

### Module: Introduction

#### Page: Introduction

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#### 0.1

##### **Introduction**

Please give a general description and introduction to your organization

Founded in 1985, SunPower Corp. (Nasdaq: SPWR) designs, manufactures and delivers the planet's most powerful solar photovoltaic (PV) technology broadly available today. Residential, business, government and utility customers rely on the company's experience and proven results to maximize return on investment. With headquarters in San Jose, California, SunPower has offices in North America, South America, Europe, Australia and Asia.

SunPower's solar cells and solar panels are manufactured using proprietary processes, and their technologies are based on more than 25 years of research and development. Of all the solar cells available for the mass market, SunPower believes their solar cells have the highest conversion efficiency, a measurement of the amount of sunlight converted by the solar cell into electricity.

Replacing fossil-based energy such as electricity produced from coal-fired power plants significantly reduces carbon dioxide (CO<sub>2</sub>), which could help companies and/or countries comply with regulatory schemes like cap and trade. Every megawatt (MW) of solar cell capacity that SunPower deploys is a carbon-free MW, which is replacing or offsetting the need for other power sources that are not likely to be as climate friendly. SunPower has set a global goal to have a total of 10 gigawatts (GW) of SunPower solar systems deployed by 2016. This represents a 10,000% increase over 2007, and once achieved, equates to approximately 10,211,000 metric tonnes of carbon dioxide equivalents (CO<sub>2</sub>e) avoided per year.

SunPower's solar power products are sold through their global residential dealer network as well as their direct sales forces in both the commercial roof top and power plant channels, all on a regional focused basis. SunPower's customers include commercial and governmental entities, investors, electric utilities, independent power producers, production home builders and homeowners. SunPower works with development, construction, system integration and financing companies to deliver their solar power systems to customers.

SunPower's solar power systems are designed to generate electricity over a system life typically exceeding 25 years and are principally designed to be used in large-scale applications with system ratings of typically more than 500 kilowatt alternating current (KWac). Worldwide, SunPower has deployed more than 2.5 GW of solar systems and more than 1,000 MW of cost-competitive, large-scale solar power systems worldwide. SunPower sells solar systems and technology in Europe, North America, South America, Africa, Asia and Australia. The company sells distributed rooftop and ground-mounted solar systems as well as central-station power plants around the globe. SunPower's customers range in scale from small businesses that install their solar systems on residential roofs, to commercial customers who install large solar roof systems, to utilities and independent power producers that own central station power plants. Power generation

using SunPower solar cells typically deliver solar power to the local grid through long-term power purchase agreements (PPAs) or under regulated tariffs.

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## 0.2

### Reporting Year

Please state the start and end date of the year for which you are reporting data.

The current reporting year is the latest/most recent 12-month period for which data is reported. Enter the dates of this year first.

We request data for more than one reporting period for some emission accounting questions. Please provide data for the three years prior to the current reporting year if you have not provided this information before, or if this is the first time you have answered a CDP information request. (This does not apply if you have been offered and selected the option of answering the shorter questionnaire). If you are going to provide additional years of data, please give the dates of those reporting periods here. Work backwards from the most recent reporting year.

Please enter dates in following format: day(DD)/month(MM)/year(YYYY) (i.e. 31/01/2001).

Enter Periods that will be disclosed
Sun 01 Jan 2012 - Mon 31 Dec 2012

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## 0.3

### Country list configuration

Please select the countries for which you will be supplying data. This selection will be carried forward to assist you in completing your response

Select country
Australia
Belgium
China
France
Greece

Select country
Germany
Italy
Israel
Philippines
Japan
South Korea
Malaysia
Switzerland
Spain
United Kingdom
United States of America
Mexico

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#### 0.4

##### **Currency selection**

Please select the currency in which you would like to submit your response. All financial information contained in the response should be in this currency.

USD(\$)

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#### 0.6

##### **Modules**

As part of the request for information on behalf of investors, electric utilities, companies with electric utility activities or assets, companies in the automobile or auto component manufacture sectors, companies in the oil and gas industry and companies in the information technology and telecommunications sectors should complete supplementary questions in addition to the main questionnaire.

If you are in these sectors (according to the Global Industry Classification Standard (GICS)), the corresponding sector modules will not appear below but will automatically appear in the navigation bar when you save this page. If you want to query your classification, please email [respond@cdproject.net](mailto:respond@cdproject.net).

If you have not been presented with a sector module that you consider would be appropriate for your company to answer, please select the module below. If you wish to view the questions first, please see <https://www.cdproject.net/en-US/Programmes/Pages/More-questionnaires.aspx>.

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#### **Further Information**

## Forward-Looking Statements

This report contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are statements that do not represent historical facts and may be based on underlying assumptions. SunPower uses words and phrases such as “goal,” “objectives,” “will,” “intends,” “continue to,” “strives,” “plan,” “targeting,” “anticipates,” “on track,” “likelihood,” “could,” “expect,” “well positioned” and similar expressions to identify forward-looking statements in this report, including forward-looking statements regarding: (a) expected growth of the company, market penetration and GW of solar systems installed by SunPower in the future; (b) adoption of regulations and policies that benefit solar energy and SunPower and the success of the company’s engagement with policy makers; (c) anticipated development of higher efficiency SunPower PV products; (d) anticipated production capacity of Fab 3; (e) financial support of Total, ability to grow the company’s market position, and being well positioned for long term growth and achieving its business objectives; (f) growth of renewable energy worldwide; and (g) the company’s success in climate change mitigation and reaching its plan for reduction of its carbon footprint. Such forward-looking statements are based on information available to the company as of the date of this report and involve a number of risks and uncertainties, some beyond the company’s control, that could cause actual results to differ materially from those anticipated by these forward-looking statements, including risks and uncertainties such as: (i) the impact and timing of regulatory changes and the continuation of governmental and related economic incentives promoting the use of solar power; (ii) ability to achieve the expected growth from the Total investment; (iii) increasing competition in the industry and lower average selling prices; (iv) ability to obtain and maintain an adequate supply of raw materials, components, and solar panels; (v) general business and economic conditions, including seasonality of the solar industry and growth trends in the solar industry; (vi) ability to increase or sustain its growth rate; (vii) construction difficulties or potential delays, including obtaining land use rights, permits, license, other governmental approvals, and transmission access and upgrades, and any litigation relating thereto; (viii) the significant investment required to construct power plants and the company’s ability to sell or otherwise monetize power plants; (ix) the availability of financing arrangements for the company’s utilities projects and the company’s customers, and success of the residential leasing program; (x) potential difficulties associated with operating the joint venture and ramping Fab 3 according to plan; (xi) ability to remain competitive in its product offering; (xii) the company’s liquidity, substantial indebtedness, and its ability to obtain additional financing; (xiii) manufacturing difficulties that could arise; (xiv) the success of the company’s on-going research and development efforts and the acceptance of the company’s new products and services; (xv) failure to meet the company’s carbon footprint reduction plans; (xvi) the company’s ability to protect its intellectual property; and (xvii) other risks described in the company’s Annual Report on Form 10-K for the year ended January 1, 2013, Quarterly Report on Form 10-Q for the quarter ended April 1, 2013 and other filings with the Securities and Exchange Commission. These forward-looking statements should not be relied upon as representing the company’s views as of any subsequent date, and the company is under no obligation to, and expressly disclaims any responsibility to, update or alter its forward-looking statements, whether as a result of new information, future events or otherwise.

## Module: Management [Investor]

### Page: 1. Governance

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#### 1.1

#### **Where is the highest level of direct responsibility for climate change within your company?**

Individual/Sub-set of the Board or other committee appointed by the Board

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1.1a

**Please identify the position of the individual or name of the committee with this responsibility**

President and Chief Executive Officer

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1.2

**Do you provide incentives for the management of climate change issues, including the attainment of targets?**

Yes

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1.2a

**Please complete the table**

<b>Who is entitled to benefit from these incentives?</b>	<b>The type of incentives</b>	<b>Incentivized performance indicator</b>
All employees	Recognition (non-monetary)	The Performance Indicators for Monetary Reward and recognition incentives are the same.
All employees	Monetary reward	Support carbon reduction projects and initiatives to achieve corporate sustainability goals. Implement electricity and fuel reduction projects to achieve 5% reduction Year Over Year.
Corporate executive team	Recognition (non-monetary)	The Performance Indicators for Monetary Reward and recognition incentives are the same.
Corporate executive team	Monetary reward	Achieve carbon reduction goals and implement 2013 Project Action Plans.

