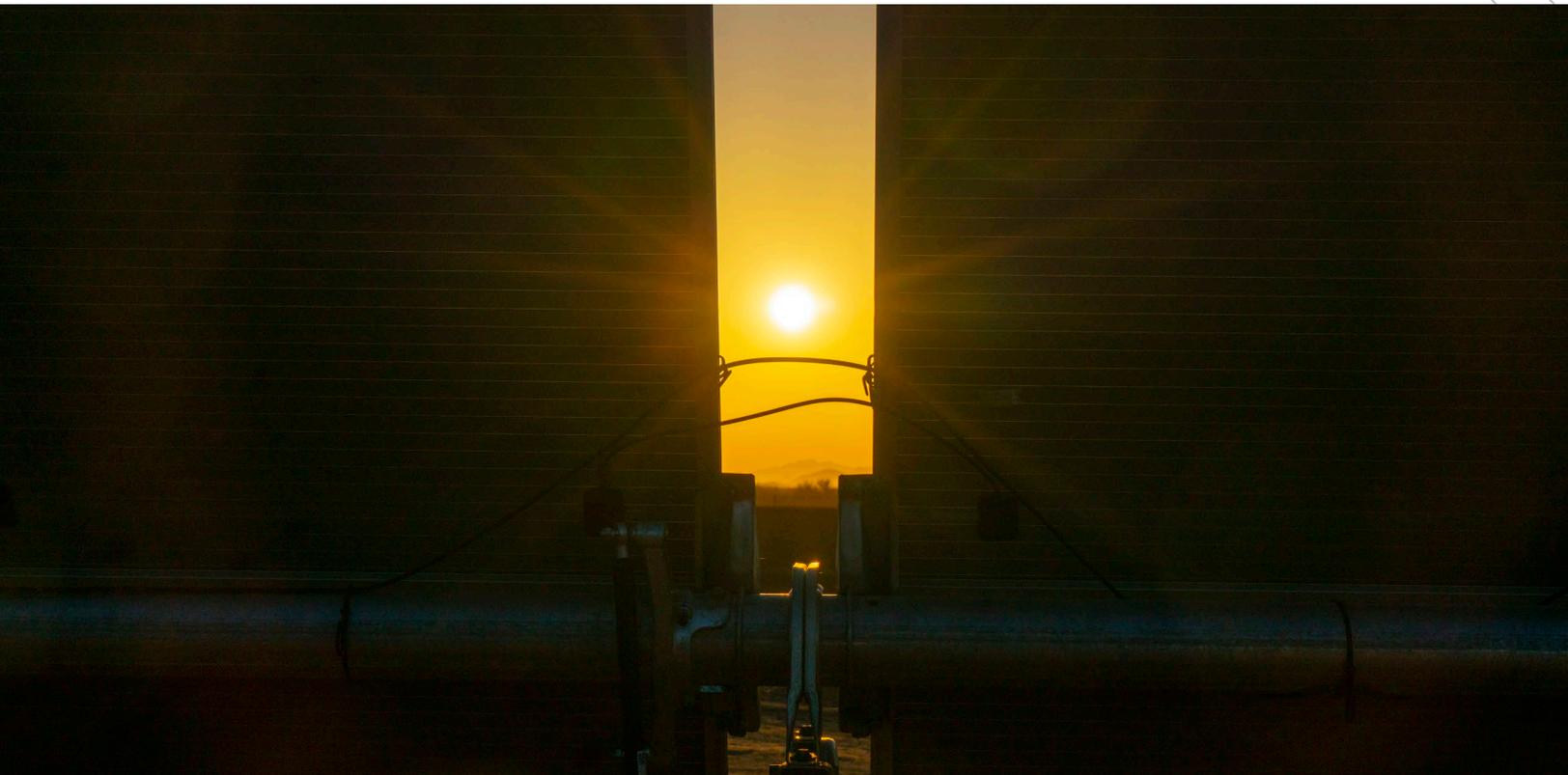
First Solar recognizes that in the locations where we operate, employees have the right to freely associate or not associate with third-party labor organizations, along with the right to bargain or not bargain collectively in accordance with local laws. First Solar respects those rights and is committed to creating an environment of open communication where employees can speak with their managers about their ideas, concerns or problems, and work together to address workplace issues.

