

SmartGreenScans

Environmental Footprinting of Photovoltaics

- **Environmental footprint** based on Full LCA (ISO14040/14044)
- **Carbon Footprint** certificate (ISO/DIS 14067)
- **Energy payback time** and **Energy Return on Investment**
- **Toxicity** life-cycle emissions
- **Criteria air pollutant** life-cycle emissions
- **Critical review** of your LCA studies
- Getting started with your **GRI Sustainability Reporting**
- **Publication of average industry LCA data set**

- ✓ *Competent:*
 - ✓ *10 years experience in Life Cycle Assessment of PV*
 - ✓ *Using best & up-to-date software & databases*
- ✓ *Independent*
- ✓ *Systematic approach*
- ✓ *Transparent documentation*
- ✓ *Benchmarking data available*



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The *Solar Scorecard* is published by Silicon Valley Toxics Coalition (SVTC) since 2010 which ranks PV module producers on Sustainability aspects. www.solarscorecard.com

2012 SOLAR SCORECARD

See below for a sample of the survey. To view the full survey, go to www.solarscorecard.com.

*The company names listed in green represent companies that responded to the Scorecard survey. Companies that did not respond to the survey (names shown in black), were scored based on information provided on their website.

	Canadian Solar	First Solar*	Hanwha SolarOne	Jinko	LDK	Panasonic	REC*	Renesola	Schott	Sharp	SolarWorld*	SunPower*	Suntech*	Trina*	Yingli*
Overall score	2	74	2	0	0	28	87	11	2	9	91	93	86	94	88
Manufacturing locations	China	USA, Germany, Malaysia	Korea	China	China	Malaysia, Japan	Singapore	China	Germany, China, USA, Czech Republic	USA, UK	USA, Germany	Malaysia, Mexico, Philippines	China, USA	China	China
Environment	---	Yes	---	---	---	Yes	Yes	---	---	---	Yes	Yes	Yes	Yes	Yes
EP&R	---	Yes	---	---	---	---	Yes	---	---	---	Yes	Yes	Yes	Yes	Yes
Company publicly supports public policies for extended producer responsibility (EPR)?	---	Yes	---	---	---	---	Yes	---	---	---	Yes	Yes	Yes	Yes	Yes
Waste or scrap PV modules are recycled at a facility with a permit and the recycling process meets ISO 14001?	---	Yes	---	---	---	---	Yes	---	---	---	Yes	Yes	Yes	Yes	Yes
Company performed a hazardous waste determination for PV modules?	---	Yes	---	---	---	---	Yes	---	---	---	Yes	Yes	Yes	Yes	Yes
Company currently does not use prison labor (e.g., UNICOR) during any aspect of the product life cycle?	---	Yes	---	---	---	---	Yes	---	---	---	Yes	Yes	Yes	Yes	Yes
Workers' Rights	---	---	---	---	---	---	Yes	---	---	---	Yes	Yes	Yes	Yes	Yes
Company manufacturing operations are certified with ISO 14001 or equivalent with Social Accountability International (SA 8000)?	---	---	---	---	---	---	Yes	---	---	---	Yes	Yes	Yes	Yes	Yes
Company disclose the percentage of employees that are unionized in their brand name products and that are not in their main supply chain for their region?	---	Yes	---	---	---	---	Yes	---	---	---	Yes	Yes	Yes	Yes	Yes
Company public chemical emissions to the environment on their website and/or annual report?	---	Yes	---	---	---	Yes	Yes	Yes	---	Yes	Yes	Yes	Yes	Yes	Yes
Company public annual volume of wastewater discharged on their website and/or annual report?	---	---	---	---	---	Yes	Yes	---	---	---	Yes	---	Yes	Yes	---
Company has a code of conduct with their suppliers in alignment with the principles of Social Accountability International (SA 8000)?	---	Yes	---	---	---	---	Yes	---	---	---	Yes	Yes	Yes	Yes	Yes
Company is willing to publicly disclose contract manufacturing network on an annual basis?	---	Yes	---	---	---	---	Yes	---	---	---	Yes	Yes	Yes	Yes	Yes
Life Cycle Analysis	---	Yes	---	---	---	Yes	Yes	---	---	---	Yes	Yes	Yes	Yes	Yes
Company conducts a life cycle analysis on their PV modules?	---	Yes	---	---	---	Yes	Yes	---	---	---	Yes	Yes	Yes	Yes	Yes
Company has set a "zero waste" goal for annual waste generation targets or PV recycling facilities?	---	Yes	---	---	---	Yes	Yes	---	---	---	Yes	Yes	---	Yes	Yes

SVTC would like to thank the following companies for responding to our survey: Aleo Solar, Avancis, First Solar, Motech, REC, Scheuten, Sola, SolarWorld, Solon, SoloPower, Sovello, SunPower, Suntech, Trina, and Yingli. Those that are not listed here can be seen on the website - www.solarscorecard.com