**Page: 2. Strategy**

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2.1

**Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities**

Integrated into multi-disciplinary company wide risk management processes

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## 2.1a

### **Please provide further details**

SunPower assesses risk associated with climate change through five key actions:

1. The subject of climate change mitigation strategies and the impact of carbon cap and trade legislation is a topic of discussion at quarterly executive strategy meetings where corporate executives discuss long-term objectives and appropriate steps to be taken over each fiscal quarter to achieve these objectives.
2. SunPower's Market Development and Public Policy Team is responsible for engaging in policy discussions around climate change in the US and reporting the up-to-date status of proposed state and federal climate change and renewable energy legislation and policy.
3. SunPower has an Executive Risk Committee which is dedicated to assessing the risks associated with the development and operation of solar systems, manufacturing, and general corporate operations. Stakeholder requirements and expectations pertaining to sustainability and addressing climate change are part of the risk assessment conducted by this committee.
4. When assessing risk to the business which may need to be reported in the annual 10K filing to the Securities and Exchange Commission, SunPower considers and assesses risk associated with climate change and other environmental issues.
5. SunPower has engaged consulting firms specializing in climate change and greenhouse gas (GHG) emissions to assist with the identification of risks and opportunities associated with climate change and to enhance the comprehensiveness and accuracy of the company's GHG inventory.

SunPower incorporates climate change risk assessment on a systemic level into its risk management and business operations. For example, the assessment of climate change impacts and climatic variation is an integral component of the evaluation criteria used in SunPower's review of potential site expansions, amongst other criteria that include economics, human labor, natural resources, security and safety. With the help of FM Global, a global commercial and insurance company, SunPower assesses specific risks of potential facility sites, and then to safeguard against loss, develops loss prevention strategies and facility development plans that exceed local standards. As a result, the company has identified and mitigated potential issues upfront, thereby reducing exposure to business interruption.

SunPower considers a proactive risk management strategy to be an integral component of being an industry leader in the responsible management of the social and environmental impacts of its operations across its entire value chain. To advance comprehensive sustainability performance of the solar industry, SunPower in conjunction with the Solar Energy Industries Association (SEIA) has developed the Commitment for Environmental and Social Responsibility ("the Commitment"). The Commitment defines common practices and expectations for all solar industry participants, including manufacturers, suppliers, subcontractors, and customers in the solar value chain. The Commitment encourages Participants to go beyond legal compliance, drawing upon internationally recognized standards, to advance social and environmental responsibility. SunPower publicly endorsed the Commitment statement of the SEIA in March of 2012 and has begun reaching out to the supply chain to collect qualitative data. As the program matures, SunPower has plans to start collecting quantitative data in 2013. This will become a venue to share, inform, and communicate further with suppliers about social and environmental responsibility.

Another example of Sun Power's proactive risk management is their management of returned and end of life solar panels via the development of a "Return, Reuse

and Recycle” program. This program includes a 25-year warranty that provides for customers to return SunPower products at no cost and then find new applications for the products through the recycling network. For example, those panels that safely generate power that are ineligible for customer sale due to cosmetic defects or for not meeting particular specifications are redeployed on SunPower and partner facilities, employee purchase program, SunPower Foundation projects and other opportunities.

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## 2.2

### **Is climate change integrated into your business strategy?**

Yes

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## 2.2a

### **Please describe the process and outcomes**

SunPower believes that the largest contributions the company can make toward global efforts to avoid severe climate change consist of three primary actions:

1. Continued engagement in solar and renewable energy policy development – SunPower has been and will continue to engage in renewable energy policy discussion at a global scale. Through this participation, SunPower intends to help shape policy and contribute to the growth in demand for clean sources of energy as a means to facilitate economic growth and addressing climate change impacts.

2. Improving the efficiency of SunPower solar cells – SunPower continues to develop new generations of higher efficiency solar cells. SunPower’s mono-crystalline solar cells have held commercial production conversion efficiency world records from their A300’s product series world record of 20.6% in 2005 to the current Maxeon product series world record of 24.2% today. SunPower continues to invest in research and development (R&D) and the company expects to continue to develop world record efficiency production products. SunPower strives to be the world leader in commercial product efficiency, that is, the generation of the most power per-square-unit-of measure for solar panels. Developing higher levels of product efficiency improves cost effectiveness, which paves the way for increased market penetration. Every MW of solar cell capacity that SunPower deploys is a carbon-free MW, which is replacing or offsetting the need for other power sources that are not likely to be as climate friendly.

SunPower is also engaged in product life cycle assessment (LCA) as a basis to the Carbon Footprint and lifetime energy harvest studies of its products, to develop measurable results and dependable equations which can help the industry better understand the environmental impacts. These results may serve as an additional quantitative basis to differentiate SunPower products from its competitors, based on high-efficiency, reliability and manufacturing quality. This renewable energy and carbon footprint work is being performed with world renowned partners, both in photovoltaics and energy production LCA.

3. Achieving market and capacity growth – To compliment efforts to drive demand and improve efficiency, SunPower has put into place a strategic plan for growth in order to achieve increased penetration in the global power market. Since 2007, SunPower has increased production of solar panels by over 800%. SunPower is targeting growth in North America, Europe, and Asia, and aligning growth plans with regional commitments for the deployment of solar energy. An example of aligning SunPower’s projected growth with company values is that an overriding criterion for choice of a factory site is the availability of a renewable energy source. Not only will this choice increase renewable energy demand, it will be offsetting SunPower’s operations and reducing its carbon footprint. SunPower has set a global

goal to have a total of 10 GW of SunPower solar systems deployed by 2016. This represents a 10,000% increase over 2007, and once achieved, equates to approximately 10,211,000 metric tonnes of carbon dioxide equivalent avoided per year.

SunPower continues to produce more solar capacity annually. As a result, SunPower's absolute Scope 1 and Scope 2 emissions have grown but are being offset by improvements in efficiency throughout SunPower's facilities and products. SunPower is proactive in reducing its own carbon footprint. To achieve this, SunPower has incorporated the company's own solar products as well as other energy efficiency measures into the design of their own buildings. SunPower anticipates doing the same for future facilities, thus reducing the amount of energy required to produce SunPower products on a per MW basis. As SunPower achieves these efficiency gains, the carbon intensity per unit of product will continue to decrease. SunPower conducts ongoing analysis of the growth and the expected impacts of the facility and product efficiency plans. SunPower has incorporated these considerations into an aggressive carbon reduction strategic road map.

SunPower is working toward responsible site development and remodeling practices. The company has embraced the United States Green Building Council (USGBC) Leadership in Energy & Environmental Design (LEED) standards. Certification has been completed at a number of the company's manufacturing facilities and at the new headquarters complex in San Jose. In addition, SunPower through the company's Green Team has promoted awareness around energy efficient behavior and more broadly around sustainability at each of their manufacturing and office operations.

Many of SunPower's sustainability-related goals integrate climate change mitigation into their business strategy. SunPower's product sustainability goals include expansion and advancement of the network of recyclers to support the commitment of responsible management of the end-of-life of their products; expansion of their Return and Reuse program to leverage the reuse of their product; calculating the full life cycle GHG emissions of products (polysilicon through end-of-life); and, the promulgation of a Supplier Code of Conduct. SunPower's operations' sustainability goals also include striving to reduce total water consumption per MW solar capacity produced by 5% annually. SunPower's employee sustainability goals include expansion of their Green Team from Richmond, California to other key facilities around the world, and reducing the corporate-wide injury rate (IR) of 0.25 incidents per 100 employees and lost work day case rate (LWDCR) of 0.09 per year. SunPower's community sustainability goals include aligning SunPower Citizenship metrics/tracking with UN Millennium Development Goals (MDGs), and engaging 70% of their employees around the world in volunteer activities.

In addition to the sustainability goals outlined above, SunPower recognizes the company's social and environmental responsibilities. One policy outlines the commitment that no forced, bonded or prison labor is used in the production, installation, transportation or end-of-life treatment of SunPower products or services, either directly or indirectly. A second policy – the Waste Export Policy – outlines SunPower's commitment to conducting business in a manner that promotes a safe, clean and green environment by not exporting end-of-life PV Panels to developing countries from developed countries. Embedding sustainability throughout SunPower's business operations is consistent with SunPower's risk management strategy focus on business continuity.