## Anti-Corruption

First Solar performs risk assessments that consider the possibility of fraud and related indicators. We currently operate in, and may expand into, many parts of the world that have experienced governmental corruption to some degree and, in certain circumstances, strict compliance with anti-bribery laws may conflict with local customs and practices. First Solar's Global Anti-Corruption Policy requires all associates to comply with the U.S. Foreign Corrupt Practices Act (FCPA) and all other applicable local anti-corruption laws. The Global Anti-Corruption Policy prohibits bribery, kickbacks, and the giving of other improper payments to obtain or retain business and covers any person engaged to perform work on behalf of First Solar including freelancers, independent contractors, temporary contractors, independent professionals, agents and consultants. We communicate our anti-corruption and anti-bribery policies in our customer and service contracts. FCPA training is provided to associates in higher risk profile jobs and tailored according to the region. First Solar has implemented processes and procedures to help ensure compliance with all applicable anti-corruption laws. These processes and procedures are monitored and audited on an ongoing basis.

## Data Security And Privacy

First Solar is committed to complying with all data protection and privacy laws applicable to our business. First Solar's global data protection compliance program operates as part of our global compliance program. First Solar's Global Data Protection Policy establishes minimum standards that First Solar and our subsidiaries must apply to personal data on a company-wide basis. All First Solar associates are required to comply with our Global Data Protection Policy, including by ensuring that they have completed the requisite training to enable them to do so. First Solar conducts periodic and as-needed training regarding the lawful and intended purposes of processing personal data, the need to protect and keep information accurate and up-to-date, and the need to maintain the confidentiality of the data to which associates have access. As needed, First Solar functions, departments or divisions may conduct more specific training related to such functions, departments or divisions processing of Personal Data. In addition, annual Cyber Security training is required for First Solar associates, and a formal cyber communication cadence provides topical awareness on a monthly or more frequent basis. Non-compliance with the policy may lead to disciplinary action, up to and including dismissal or contract termination. First Solar adheres to the NIST Cybersecurity Framework, and conducts annual audits and testing of its information security and data privacy programs, engaging external partners periodically. First Solar has not experienced an information security breach in the last three years.



## ESG Recognition and Awards

- **2022: America's Most Responsible Companies- Newsweek and Statista**  
Top 10 in the Energy and Utilities industry
- **2022: "Low Risk" ESG Rating - Sustainalytics**  
In recognition of company's strong overall management of material ESG issues
- **2022: AA (Leader) Rating- MSCI ESG Research**  
Highest ESG rating in the solar industry
- **2021: Fast Company's World Changing Ideas Award Finalist**  
First Solar's approach to Responsible Solar
- **2021: "Prime" Rating - ISS ESG**  
Demonstrating best-in-class environmental, social, governance performance
- **2021: Ohio EPA Encouraging Environmental Excellence PLATINUM Award**  
Most prestigious environmental recognition in Ohio
- **2021: EPEAT Silver Rating**  
1st PV products in the EPEAT registry for sustainable electronics (Series 6 and Series 6 Plus)
- **2020: Kedah Department of Environment State Environmental Excellence Award**  
In recognition of First Solar Malaysia's leadership and manufacturing operations
- **2020: CDP Climate Change A- rating**  
For leadership on climate change and disclosure and management of climate-related risks
- **2020: CDP Water Security A- rating**  
For leadership on water stewardship and disclosure and management of water-related risks
- **2020: Global Challenges Index**  
Among 50 companies making pioneering contributions to overcome global challenges such as climate change, the provision of clean drinking water, deforestation, biodiversity, population development, poverty and global governance
- **2019: PV Magazine Sustainability Award**  
Selected joint winner in recognition of Series 6's industry leading environmental profile