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2.2b

Please explain why not

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2.3

**Do you engage in activities that could either directly or indirectly influence policy on climate change through any of the following? (tick all that apply)**

Direct engagement  
Trade associations

Other

2.3a

On what issues have you been engaging directly?

Focus of legislation	Corporate Position	Details of engagement	Proposed solution
Cap and trade	Support	SunPower has supported AB32 and cap and trade. SunPower supported the "No on solar, I'm a solar YIMBY (yes, in my backyard)" campaign which helped contribute to the defeat of Proposition 23. This would have suspended the state's Global Warming Act of 2006 (AB 32) which requires GHG emissions to be reduced to 1990 levels by 2020.	SunPower supported the legislation with no exceptions.

2.3b

Are you on the Board of any trade associations or provide funding beyond membership?

Yes

2.3c

Please enter the details of those trade associations that are likely to take a position on climate change legislation

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to influence the position?
Solar Energy Industries Association (SEIA)	Consistent	SEIA promotes comprehensive climate and energy legislation nationally and internationally. Many of the policies that SEIA supports focus on reducing GHG emissions.	SunPower is an executive member of SEIA and chairs the taskforce for the Solar Industry Environment & Social Responsibility Commitment. This commitment is broadly intended to promote sustainability throughout the entire solar industry supply chain. In addition, SunPower works closely with the organization to

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to influence the position?
			create policy priorities and messaging, and to monitor legislation that affects the solar industry.
Silicon Valley Leadership Group (SVLG)	Consistent	SVLG supports AB32 and cap and trade in California.	SunPower works closely with SVLG to develop policy priorities and messaging, and to monitor legislation that affects the solar industry.
European Photovoltaic Industry Association (EPIA)	Consistent	EPIA broadly supports a climate and energy framework with a consistent focus on renewable energy, energy efficiency and emissions reductions to drive clean energy investments.	SunPower works closely with EPIA to develop policy priorities and messaging, and to monitor legislation that affects the solar industry.
BSW - Solar, Assolarre, ASIF, SER-SOLER, ENRPLAN, EDORA, Emirates Solar Industry Association (ESIA), PV CYCLE, Union Espanola Fotovoltaica (UNEF), Gruppo Imprese Fotovoltaiche Italiane (GIFI), Hellenic Association of Photovoltaic Companies (Helapco), Swissolar, AriSEIA, CalSEIA, CEERT, IREC, LSA, PV Coalition, SEPA, Vote Solar, ASES, Austin Chamber, GASEIA, Gulf Coast Power Association, HREA, MOSEIA, NCSEA, ACORE, CFEE, CoSEIA, GSREIA, NYSEIA, REMA, Puerto Rico Energy Cluster	Unknown	These 33 trade associations broadly promote the use of solar around the world in both countries where SunPower has offices and beyond.	SunPower works closely with all of the 33 trade associations for solar and renewable energy to develop policy priorities and messaging, and to monitor legislation that promotes the solar industry. This often includes support for low carbon technologies and climate change regulation.

2.3d

Do you publically disclose a list of all the research organizations that you fund?

2.3e

Do you fund any research organizations to produce public work on climate change?

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2.3f

Please describe the work and how it aligns with your own strategy on climate change

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2.3g

**Please provide details of the other engagement activities that you undertake**

SunPower regularly works with policy makers at the local, state and federal levels and is an active member of numerous industry associations to develop policy that supports climate change initiatives. SunPower works with all of these organizations to develop policy priorities and messaging, and to monitor legislation that affects the solar industry, including climate change. SunPower is fully engaged in the PV Cycle trade association for all recycling efforts, which aims to implement the industry's commitment to set up a comprehensive European voluntary take-back and recycling program for end-of-life solar panels. SunPower is working closely with other renewable energy generators and the gas industry in Europe towards a low carbon economy. Additionally, SunPower is working closely with local and national governments to explore policies that promote dual-use land for agriculture and solar power.

Finally, SunPower created the SunPower Foundation to help create and motivate solar energy leaders through education, awareness, and participation in community solar energy projects and programs. The foundation is a nonprofit organization working with partners globally to accelerate the move to renewable energy. We're driven by an appreciation of the environment and a desire to preserve it. Solar energy has the power to transform the way people around the world use electricity—improving our communities and our planet.

One example of the work we are doing is that the SunPower Foundation has begun a partnership with the One Million Lights Foundation. Together, we plan to support their goal of mission to improve the daily lives of children and adults by providing clean and healthy lighting. One Million Lights participated in Solar Maasai - our partnership with the American African Nuru Foundation. Replacing kerosene and candles in the home has an immediate impact on local and global air pollutants and health. We plan to launch our effort in five countries and expand over time.

<http://www.sunpower.org/>

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2.3h

**What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?**

At the request of SunPower's CEO, an Operations Review Meeting is held quarterly that includes a discussion on SunPower's risks and opportunities associated with climate change as well as the company's efforts to address its impact on climate change and other environmental concerns. Executive staff attends this meeting and consider emerging legislation as well as potential impacts on the business strategy. The Executive Risk Committee also assesses risks from the development and operation of solar systems, manufacturing, and general corporate operations. Issues of substantial significance are escalated to the Corporate Executive Board, and progress status reports are provided to the Board when specifically requested.

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2.3i

Please explain why you do not engage with policy makers

### Page: 3. Targets and Initiatives

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3.1

Did you have an emissions reduction target that was active (ongoing or reached completion) in the reporting year?

Intensity target

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3.1a

Please provide details of your absolute target

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions (metric tonnes CO2e)	Target year	Comment
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3.1b

**Please provide details of your intensity target**

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions	Target year	Comment
	Scope 1+2+3	100%	50%	Other: Metric tonnes CO2e per solar megawatt (MW) produced	2007	49980	2016	Intensity Target Name: "True North"

**3.1c**

**Please also indicate what change in absolute emissions this intensity target reflects**

ID	Direction of change anticipated in absolute Scope 1+2 emissions at target completion?	% change anticipated in absolute Scope 1+2 emissions	Direction of change anticipated in absolute Scope 3 emissions at target completion?	% change anticipated in absolute Scope 3 emissions	Comment
	Decrease		Decrease		Due to SunPower's business growth forecast for the next 5 years, accomplishing the 2016 GHG emissions and intensity reduction goal may have uncertain results for absolute emissions.

**3.1d**

**Please provide details on your progress against this target made in the reporting year**

ID	% complete (time)	% complete (emissions)	Comment
			In 2012, SunPower had a target to reduce energy 5% annually and a corporate GHG reduction goal. In the last year, the GHG intensity decreased by 4%. For the last two years, SunPower had the goal to reduce GHG by 50% from 2007 emissions

ID	% complete (time)	% complete (emissions)	Comment
			levels. SunPower reached its goal in 2012 and is in the process of resetting its new goal. In addition, SunPower has chaired the SEIA workgroup on the supplier code of conduct to track GHG emissions and the solar commitments of their suppliers. The supplier agreement was issued to suppliers for the first time in 2012 to monitor if actions across all of the five focus areas were being taken. Going forward, SunPower will start requesting quantitative data for the scorecard.

3.1e

Please explain (i) why not; and (ii) forecast how your emissions will change over the next five years

3.2

**Does the use of your goods and/or services directly enable GHG emissions to be avoided by a third party?**

Yes

3.2a

**Please provide details (see guidance)**

SunPower designs, manufactures and delivers solar cells and solar panels. SunPower's products and systems utilize solar photovoltaic technology to convert solar energy into electricity. The electricity generated by SunPower's products can be and is frequently used to offset the need for electricity generated from the combustion of fossil fuels, thus avoiding GHG emissions. SunPower's products and systems are used in residential applications, commercial building applications, and central power plant system applications to provide electricity in virtually every sector of the economy. SunPower's solar power systems are designed to generate electricity over a system life typically exceeding 25 years. The company has set a global goal to have a total of 10 GW of SunPower solar systems deployed by 2016. This represents a 10,000% increase over 2007, and once achieved, equates to approximately 10,211,000 metric tonnes of carbon dioxide equivalents avoided per year.

While the life cycle of many solar photovoltaic components is short as they move through the product life cycles, SunPower is proactively engaged in product development and distribution with service life of 25 years or more. SunPower is also active in initiatives to mitigate the impact of end-of-life panels.

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**3.3**

**Did you have emissions reduction initiatives that were active within the reporting year (this can include those in the planning and implementation phases)**

Yes

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**3.3a**

**Please identify the total number of projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings**

<b>Stage of development</b>	<b>Number of projects</b>	<b>Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)</b>
Under investigation		
To be implemented*		
Implementation commenced*	49	6808
Implemented*	19	1000
Not to be implemented		

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**3.3b**

**For those initiatives implemented in the reporting year, please provide details in the table below**

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Annual monetary savings (unit currency - as specified in Q0.4)	Investment required (unit currency - as specified in Q0.4)	Payback period
Energy efficiency: Building services	GenEx VFD Hz Reduction at Fab 2. Scope 2.	0.13	50		
Energy efficiency: Processes	Lighting Reduction at Fab 2. Scope 2. Scope 2.	0.24	40		
Energy efficiency: Processes	MAU Temperature Reduction at Fab 2. Scope 2.	0.15	25		
Energy efficiency: Building services	Lighting Replacement at WWTP and RODI from 250W to 40W at Fab 2. Scope 2.	13.09	2248		
Energy efficiency: Building services	CR and Canteen LED Lighting Replacement from 40W to 22W at Fab 2. Scope 2.	1.52	258		
Low carbon energy purchase	Solar Power Energy Generation at Modco. Scope 2.	40.88	8404		
Low carbon energy purchase	Solar Power Energy Generation at Modco. Scope 2.	44.59	9007		
Energy efficiency: Building services	Centralized Laminator Cooling System at Modco. Scope 2.	76.11	15375		
Energy efficiency: Building services	CT Blower Automation at Modco. Scope 2.	0.01	22		
Energy efficiency: Building services	Air Compressor # 2 as Base Load at Modco. Scope 2.	0.00	1		
Energy efficiency: Building fabric	Plastic Curtain Installation for the Loading Dock at Modco. Scope 1 & 2.	3.48	703		
Energy efficiency: Processes	Cooling Coil Replacement at Fab 3. Scope 1&2.	28.33	5721		
Process emissions reductions	Reduce CDA Supply Pressure at Fab 3. Scope 2.	584.62	118073		
Process emissions reductions	Shutdown of an Electric Boiler at Fab 3. Scope 2.	122.79	24798		
Low carbon energy purchase	Solar Power Energy Generation at Fab 3. Scope 2.	25.08	4587		
Energy efficiency: Building services	Compressed Air Pressure Reduction at Fab1. Scope 2.	6.42	1335		
Energy efficiency:	Chiller Condenser Approach Improvement - SPC	66.44	13808		

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Annual monetary savings (unit currency - as specified in Q0.4)	Investment required (unit currency - as specified in Q0.4)	Payback period
Building services	Graph Limits at Fab 1. Scope 2.				
Process emissions reductions	Eliminate Contingency Runs on Genset at Fab 1. Scope 1.	6.51	12233		
Low carbon energy purchase	Solar Installation on Building Roof at Fab 1. Scope 2.	5.06	1052		

### 3.3c

**What methods do you use to drive investment in emissions reduction activities?**

Method	Comment
Other	Internal Goals for Efficiency and Consumption Reduction: Process manufacturing equipment is minimized at both a recipe and quantity perspective by both continual experimentation and improvement activities to reduce consumption, thereby reducing emissions of SunPower's processes.
Other	Internal Efficiency Metrics: Facilities equipment have metrics on efficiency so that the decisions on capital investment from line to line, and factory to factory are continually improving toward sustainability goals and metrics.
Financial optimization calculations	Design aspects and approaches of the factory investments that are oriented towards cost reduction and sustainability improvements; the implementation of environmentally oriented programs such as LEED certifications; the implementation of heat exchange compressed dry air units to generate free heat and eliminate diesel boilers as well as the elimination of LPG usage altogether at SunPower's newest factory.

### 3.3d

**If you do not have any emissions reduction initiatives, please explain why not**

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**Further Information**

From all their existing and recently implemented projects, SunPower estimates that the benefits equate to a GHG emission reduction of 7,724 MTCO<sub>2</sub>e and \$1,490,000 savings in 2012. This reflects the success of SunPower's approach to sustainability. At SunPower, senior leadership members of the Sustainability Council are dedicated to the deployment and internal communication of the company's sustainability activities. The Council is chaired by the Executive Vice President of Administration, who reports directly to the President and CEO of SunPower (who is also a board member), on the progress and performance of climate change initiatives as well as other environmental and sustainability initiatives. The Council is responsible for SunPower's corporate climate change policy and programs. Specific responsibilities include setting the mission, vision and annual strategic plan for the company with relation to sustainability, and specifically, climate change. The Council is made up of 7 executives from a range of functional teams, as well as 3 sustainability experts who are all appointed by the Chair. The Council meets regularly and periodically reports to the Board of Directors. In addition to the Council, Sustainability Project Teams consist of cross-functional area representatives within SunPower that work within a specific business unit on key sustainability initiatives.

The Sustainability Council has developed a road map to reduce SunPower's carbon footprint, 80% of which is from SunPower's large factories. The Council has established staircase initiatives to achieve these reduction goals. Additionally, the Council set a corporate-wide GHG reduction goal in 2011 and presents the challenge to reduce SunPower's carbon footprint GHG emissions by 50% by 2016, based on 2007 levels on a carbon intensity basis measured per MW of PV manufactured. The company has reached its goal and is in the process of resetting it.

An employee driven team that is responsible for climate change initiatives at SunPower is the "The Green Team." The Green Team is sponsored by SunPower's Environmental, Health, Safety & Sustainability department and exists to ensure that SunPower is functioning in a sustainable manner with regards to internal and external operations. The Green Team is a volunteer-based endeavor. Within the Green Team, there are three sub-teams, Facilities, Communications, and one focused on R&D, Operations and IT. The Green Team also consists of a "Core Team" which meets monthly to monitor progress and to support the task teams. The Green Team has so far generated over 100 ideas for improving SunPower's environmental impact and carbon footprint, ranging from a composting machine to a Kill-a-Watt campaign and a monthly Greenbag lecture series. Another Green Team success was achieving a Green Business Certification at the Headquarters complex in San Jose, California site in 2012. In addition, the Green Team helped the office win grant money for a composting machine and the 2012 Bike Friendly Business Award (East Bay Bicycle Coalition).

**Page: 4. Communication**

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**4.1**

**Have you published information about your company's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s)**

Publication	Page/Section reference	Attach the document
No		

## Module: Risks and Opportunities [Investor]

### Page: 5. Climate Change Risks

#### 5.1

Have you identified any climate change risks (current or future) that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

Risks driven by changes in regulation

Risks driven by changes in physical climate parameters

Risks driven by changes in other climate-related developments

#### 5.1a

Please describe your risks driven by changes in regulation

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
CTax	Carbon taxes	Based on proposed regulations, SunPower's primary risk lies in the potential for carbon taxes being levied on goods imported to countries with such regulations. SunPower manufactures components to its products and the finished products in the Philippines, Malaysia, and Mexico, with contracted manufacturing in China and Poland. SunPower's current manufacturing plants are not directly affected by existing climate change regulations. SunPower is working closely with other renewable energy generators and the gas industry in Europe towards a low carbon economy. A low carbon economy could benefit SunPower by creating greater demand for their products. On a state level, California's AB 32 legislation, which requires California to lower greenhouse gas emissions to 1990	Increased operational cost	1-5 years	Direct	About as likely as not	Medium