## External Sustainability Initiatives

- **Carbon Disclosure Project (CDP):** First Solar has participated in and publicly reported to CDP since 2011.
- **Climate Leadership Council:** As a founding member, First Solar supports the Climate Leadership Council's mission and carbon dividends plan as a cost-effective, equitable and politically-viable climate solution. The plan calls for a substantial, gradually rising, revenue-neutral carbon tax with the revenue distributed to citizens.
- **EPEAT:** First Solar is a member of the EPEAT Advisory Council, a non-fiduciary body formed to provide input and advice to EPEAT management. EPEAT is a globally recognized Type 1 Ecolabel which enables public and private purchasers to identify environmentally leading products from socially responsible companies. The EPEAT PV modules and inverters category launched in October 2020.
- **International Energy Agency (IEA) Photovoltaic Power Systems Program Task Committees 12:** As a member of Task 12, First Solar promotes international collaboration on PV safety and sustainability.
- **International Renewable Energy Agency (IRENA):** First Solar is a founding member of IRENA's multi-stakeholder Coalition for Action which works to dispel common misperceptions and factual inaccuracies about renewable energy.
- **NSF 457 Photovoltaic Module Sustainability Leadership Standard (NSF/ANSI 457- 2019):** First Solar is part of the Joint Committee which developed NSF 457, the industry's first Sustainability Leadership Standard for PV modules and inverters. PV modules and inverters conforming to NSF 457 are added to the EPEAT registry for sustainable electronics.
- **RE100:** First Solar joined RE100 in 2020 and committed to powering our global operations with 100% renewable energy by 2028. RE100 is a global initiative dedicated to accelerating the shift to zero-carbon grids, led by The Climate Group in partnership with CDP.
- **Responsible Business Alliance (RBA):** First Solar joined the RBA in 2021 as a regular member to build on our track record of responsible sourcing. The RBA is the world's largest industry coalition dedicated to supporting the rights and well-being of workers and communities in the global supply chain. First Solar is the first of the world's largest top ten PV manufacturers to join the RBA.
- **Ultra Low-Carbon Solar Alliance (ULCSA):** First Solar is a founding member of the ULCSA, an alliance of companies across the solar PV value chain committed to expanding market awareness and deployment of ultra low-carbon PV to accelerate reductions in solar supply chain GHG emissions.



# About this Report.

## About this Report

First Solar's Sustainability Report was developed in accordance with the Global Reporting Initiative's (GRI) Core Sustainability Reporting Standards. This report covers significant economic, social and environmental impacts associated with our global operations. Our sustainability reporting scope focuses on our manufacturing, R&D and recycling operations' impacts. Unless otherwise specified, this report includes environmental performance data from all of First Solar's manufacturing plants and our major R&D facility. The reporting period spans 1 January 2021 up to and including 31 December 2021. We have not sought third-party verification for this report; however, our greenhouse gas emissions inventories of Scope 1 and Scope 2 sources were externally verified in 2022 with limited assurance. First Solar's GHG emissions inventory is externally verified on a triennial basis with the International Standard ISO 14064 Part 3 (ISO 14064-3) as well as the WRI/WBCSD GHG Protocol.

**To provide feedback on our Sustainability Report, please contact:**

[Sustainability@firstsolar.com](mailto:Sustainability@firstsolar.com)

## Sustainability Materiality Assessment

As part of our stakeholder mapping and materiality assessment process, First Solar conducts a survey with our external-facing departments including business development, government affairs, and investor relations, to identify key aspects that significantly impact our company and our stakeholders, both within and outside our organization. First Solar's stakeholders were prioritized according to their ability to significantly influence or be significantly impacted by our company.

Our 2021 sustainability materiality assessment builds on the results from our 2020 survey and interviews with internal and external stakeholders including associates, management, customers and investors. In addition to the survey results and interviews, we leverage the PV industry's sustainability leadership standard (NSF/ANSI 457 – 2019) which identified relevant corporate reporting criteria for the PV industry through a multi-stakeholder process led by NSF International and the Global Electronics Council.

As part of our efforts to move towards more dynamic materiality assessments, First Solar's ESG focus leaders and other internal experts review and refresh the company's materiality map on a biannual basis. This cross-functional ESG taskforce is also responsible for identifying strategic ESG risks, opportunities, gaps and challenges, anticipating ESG trends that could impact the company, and proposing new ESG policies, practices, targets, metrics and disclosures.

The material topics were mapped out based on their importance to First Solar’s business objectives and their impact on stakeholders’ decisions. As part of the dynamic materiality refresh, responsible sourcing and human rights, public policy, data privacy and protection, and talent attraction were all elevated in importance and supply chain resilience was added as a material topic. The material topics included in the upper right quadrant represent First Solar’s approach to Responsible Solar which helps to competitively differentiate the company and create long-term value.



## Stakeholder Engagement

First Solar engages with various stakeholder groups including employees, customers, industry associations, NGOs, local communities, scientific organizations, media, investors and shareholders. The following chart depicts First Solar's approach to stakeholder engagement; including frequency of engagement by type and stakeholder group, along with key topics and concerns raised:

Stakeholder Groups	How we Engage	Engagement Frequency	Key Topics and Concerns
<b>Employees</b>	Training Sessions, Meetings, Newsletters, Surveys, Global Webcasts, Sustainability Ambassador program	Daily, ongoing basis	<ul style="list-style-type: none"> <li>• Circular Economy</li> <li>• Community Impact</li> <li>• Energy &amp; Emissions</li> <li>• Environmental compliance &amp; eco-efficiency</li> <li>• Labor practices</li> <li>• Talent attraction &amp; retention</li> <li>• Training &amp; education</li> </ul>
<b>Customers/ Technical Advisors</b>	Meetings, Seminars & Conferences, Technical Workshops, Product Presentations	Ongoing basis	<ul style="list-style-type: none"> <li>• Circular economy</li> <li>• Data security &amp; privacy</li> <li>• Economic performance</li> <li>• Energy &amp; emissions</li> <li>• Environmental compliance &amp; eco-efficiency</li> <li>• Hazardous materials</li> <li>• Public policy</li> <li>• Quality &amp; reliability</li> <li>• Responsible sourcing &amp; human rights</li> <li>• Sustainable products &amp; innovation</li> </ul>
<b>Investors/ Shareholders</b>	Meetings, Earnings Calls, Analyst Days, NSF 457 standard development	Quarterly/ annually, ongoing basis	<ul style="list-style-type: none"> <li>• Economic performance</li> <li>• Energy &amp; emissions</li> <li>• Inclusion, diversity &amp; belonging</li> <li>• Governance &amp; accountability</li> <li>• Labor practices</li> <li>• Responsible sourcing &amp; human rights</li> </ul>
<b>Local Communities</b>	Meetings & Town Councils, Presentations to Community Organizations, School Visits, Local Tours, Training Programs	Ongoing basis	<ul style="list-style-type: none"> <li>• Circular economy</li> <li>• Community Impact</li> <li>• Environmental compliance &amp; eco-efficiency</li> <li>• Health &amp; safety</li> <li>• Job creation</li> <li>• Quality &amp; Reliability</li> </ul>

<p><b>Government/ Regulators</b></p>	<p>Meetings &amp; Hearings, Conference Presentations, Seminars &amp; Workshops, Committees, Tax Audits</p>	<p>Ongoing basis</p>	<ul style="list-style-type: none"> <li>• Circular economy</li> <li>• Community Impact</li> <li>• Economic performance</li> <li>• Energy &amp; emissions</li> <li>• Environmental compliance &amp; eco-efficiency</li> <li>• Ethics &amp; compliance</li> <li>• Hazardous materials</li> <li>• Public policy</li> <li>• Quality &amp; reliability</li> </ul>
<p><b>NGOs</b></p>	<p>External Surveys, Partnerships, Group Meetings, Workshops, standards development</p>	<p>Ongoing basis, annually</p>	<ul style="list-style-type: none"> <li>• Circular economy</li> <li>• Community impact</li> <li>• Environmental compliance &amp; eco-efficiency</li> <li>• Hazardous materials</li> <li>• Health &amp; safety</li> <li>• Job creation</li> <li>• Labor practices</li> <li>• Responsible sourcing &amp; human rights</li> <li>• Sustainable products &amp; innovation</li> </ul>
<p><b>Scientific Community</b></p>	<p>Conferences, Workshops, Meetings, Working Groups, Technical Seminars, Collaboration, Peer Reviews, standards development</p>	<p>Ongoing basis, annually</p>	<ul style="list-style-type: none"> <li>• Circular economy</li> <li>• Energy &amp; emissions</li> <li>• Environmental compliance &amp; eco-efficiency</li> <li>• Health &amp; safety</li> <li>• Raw material availability</li> <li>• Responsible sourcing &amp; human rights</li> </ul>