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
		levels by 2020, is now in its implementation stage. This legislation creates further support for California renewable policies, including Governor Brown's solar agenda. SunPower does not believe it will have a material impact on its operations, but AB 32 does provide indirect institutional support for key policy measures that help drive solar sales in California, including the Renewable Portfolio Standard (RPS).					
RegUn	Uncertainty surrounding new regulation	The uncertainty with regard to climate change regulation and legislation makes capital planning challenging. Specifically, there is uncertainty surrounding new regulations with respect to locating manufacturing operations and building delivery channels. SunPower prefers to locate manufacturing and develop delivery channels in geographic areas close to areas of high demand for their products. Passage of climate change legislation in states and countries throughout the world is likely to increase demand for SunPower's product, thus potentially requiring newly located manufacturing facilities. The outcome of the multitude of proposed climate change policies is sure to affect SunPower's business, but the scale and magnitude is uncertain, making long-term planning a challenge.	Increased operational cost	6-10 years	Direct	Likely	Medium
EnReg	Fuel/energy taxes and regulations	Indirect exposure through suppliers and clients – In the event that any of the countries where SunPower operates adopt regulations which cap or tax carbon emissions, it is likely that the cost of raw materials and energy will increase. SunPower's raw materials include sand and quartz, which are mined and refined into poly-silicone. Due to the energy-intensiveness of mining and refining, both processes are parts of industries that have been proposed for inclusion in possible cap and trade schemes. In addition, many suppliers in the mining and refining industries commonly locate operations near abundant, reliable, low-cost energy. It is common for the major source of electricity generation in these regions to be coal, natural gas, or hydroelectric power; of which the first two are likely to be included in carbon tax or cap and trade schemes. If these industries receive carbon caps or taxes in the countries where SunPower procures raw materials, it is possible that the cost of	Increased capital cost	6-10 years	Indirect (Supply chain)	More likely than not	Medium

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
		raw materials could increase. These costs increases could result in lower margins for SunPower products or increased pricing of products, which could adversely affect sales growth. Additionally, as a global company, SunPower could face increased transportation costs related to supply chain and product delivery.					
CapTr	Cap and trade schemes	Cap and trade programs and new market mechanisms are expanding throughout the countries where SunPower manufactures and sells panels. There are a growing number of cap and trade programs including the established markets in Australia, California, Kazakhstan, New Zealand, Quebec, Tokyo, and the EU. In addition, seven provincial and city pilot trading schemes in Mainland China are now underway. At the same time, with grants from the World Bank, 16 countries are exploring new carbon market mechanisms including cap and trade as part of the Partnership for Market Readiness. The participants include Brazil, Chile, Columbia, Costa Rica, India, Indonesia, Jordan, Mexico, Morocco, Peru, South Africa, Thailand, Turkey, Ukraine, and Vietnam. As these schemes mature, they will increase energy costs and provide new markets for solar panels.	Increased operational cost	1-5 years	Direct	Likely	Medium
Renew	Renewable energy regulation	Regulation requiring increased use of renewable energy creates additional demand for SunPower products.	Other: Increased demand	6-10 years	Direct	More likely than not	High

### 5.1b

Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk and (iii) the costs associated with these actions

## 5.1c

Please describe your risks that are driven by change in physical climate parameters

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
Preci	Change in precipitation extremes and droughts	Significant physical risks associated with climate change and damage to SunPower property as a result of typhoons and other violent storms could result from climate change. Research indicates that many of the expected violent storms will occur between the Tropic of Cancer and the Tropic of Capricorn. SunPower's manufacturing operations located in The Philippines and Malaysia are in this higher risk area. Substantial storm damage to these factories (or vendors/transport in the supply chain) as a result of climate change-related severe weather events could result in business interruption or severe impact resulting from a shortage of supply of products. Furthermore, property damage could cause lost revenue from operations needing to shut down for repair. Increased temperatures could threaten freshwater supply, which could then lead to increased water prices for business operation. There is also risk of severe flooding near rivers and sea level rise along coastal areas.	Reduction/disruption in production capacity	Unknown	Direct	Likely	High
NatRe	Induced changes in natural resources	Some of SunPower's suppliers of raw materials and components and transport infrastructure are also located in "high risk" areas. Damage to their property from storms or rising sea levels could affect SunPower supply chain and associated costs.	Increased capital cost	Unknown	Indirect (Supply chain)	More likely than not	Medium-high
Sea	Sea level rise	SunPower has a large office complex located on a commercial pier on San Francisco Bay in Richmond, California. As sea level has continued to rise in the Bay, future levels or storm surge run-up could affect the SunPower office at this location. As part of its business continuity planning efforts, SunPower will	Other: Risk to Richmond, CA Office	Unknown	Direct	Unknown	Medium

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
		closely monitor ongoing studies of sea level rise in San Francisco Bay to more accurately assess the risk associated with this threat, (i.e., additional expenses incurred above normal operational expenses, potential for having to relocate in order to avoid shut down during restoration period, etc.).					
Uncer	Uncertainty of physical risks	Most projects require Property At-Risk insurance while under construction and during operation. The cost of this insurance increases if a project is located in a high-risk zone. These zones include flood and windstorm, both of which have been shown to be potentially affected by climate change. That means that SunPower projects could be more expensive to insure. SunPower is also required to hold property insurance for factories which are located in the Philippines and Malaysia. To the extent that climate change causes typhoons and tropical storms in that area of the world, insurance becomes more expensive. If substantial storm damage occurred to SunPower factories, the business could be severely impacted by a shortage of supply.	Increased capital cost	Unknown	Direct	More likely than not	Medium

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5.1d

Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk; and (iii) the costs associated with these actions

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5.1e

Please describe your risks that are driven by changes in other climate-related developments

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
Commu	Other drivers	Community Impacts / Multiple countries / Uncertain timescale: The physical risks associated with climate change could affect entire communities where SunPower's manufacturing plants are located. Violent storms related to climate change can result in damage to community infrastructure such as roadways as well as injuries or illnesses in the communities where SunPower's employees are located. Increased temperatures combined with increased precipitation could lead to a human health risk of insect and pathogen outbreaks. Employees and family illness could also have adverse impacts on SunPower's ability to operate its facilities. These threats can also affect SunPower suppliers as well. Loss or decrease in the supply of raw materials and components can also have a negative impact on SunPower's operations and profitability. If such occurrences increase in frequency and intensity, increased cost and decreased productivity may be a direct result.	Increased capital cost	Unknown	Direct	More likely than not	Medium

5.1f

Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk; (iii) the costs associated with these actions

5.1g

Please explain why you do not consider your company to be exposed to risks driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

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5.1h

Please explain why you do not consider your company to be exposed to risks driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

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5.1i

Please explain why you do not consider your company to be exposed to risks driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

## Page: 6. Climate Change Opportunities

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6.1

**Have you identified any climate change opportunities (current or future) that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply**

Opportunities driven by changes in regulation

Opportunities driven by changes in physical climate parameters

Opportunities driven by changes in other climate-related developments

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6.1a

**Please describe your opportunities that are driven by changes in regulation**

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
EnReg	General environmental regulations, including planning	As a producer of solar energy products and systems, SunPower offers products and technologies that help stakeholders meet requirements in climate change legislation. For example, electricity suppliers can purchase SunPower products and/or systems to fulfill requirements of regional Renewable Portfolio Standards (RPS). Replacing fossil-based energy such as electricity produced from coal-fired power plants significantly reduces carbon dioxide, which could help companies and/or countries comply with regulatory schemes like cap and trade. SunPower offers a solution for organizations that will be required to reduce emissions by regulation as well as those organizations participating in voluntary programs. Long-term laws and regulations are in place today in North America (US, State-level), Europe, and Asia, but the implementation and enforcement has been slow. The implementation and enforcement of these regulations will result in increased investment in renewable energy, including solar energy. As these market opportunities grow, SunPower will be able to develop larger and long term contracts for SunPower products and components.	Increased demand for existing products/services	Current	Direct	Very likely	Medium

**6.1b**

**Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity and (iii) the costs associated with these actions**

---

**6.1c**

Please describe the opportunities that are driven by changes in physical climate parameters

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
Water	Induced changes in natural resources	Water shortages will likely lead to decreases of hydroelectric outputs. This poses a market share opportunity to SunPower and the solar industry. Photovoltaic energy offers another source of energy in an increasingly carbon-constrained business environment. The demand for renewable energy will further increase because businesses will have to incorporate climate change considerations into their business and risk management strategies, as well as adapt to carbon reduction regulations.	Increased demand for existing products/services	Unknown	Indirect (Client)	Very likely	Medium-high
PH	Other physical climate opportunities	Public Health Protection: By providing an alternative to fossil-based energy such as coal-fired power plants, SunPower has the opportunity to contribute to protection of public health by reducing the mortality and morbidity connected with increased urban air pollution and heat waves.	Increased demand for existing products/services	Unknown	Indirect (Client)	Likely	Medium-high