## Key Performance Indicators

Key Performance Indicators	2020	2021	Boundary	GRI	SASB	NSF 457
Net Sales (\$ Billion)	2,711	2,923	Global (Equity Share)	102-7		
Total Modules Produced (Millions)	15.6	17.6	Manufacturing	102-7		11.2.1
Total Gigawatts Produced (GW)	6.1	7.9	Manufacturing	102-7	RR-ST-000.A	11.2.1
Current/Future Revenue from Activities Aligned with EU Taxonomy (%)	100%	100%	Global	--		
Total Scope 1 and 2 GHG Emissions (Metric Tons CO <sub>2</sub> eq)	502,271	560,210	Global (Equity Share)	305-1 & 2		
Scope 1 GHG Emissions (Metric Tons CO <sub>2</sub> eq)	7,037	8,536	Global (Equity Share)	305-1		11.2.1
Scope 2 GHG Emissions (Metric Tons CO <sub>2</sub> eq)	495,234	551,674	Global (Equity Share)	305-2		11.2.1
Scope 3 GHG Emissions (Metric Tons CO <sub>2</sub> eq)	1,611,180	1,985,479	Supply Chain	305-3		
GHG Emissions Intensity (Scope 1 and Scope 2 Metric Tons CO <sub>2</sub> per Megawatt Produced)	82	71	Global (Equity Share)	305-4		11.2.2
Total Electricity Consumption (MWh)	841,976	959,672	Global (Equity Share)	302-1		
Consumption of Purchased Non-Renewable Electricity (MWh)	834,804	952,500	Global (Equity Share)	302-1		
Consumption of Self-Generated Renewable Electricity- Solar (MWh)	7,172	7,172	Manufacturing and Recycling	302-1	RR-ST-130a.1	
Total Fuel Consumption From Non-Renewable Sources (MWh)	26,084	30,426	Global (Equity Share)	302-1		
Natural Gas	25,798	30,131	Global (Equity Share)	302-1		
Diesel/Gas oil	156	255	Global (Equity Share)	302-1		
Motor Gasoline	130	40	Global (Equity Share)	302-1		
Total Energy Consumption (MWh)	868,060	990,098	Global (Equity Share)	302-1		
Manufacturing Energy Consumption (MWh)	795,915	940,514	Manufacturing	--	RR-ST-130a.1	11.2.1
Manufacturing Energy Intensity (kWh per Watt Produced)	0.13	0.12	Manufacturing	302-3		11.2.1
Total Waste Generation (Metric Tons)	45,076	52,709	Manufacturing	306-3		11.2.1
Non-Hazardous Waste Generated (Metric Tons)	38,440	45,983	Manufacturing	306-3		
Hazardous Waste Generated (Metric Tons)	6,636	6,726	Manufacturing	306-3		
Waste Diverted from Disposal	36,399	43,591	Manufacturing	306-4		
Recycled Non-Hazardous (Metric Tons)	35,025	43,220	Manufacturing	306-4		11.2.1
Recycled Hazardous (Metric Tons)	1,374	371	Manufacturing	306-4	RR-ST-150a.1	11.2.1
Waste Directed to Disposal	8,677	9,118	Manufacturing	306-5		
Disposed Non-Hazardous (Metric Tons)	3,415	2,763	Manufacturing	306-5		11.2.1
Disposed Hazardous (Metric Tons)	5,262	6,355	Manufacturing	306-5	RR-ST-150a.1	11.2.1