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**6.1d**

Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity and (iii) the costs associated with these actions

---

**6.1e**

**Please describe the opportunities that are driven by changes in other climate-related developments**

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
PVInd	Other drivers	Business Environment: The US solar industry is facing increasing competition from lower selling prices from Asian solar panel manufacturers. Approximately 66% of SunPower common stock is held by Total SA, Europe's third largest oil company. Based on the contraction in the PV industry, and SunPower's new shareholder's support, SunPower is well positioned for long-term growth and achievement of business objectives. Utility scale energy developments represent the largest opportunity for growth in the solar industry, and with Total's support under its Credit Support Agreement with SunPower, SunPower will have the opportunity to finance these developments.	Increased demand for existing products/services	Unknown	Direct	Likely	Medium-high
SocRe	Other drivers	SunPower's sustainability goal of engaging 70% of their employees around the world in volunteer activities demonstrates their belief in the opportunity of responsibly working within communities. SunPower also acts with social responsibility by producing a local product that creates local jobs, contributes to a thriving community as well as economic and energy resource capacity building. Additionally, through the SunPower Foundation, the company empowers, inspires and motivates future solar industry leaders in the communities around the world.	Wider social benefits	Unknown	Indirect (Client)	Very likely	Medium-high

6.1f

**Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity; (iii) the costs associated with these actions**

6.1g

Please explain why you do not consider your company to be exposed to opportunities driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

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6.1h

Please explain why you do not consider your company to be exposed to opportunities driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

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6.1i

Please explain why you do not consider your company to be exposed to opportunities driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

## **Module: GHG Emissions Accounting, Energy and Fuel Use, and Trading [Investor]**

### **Page: 7. Emissions Methodology**

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7.1

Please provide your base year and base year emissions (Scopes 1 and 2)

<b>Base year</b>	<b>Scope 1 Base year emissions (metric tonnes CO2e)</b>	<b>Scope 2 Base year emissions (metric tonnes CO2e)</b>
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Base year	Scope 1 Base year emissions (metric tonnes CO2e)	Scope 2 Base year emissions (metric tonnes CO2e)
Mon 01 Jan 2007 - Mon 31 Dec 2007	730	47778

## 7.2

Please give the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

Please select the published methodologies that you use

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

### 7.2a

If you have selected "Other", please provide details below

SunPower uses SAP Carbon Impact, an enterprise carbon management solution (<http://www.sap.com/carbonimpact>) to measure greenhouse gas emissions and other environmental impacts across SunPower's business operations and supply chain. This solution is based on the WRI/WBCSD GHG Protocol methodology and is consistent with ISO standards. Global warming potentials are based on the IPCC Second Assessment Report to remain consistent with the UNFCCC best practice in international emissions reporting. Emissions factors are applied based on a hierarchy of facility-specific direct measurements (where possible and cost-effective), country-specific regulatory factors (where available), country-specific voluntary factors (where available), and national defaults from WRI and IPCC (where direct measurement and country-specific factors are not available). Data was collected by a survey that was sent to the Carbon Managers at Facilities Fab 1, Fab 2, Fab 3, Modco, Mexico, San Jose, and Richmond. Data was collected from Carbon Managers on a quarterly basis and data is entered based on billing cycles or on a monthly basis. Emissions data for SunPower's worldwide administrative offices were estimated based on office square footages and number of full time employees (FTE).

## 7.3

Please give the source for the global warming potentials you have used

Gas	Reference
CO2	IPCC Second Assessment Report (SAR - 20 year)
CH4	IPCC Second Assessment Report (SAR - 20 year)
N2O	IPCC Second Assessment Report (SAR - 20 year)

#### 7.4

Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data

Fuel/Material/Energy	Emission Factor	Unit	Reference
Distillate fuel oil No 1	73.15	Other: CO2/MMBtu	EPA
Distillate fuel oil No 2	73.15	Other: CO2/MMBtu	EPA
Distillate fuel oil No 4	73.15	Other: CO2/MMBtu	EPA
Electricity	776.49	Other: g CO2/kWh	WRI - Electricity by Country- Greece- 2005
Electricity	405.39	Other: g CO2/kWh	WRI - Electricity by Country- Italy - 2005
Electricity	26.23	Other: g CO2/kWh	WRI - Electricity by Country- Switzerland- 2005
Electricity	428.54	Other: g CO2/kWh	WRI - Electricity by Country- Japan- 2005
Electricity	472.51	Other: g CO2/kWh	WRI - Electricity by Country- United Kingdom- 2005
Liquefied petroleum gas (LPG)	2.98	Other: kg CO2/t	WRI
Natural gas	53.06	Other: CO2/MMBtu	EPA - Stationary Gas Use
Other: Business Air Travel	0.27	Other: kg CO2/mi	EPA business air travel unknown distance

Fuel/Material/Energy	Emission Factor	Unit	Reference
Other: Alternative Commuting	2.74	Other: kg CO2/mi	Emissions by fuel type referencing WRI Emission Factors Compilation from Cross-Sector Tools. Version 1.0. July 2009.
Other: Alternative Commuting	0.39	Other: kg CO2/mi	Emissions by fuel type referencing WRI Emission Factors Compilation from Cross-Sector Tools. Version 1.0. July 2009.
Other: Company Vehicles	0.26	Other: kg CO2/mi	WRI - Car Travel by Distance
Other: Company Vehicles	0.31	Other: kg CO2/mi	WRI - Car Travel by Distance
Electricity	267.95	Other: g CO2/kWh	WRI - Electricity by Country- Belgium- 2005
Electricity	787.86	Other: g CO2/kWh	WRI - Electricity by Country- People's Republic of China- 2005
Electricity	394.29	Other: g CO2/kWh	WRI - Electricity by Country-Spain- 2005
Electricity	90.85	Other: g CO2/kWh	WRI - Electricity by Country- France- 2005
Electricity	873.31	Other: g CO2/kWh	WRI - Electricity by Country- Australia- 2005
Electricity	418.18	Other: g CO2/kWh	WRI - Electricity by Country- Korea- 2005
Electricity	767.48	Other: g CO2/kWh	WRI - Electricity by Country- Isreal- 2005
Electricity	495.14	Other: g CO2/kWh	WRI - Electricity by Country- Philippines- 2005
Electricity	515.47	Other: g CO2/kWh	WRI - Electricity by Country- Mexico- 2005

### Further Information

SunPower uses SAP Carbon Impact, an enterprise carbon management solution (<http://www.sap.com/carbonimpact>), to accurately account for greenhouse gas emissions and other environmental impacts across SunPower's business operations. This solution is based on the WRI/WBCSD GHG Protocol methodology and is consistent with ISO standards. Actual data was collected from utility invoices with records of electricity and natural gas usage as well as fuel purchase records for other onsite and mobile fuels. Where data were missing or unattainable, relevant estimation methodologies were used to estimate for the appropriate usages. Global warming potentials are based on the IPCC Second Assessment Report to remain consistent with the UNFCCC best practice in international emissions reporting. Emissions factors are applied based on a hierarchy of facility-specific direct measurement (where possible and cost-effective), country-specific regulatory factors (where available), country-specific voluntary factors (where available), and national defaults from WRI and IPCC where direct measurement and country-

specific factors are not available.

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## Attachments

[https://www.cdproject.net/sites/2013/95/30495/Investor CDP 2013/Shared Documents/Attachments/InvestorCDP2013/7.EmissionsMethodology/SunPower EGrid Factors.xlsx](https://www.cdproject.net/sites/2013/95/30495/Investor%20CDP%202013/Shared%20Documents/Attachments/InvestorCDP2013/7.EmissionsMethodology/SunPower%20EGrid%20Factors.xlsx)

## Page: 8. Emissions Data - (1 Jan 2012 - 31 Dec 2012)

---

### 8.1

**Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory**

Operational control

---

### 8.2

**Please provide your gross global Scope 1 emissions figures in metric tonnes CO<sub>2</sub>e**

1768

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### 8.3

**Please provide your gross global Scope 2 emissions figures in metric tonnes CO<sub>2</sub>e**

212063

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### 8.4

Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions which are not included in your disclosure?