Manufacturing Waste Intensity (Grams per Watt Produced)	7.4	6.7	Manufacturing	--		
Total Water Withdrawals (Megaliters)	3,655	3,392	Manufacturing, Recycling and R&D	303-3	RR-ST-140a.1	11.2.1
Manufacturing Water Intensity (Liters per Watt Produced)	0.60	0.41	Manufacturing	--		
Total Water Recycled or Reused (Megaliters)	290	268	Manufacturing, Recycling and R&D	--		11.2.2
Water withdrawn in water stressed areas (%)	0.005%	0.03%	Manufacturing, Recycling and R&D	303-3	RR-ST-140a.1	11.2.2
Total Wastewater Discharge (Megaliters)	1,353	1,629	Manufacturing, Recycling and R&D	303-4		
Wastewater Generation Intensity (Liters per Watt produced)	0.22	0.21	Manufacturing, Recycling and R&D	--		
Recycled input materials used (%)	4-10.5%	4-10.5%	Semiconductor material	301-2	RR0102-10	11.2.1
Total Number of Associates	5,111	4,833	Global	102-7		
First Solar Global Recordable Injury Rate (per 200,000 hours)	0.46	0.52	Global	403-9		11.2.1
First Solar Manufacturing Recordable Injury Rate (per 200,000 hours)	0.48	0.56	Global			
First Solar Global Lost Time Injury Rate (per 200,000 hours)	0	0.15	Global	403-9		
Number and Rate of Work-Related Fatalities	0	0	Global	403-9		11.2.1
Number and Rate of High-Consequence Work-Related Injuries	0	0	Global	403-9		
Total hours worked	12,917,560	10,849,505	Global	403-9		
% Male Workforce	80%	81%	Global	405-1		
% Female Workforce	19%	19%	Global	405-1		
% Non-Disclosed Gender Workforce	1%	0%	Global	405-1		
% Male Management	80%	77%	Global	405-1		
% Female Management	19%	23%	Global	405-1		
% Non-Disclosed Gender Workforce	1%	0%	Global	405-1		
New Hires by Gender (% Male)	77%	81%	Global	401-1		
New Hires by Gender (% Female)	22%	17%	Global	401-1		
New Hires by Gender (% Non-Disclosed)	1%	2%	Global	401-1		
Associate Turnover Rate by Gender (% Male)	26%	18%	Global	401-1		
Associate Turnover Rate by Gender (% Female)	5%	6%	Global	401-1		
ISO 14001 Certification of Mfg. %	100%	100%	Global	--		
ISO 45001 Certification of Mfg. %	100%	100%	Global	--		
PV panel recycling program in place	Yes	Yes	Global	--		11.2.2

**Notes:**

– Associate Turnover Rate is calculated as a percent of the total workforce as of December 31 of the previous reporting year. Data includes voluntary and involuntary turnover. Involuntary turnover in 2021 amounted to 11%.