Yes

8.4a

Please complete the table

Source	Scope	Explain why the source is excluded
Onsite fuels for estimated offices	Scope 1	More than 80% of SunPower's Scope 1 GHG emissions are from 7 major sites (Fab1, Fab2, Fab3, Modco, Mexico, Richmond and San Jose Headquarters.) SunPower was able to estimate the electricity usage at their leased facilities globally (Scope 2), but due to the lease structure, we do not have access to the actual fuel usage at these facilities. These leased facilities are many administrative offices located worldwide and comprise 1.7% of SunPower's total Scope 2 carbon footprint.
Newly acquired manufacturing facilities	Scope 1 and 2	Former Tenesol manufacturing facilities acquired by SunPower in 2012 were not included in this year's report. SunPower will address those three locations in the next CDP report.

8.5

Please estimate the level of uncertainty of the total gross global Scope 1 and 2 emissions figures that you have supplied and specify the sources of uncertainty in your data gathering, handling and calculations

Scope 1 emissions: Uncertainty range	Scope 1 emissions: Main sources of uncertainty	Scope 1 emissions: Please expand on the uncertainty in your data	Scope 2 emissions: Uncertainty range	Scope 2 emissions: Main sources of uncertainty	Scope 2 emissions: Please expand on the uncertainty in your data
Less than or equal to 2%	Metering/ Measurement Constraints	SunPower estimates there is less than 2% uncertainty associated with its Scope 1 emissions. All actual usage data has been collected for onsite fuel	More than 5% but less than or equal to 10%	Assumptions Extrapolation	All uncertainty from Scope 2 emissions at the key facilities is surrounding the use of published emission factors. SunPower estimated Scope 2 emissions for its administrative support offices.

Scope 1 emissions: Uncertainty range	Scope 1 emissions: Main sources of uncertainty	Scope 1 emissions: Please expand on the uncertainty in your data	Scope 2 emissions: Uncertainty range	Scope 2 emissions: Main sources of uncertainty	Scope 2 emissions: Please expand on the uncertainty in your data
		use in 2012. Any uncertainty from Scope 1 emissions is likely due to issues in the metering equipment.			The value is based on estimated electricity consumption while considering square footage and number of employees.

**8.6**

**Please indicate the verification/assurance status that applies to your Scope 1 emissions**

No third party verification or assurance

**8.6a**

**Please indicate the proportion of your Scope 1 emissions that are verified/assured**

**8.6b**

**Please provide further details of the verification/assurance undertaken, and attach the relevant statements**

Type of verification or assurance	Relevant standard	Attach the document

---

8.6c

Please provide further details of the regulatory regime to which you are complying that specifies the use of Continuous Emissions Monitoring Systems (CEMS)

Regulation	% of emissions covered by the system	Compliance period	Evidence of submission
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8.7

**Please indicate the verification/assurance status that applies to your Scope 2 emissions**

No third party verification or assurance

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8.7a

Please indicate the proportion of your Scope 2 emissions that are verified/assured

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8.7b

Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Type of verification or assurance	Relevant standard	Attach the document
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8.8

**Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?**

No

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8.8a

Please provide the emissions in metric tonnes CO2

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**Further Information**

Scope 1 and 2 emissions are not third party-verified. However a professional greenhouse gas consultant collects operational data and SunPower utilizes a carbon management software tool (SAP Carbon Impact) to track, monitor and maintain their corporate GHG inventory for years 2007 – 2012.

**Page: 9. Scope 1 Emissions Breakdown - (1 Jan 2012 - 31 Dec 2012)**

---

9.1

**Do you have Scope 1 emissions sources in more than one country?**

Yes

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9.1a

Please complete the table below

Country/Region	Scope 1 metric tonnes CO2e
Philippines	790
Malaysia	222

Country/Region	Scope 1 metric tonnes CO2e
United States of America	616
Mexico	30

---

## 9.2

Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)

By business division  
 By facility  
 By GHG type  
 By activity

---

## 9.2a

Please break down your total gross global Scope 1 emissions by business division

Business division	Scope 1 emissions (metric tonnes CO2e)
Manufacturing	1042
Business Operations	724

---

## 9.2b

Please break down your total gross global Scope 1 emissions by facility

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude
Fab 1 (Philippines)	48	14.28	121.06
Fab 2 (Philippines)	655	12.87	121.77
Fab 3 (Malaysia)	222	2.34	102.21
Modco (Philippines)	87	14.28	121.06
Richmond (US)	421	37.91	-122.36
San Jose (US)	195	37.40	-121.95
Mexico	30	32.64	115.53

### 9.2c

Please break down your total gross global Scope 1 emissions by GHG type

GHG type	Scope 1 emissions (metric tonnes CO2e)
CO2	1629.5
CH4	128.81
N2O	0.76

### 9.2d

Please break down your total gross global Scope 1 emissions by activity

Activity	Scope 1 emissions (metric tonnes CO2e)
Backup Generators	647
Company Vehicles	108
LPG	389

Activity	Scope 1 emissions (metric tonnes CO2e)
NF3 Emissions	7
Refrigerant Gas	1
Stationary Fuel Use	616

9.2e

Please break down your total gross global Scope 1 emissions by legal structure

Legal structure	Scope 1 emissions (metric tonnes CO2e)
-----------------	--

**Page: 10. Scope 2 Emissions Breakdown - (1 Jan 2012 - 31 Dec 2012)**

10.1

Do you have Scope 2 emissions sources in more than one country?

Yes

10.1a

Please complete the table below

Country/Region	Scope 2 metric tonnes CO2e	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling (MWh)
Philippines	110590	223346	606.44
Belgium	3	10	
China	3	3	

Country/Region	Scope 2 metric tonnes CO2e	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling (MWh)
France	12	135	
Greece	27	35	
Israel	61	79	
Italy	104	256	
Japan	2	4	
South Korea	23	54	
Australia	209	239	
Germany	101	291	
Spain	100	255	
Malaysia	93400	188630	39.5
Switzerland	2	68	
United Kingdom	3	7	
United States of America	1843	5576	15.83
Mexico	5461	10594	

## 10.2

Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)

- By business division
- By facility
- By activity

## 10.2a

Please break down your total gross global Scope 2 emissions by business division

Business division	Scope 2 emissions (metric tonnes CO2e)
-------------------	--

Business division	Scope 2 emissions (metric tonnes CO2e)
Manufacturing	209450
Business Operations	2613

**10.2b**

Please break down your total gross global Scope 2 emissions by facility

Facility	Scope 2 emissions (metric tonnes CO2e)
Anaheim, CA, USA	38
Athens, Greece	27
Austin, TX, US A	24
Belmont, Melbourne 1 and Melbourne 2, Australia	209
Beijing, China	3
Birmingham, United Kingdom	3
Brussels, Belgium	3
Fab 1, Philippines	15056
Fab 2, Philippines	87355
Fab 3, Malaysia	93400
Faenza, Italy	81
Geneva, Switzerland	2
Frankfurt, Germany	101
Irvine, CA, USA	11
Tel Aviv, Israel	61
Lyon Training Center, France	10
Milan, Italy	18
Modco, Philippines	8178
Paris, France	2
Portland, OR, USA	17
Richmond, CA, USA	639

Facility	Scope 2 emissions (metric tonnes CO2e)
Rome, Italy	5
Roseville, CA, USA	9
San Jose, CA, USA	1186
Seoul, Korea	23
Madrid, Spain	100
Tokyo, Japan	2
Mexicali, Mexico	5461
Trenton, NJ, USA	39

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**10.2c**

Please break down your total gross global Scope 2 emissions by activity

Activity	Scope 2 emissions (metric tonnes CO2e)
Purchased Electricity	212063

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**10.2d**

Please break down your total gross global Scope 2 emissions by legal structure

Legal structure	Scope 2 emissions (metric tonnes CO2e)
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**What percentage of your total operational spend in the reporting year was on energy?**

More than 0% but less than or equal to 5%

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**11.2**

**Please state how much fuel, electricity, heat, steam, and cooling in MWh your organization has purchased and consumed during the reporting year**

Energy type	MWh
Fuel	7128
Electricity	429871
Heat	
Steam	
Cooling	

---

**11.3**

**Please complete the table by breaking down the total "Fuel" figure entered above by fuel type**

Fuels	MWh
Distillate fuel oil No 2	2585
Natural gas	3404
Liquefied petroleum gas (LPG)	1138

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**11.4**

**Please provide details of the electricity, heat, steam or cooling amounts that were accounted at a low carbon emission factor**

Basis for applying a low carbon emission factor	MWh associated with low carbon electricity, heat, steam or cooling	Comments
Tracking instruments, RECS (USA)	1435	SunPower has a two year contract for a total of 2870 MWh of RECS that started in 2012 and extends through the end of 2013.
Grid connected low carbon electricity generation owned by company, no instruments created	646	Onsite renewable energy generated in The Philippines and Malaysia. This number excludes the renewable power generated in the USA.