## GRI Content Index

Disclosure Number	General Disclosures	Cross-Reference
102-01	Name of the organization	First Solar Inc.
102-02	Products and services and activities	Annual Report and 10-K
102-03	Location of headquarters	350 W Washington St #600, Tempe, AZ 85281, United States
102-04	Location of operations	About First Solar
102-05	Ownership and legal form	Annual Report and 10-K
102-06	Markets served	Annual Report and 10-K
102-07	Scale of the organization	Working at First Solar
102-08	Information on employees and workers	Working at First Solar
102-09	Description of supply chain	Supply Chain Overview
102-10	Significant changes to organization and its supply chain	Annual Report and 10-K
102-11	Precautionary principle or approach	Change Management System and EHS Peer Reviews
102-12	External initiatives	External Sustainability Initiatives
102-13	Membership of Associations	CDP Climate Change Response
102-14	Statement from senior decision-maker	Message from the CEO
102-15	Key impacts, risks and opportunities	Annual Report and 10-K
102-16	Values, principles, standards and norms of behavior	Our Culture and Ethical Business Conduct
102-17	Mechanisms for advice and concerns about ethics	<a href="#">Ethics Hotline</a>
102-18	Governance structure	Governance
102-40	List of stakeholder groups	Stakeholder Engagement
102-41	Collective bargaining agreements	Collective Bargaining and Freedom of Association
102-42	Identifying and selecting stakeholders	Stakeholder Engagement
102-43	Approach to stakeholder engagement	Stakeholder Engagement
102-44	Key topics and concerns raised	Stakeholder Engagement
102-45	Entities included in the organization's consolidated financial statements	Annual Report and 10K
102-46	Defining report content and topic boundaries	About this Report
102-47	List of material topics	Sustainability Materiality Assessment
102-48	Restatements of information	Our 2018- 2020 greenhouse gas emissions inventory was adjusted based on the latest market-based grid electricity emissions factor for Vietnam. As a result of the change in emission factor, our company-wide Scope 2 emissions increased from 344,697 to 495,234 metric tons CO <sub>2</sub> -eq in 2020.
102-49	Changes in reporting	About this Report
102-50	Reporting period	January 1, 2021- December 31, 2021
102-51	Date of most recent report (if any)	July 30, 2021
102-52	Reporting cycle	Annual
102-53	Contact	<a href="mailto:sustainability@firstsolar.com">sustainability@firstsolar.com</a>
102-54	"In accordance" option	Core
102-55	GRI Content Index	GRI Content Index
102-56	External assurance	About this Report

Material Topic	GRI Standards	Description	Cross-reference	NSF 457 Standard
<b>Economic Performance</b>	201-01	Direct economic value generated and distributed	Annual report and 10K	
<b>Economic Performance</b>	201-02	Risks and opportunities due to climate change	CDP Climate Change Response	
<b>Procurement Practices</b>	204-01	Proportion of spending on local suppliers	Supply Chain Overview	
<b>Materials</b>	301-02	Recycled input materials used	KPI Chart	Required
<b>Energy</b>	302-01	Energy consumption within the organization	KPI Chart	Required
<b>Energy</b>	302-03	Energy intensity	KPI Chart; Environmental metrics	Required
<b>Energy</b>	302-04	Reduction of energy consumption	CDP Climate Change Response	Optional
<b>Water</b>	303-3	Total water withdrawal	KPI Chart	Required
<b>Water</b>		Percentage of water recycled and reused	KPI Chart; Environmental metrics; CDP Water response	Optional
<b>Effluents</b>	303-04	Total water discharge by quality and destination	CDP Water response	
<b>Emissions</b>	305-01	Direct greenhouse gas (GHG) emissions (Scope 1)	KPI Chart; Environmental metrics	Required
<b>Emissions</b>	305-02	Indirect GHG emissions (Scope 2)	KPI Chart; Environmental metrics	Required
<b>Emissions</b>	305-04	GHG emissions intensity	KPI Chart; Environmental metrics	
<b>Effluents and Waste</b>	306-03	Breakdown of waste generated	KPI Chart; Environmental metrics	Optional
<b>Environmental Compliance</b>	307-01	Non-compliance with environmental laws and regulations	Environmental metrics	Required
<b>Supplier Environmental Assessment</b>	308-01	New suppliers that were screened using environmental criteria	Supply Chain Overview	Optional
<b>Supplier Environmental Assessment</b>	308-02	Negative environmental impacts in the supply chain and actions taken	Supply Chain Overview	Optional
<b>Occupational Health and Safety</b>	403-01	Workers representation in formal joint management–worker health and safety committees	Occupational Health and Safety	Optional
<b>Occupational Health and Safety</b>	403-09	Work-related injuries	Occupational Health and Safety	Required
<b>Supplier Social Assessment</b>	414-01	New suppliers that were screened using social criteria	Occupational Health and Safety	Optional
<b>Supplier Social Assessment</b>	414-02	Negative social impacts in the supply chain and actions taken	Supply Chain Overview	Optional



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