**Page: 12. Emissions Performance**

**12.1**

**How do your absolute emissions (Scope 1 and 2 combined) for the reporting year compare to the previous year?**

Decreased

**12.1a**

**Please complete the table**

Reason	Emissions value (percentage)	Direction of change	Comment
Emissions reduction activities	5	Decrease	SunPower implemented a number of projects that reduced energy and by extension reduced GHG.
Divestment			
Acquisitions			
Mergers			
Change in output			
Change in methodology			
Change in boundary			
Change in physical operating conditions			
Unidentified			

Reason	Emissions value (percentage)	Direction of change	Comment
Other	3	Increase	The number of MW that SunPower produced increased from 837 in 2011 to 863 in 2012 which represents a 3% increase from the previous year.

## 12.2

Please describe your gross combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per unit currency total revenue

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
88	metric tonnes CO2e	unit total revenue	10	Decrease	SunPower has started a series of expansions including purchasing Tenesol SA. This reduced revenue for the year however, this investment may boost production and revenue in the future.

## 12.3

Please describe your gross combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per full time equivalent (FTE) employee

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
47	metric tonnes CO2e	FTE employee	9	Increase	SunPower reduced the overall number of employees and continues to expand offices into new markets to remain competitive in the global economy. This accounts for the slight increase in emissions per FTE.

## 12.4

Please provide an additional intensity (normalized) metric that is appropriate to your business operations

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
234	metric tonnes CO2e	Other: Per MW of solar capacity produced	4	Decrease	SunPower continues to invest in R&D to improve the efficiency of the panels and expand manufacturing operations.

#### Further Information

Scope 1 emissions decreased due to fewer power interruptions from storm impacts in Southeast Asia in 2012, which thereby decreased the use of back-up electricity and diesel-fire generators at SunPower's manufacturing facilities.

In 2012, SunPower generated a total of 303,584 kWh of PV energy at three of its major facilities from its onsite solar systems in the Philippines and Malaysia, thereby avoiding greenhouse gas emissions of approximately 367 metric tonnes CO2e. This PV power contribution is anticipated to increase over time as SunPower's developments and usage of PV increases.

### Page: 13. Emissions Trading

#### 13.1

**Do you participate in any emissions trading schemes?**

No, and we do not currently anticipate doing so in the next 2 years

#### 13.1a

Please complete the following table for each of the emission trading schemes in which you participate

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO2e	Details of ownership
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13.1b

What is your strategy for complying with the schemes in which you participate or anticipate participating?

13.2

Has your company originated any project-based carbon credits or purchased any within the reporting period?

No

13.2a

Please complete the table

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric tonnes of CO2e)	Number of credits (metric tonnes CO2e): Risk adjusted volume	Credits retired	Purpose, e.g. compliance
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Page: 14. Scope 3 Emissions

14.1

Please account for your organization's Scope 3 emissions, disclosing and explaining any exclusions

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Methodology	Percentage of emissions calculated using primary data	Explanation
Purchased goods and services	Relevant, not yet calculated				SunPower is using the Solar Energy Industries Association (SEIA) Commitment for Environmental and Social Responsibility ("the Commitment"). The Commitment defines common practices and expectations for all solar industry participants, including manufacturers, suppliers, subcontractors, and customers in the solar value chain. The Commitment encourages Participants to go beyond legal compliance, drawing upon internationally recognized standards, to advance social and environmental responsibility. SunPower publicly endorsed the Commitment statement of the SEIA in March of 2012 and has begun reaching out to the supply chain to collect qualitative data. As the program matures, SunPower has plans to start collecting quantitative data in 2013 including on GHG.
Capital goods	Not evaluated				
Fuel-and-energy-related activities (not included in Scope 1 or 2)	Not evaluated				
Upstream transportation and distribution	Not evaluated				
Waste generated in operations	Relevant, not yet calculated				Waste data is collected and currently not converted to GHG emissions.
Business travel	Relevant, calculated	5765.53			Since 2011, the emissions from business air travel have decreased 26%.
Employee commuting	Relevant, calculated	5971			This combines alternative transportation and driving to work. At SunPower, 73% of emissions come from alternative transportation since there is robust use of alternative transportation. To get to the Fab 2 facility, 83% of the employees use a shuttle and at Fab 3 24% of the employees use a shuttle provided by SunPower to get to work.
Upstream leased	Not evaluated				

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Methodology	Percentage of emissions calculated using primary data	Explanation
assets					
Investments	Not evaluated				
Downstream transportation and distribution	Relevant, not yet calculated				In 2013 SunPower will commence implementing a supply chain solution called INFODIS to enable the collection of transportation emissions.
Processing of sold products	Relevant, calculated				
Use of sold products	Relevant, calculated	0	There are no carbon emissions associated with the use of SunPower's products.		SunPower produced 863 MW in 2012 alone. This significantly decreases the GHG emissions from electricity generated with fossil fuels.
End of life treatment of sold products	Not evaluated				
Downstream leased assets	Not relevant, explanation provided				SunPower owns all of the manufacturing at this time.
Franchises	Not relevant, explanation provided				There are no franchises.
Other (upstream)	Not evaluated				
Other (downstream)	Not evaluated				

## 14.2

Please indicate the verification/assurance status that applies to your Scope 3 emissions

No third party verification or assurance

### 14.2a

Please indicate the proportion of your Scope 3 emissions that are verified/assured

14.2b

Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Type of verification or assurance	Relevant standard	Attach the document
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14.3

Are you able to compare your Scope 3 emissions for the reporting year with those for the previous year for any sources?

Yes

14.3a

Please complete the table

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
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Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
Employee commuting	Emissions reduction activities	2	Increase	SunPower promotes the robust use of alternative transportation. To get to the Fab 2 facility, 83% of the employees use a shuttle and at Fab 3 24% of the employees use a shuttle provided by SunPower to get to work.
Business travel	Unidentified	26	Decrease	

#### 14.4

**Do you engage with any of the elements of your value chain on GHG emissions and climate change strategies? (Tick all that apply)**

- Yes, our suppliers
- Yes, our customers
- Yes, other partners in the value chain

#### 14.4a

**Please give details of methods of engagement, your strategy for prioritizing engagements and measures of success**

SunPower holds an annual supplier day and has engaged suppliers on GHG emissions and climate change strategies using the Solar Energy Industries Association (SEIA) Commitment for Environmental and Social Responsibility ("the Commitment"). The Commitment defines common practices and expectations for all solar industry participants, including manufacturers, suppliers, subcontractors, and customers in the solar value chain. The Commitment encourages Participants to go beyond legal compliance, drawing upon internationally recognized standards, to advance social and environmental responsibility. SunPower publicly endorsed the Commitment statement of the SEIA in March of 2012 and has obtained commitments from key suppliers. Next SunPower will reach out to the supply chain to collect qualitative data.

#### 14.4b

To give a sense of scale of this engagement, please give the number of suppliers with whom you are engaging and the proportion of your total spend that they represent

Number of suppliers	% of total spend	Comment
		This information is confidential business information.

14.4c

If you have data on your suppliers' GHG emissions and climate change strategies, please explain how you make use of that data

How you make use of the data	Please give details
Use in supplier scorecards	The Commitment continues to be implemented in conjunction with SEIA but the scorecard and SEIA will eventually become a venue to share, inform, and communicate further with stakeholders suppliers' social and environmental responsibility.

14.4d

Please explain why not and any plans you have to develop an engagement strategy in the future

**Module: Sign Off**

**Page: Sign Off**

Please enter the name of the individual that has signed off (approved) the response and their job title

Linda Perry-Lynch  
Corporate Sr. Director Environmental Health Safety & Sustainability

