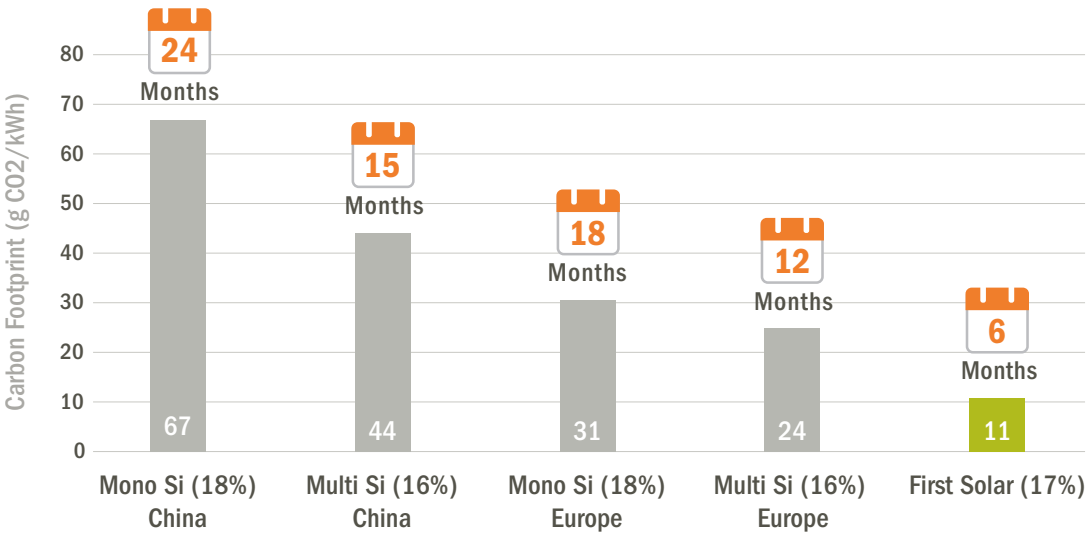
First Solar's Sustainability Advantage

DECOUPLING YOUR BUSINESS GROWTH FROM ENVIRONMENTAL IMPACTS

All PV technologies are not created equal. First Solar's advanced thin film photovoltaic (PV) modules are manufactured using less energy, water and semiconductor material, resulting in the best environmental profile in the industry.

INDUSTRY-LEADING CARBON FOOTPRINT AND ENERGY PAYBACK TIME



PV Technology Efficiencies and Manufacturing Location

Lowest carbon footprint of all PV technologies.

UP TO 6X LOWER

than c-Si pv.[1]

Fastest energy payback time in the industry.

UP TO 4X FASTER

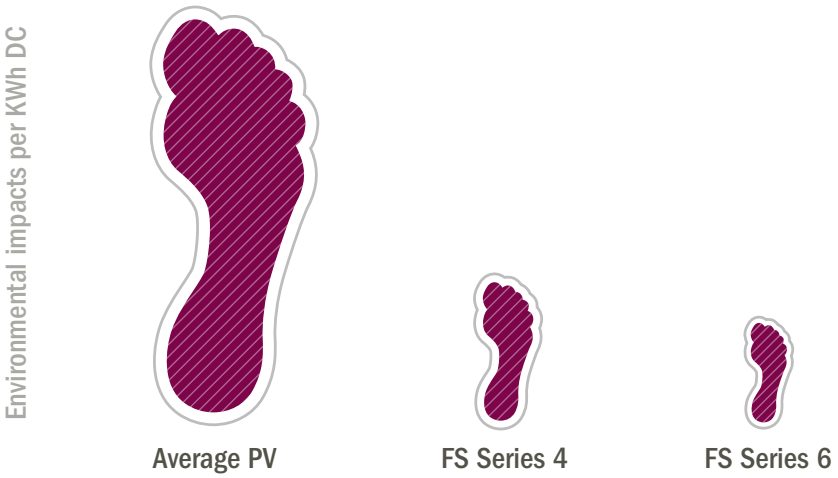
than c-Si pv.[1]

INDUSTRY-LEADING ECO-EFFICIENCY[2]

- Superior energy yield
- Competitive cost
- Lowest life cycle environmental impacts

A low carbon footprint and energy payback time is key to decarbonizing electricity generation.

DRIVING CONTINUOUS ENVIRONMENTAL FOOTPRINT IMPROVEMENT[3]



Series 6 environmental footprint is expected to be

UP TO 4X LOWER

than the average PV product.[4]

[1] M. de Wild-Scholten, Energy Payback Time and Carbon Footprint of Commercial Photovoltaic Systems, Solar Energy Materials & Solar Cells 119, (2013), 296-305. Assumes rooftop installation in Southern Europe (1700 kWh/m2/yr irradiation). Literature values were updated based on relative PV efficiency gains.

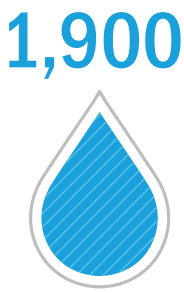
[2] Seitz et al., 2013, Eco-Efficiency Analysis of Photovoltaic Modules, Bifa Environmental Institute, Germany.

[3] Wyss et.al., PEF screening report of electricity from photovoltaic panels in the context of the EU Product Environmental Footprint Category Rules (PEFCR) Pilots, v.1.4, August 2015, Switzerland. Product environmental footprint considers ecosystem, human health and natural resource depletion impacts. Ecosystem impact indicators include: climate change, ozone depletion, photochemical ozone formation, acidification, terrestrial eutrophication, freshwater eutrophication, marine eutrophication. Human health impact indicators include: human toxicity (cancer and non-cancer effects), particulate matter, ionizing radiation HH. Natural resources impact indicators include: land use, water resource depletion, and mineral, fossil and renewable resource depletion.

[4] Sinha and Wade, IEEE PVSC, 2017. Average PV product environmental performance is based on the EU PV market mix in 2012: 45.2% multi c-Si, 40.5% mono c-Si, 6.3% CdTe, 3.5% CIS, 4.5% micromorph Si. First Solar Series 6 modules have approximately one-third of the human health and ecosystem impacts and one-fifth of the natural resource depletion impacts of the average PV product.

LOWEST WATER FOOTPRINT OF ALL PV TECHNOLOGIES (LITERS PER MEGAWATT HOUR)[5]

THERMAL POWER PLANTS



c-Si PV

FIRST SOLAR PV

By using less electricity and water during manufacturing, First Solar PV has the **LOWEST WATER FOOTPRINT** in the PV industry.[5]

First Solar PV enables you to decouple your business growth from emissions, water use and waste generation.

CREATING ENDURING VALUE BY ENABLING A CIRCULAR ECONOMY

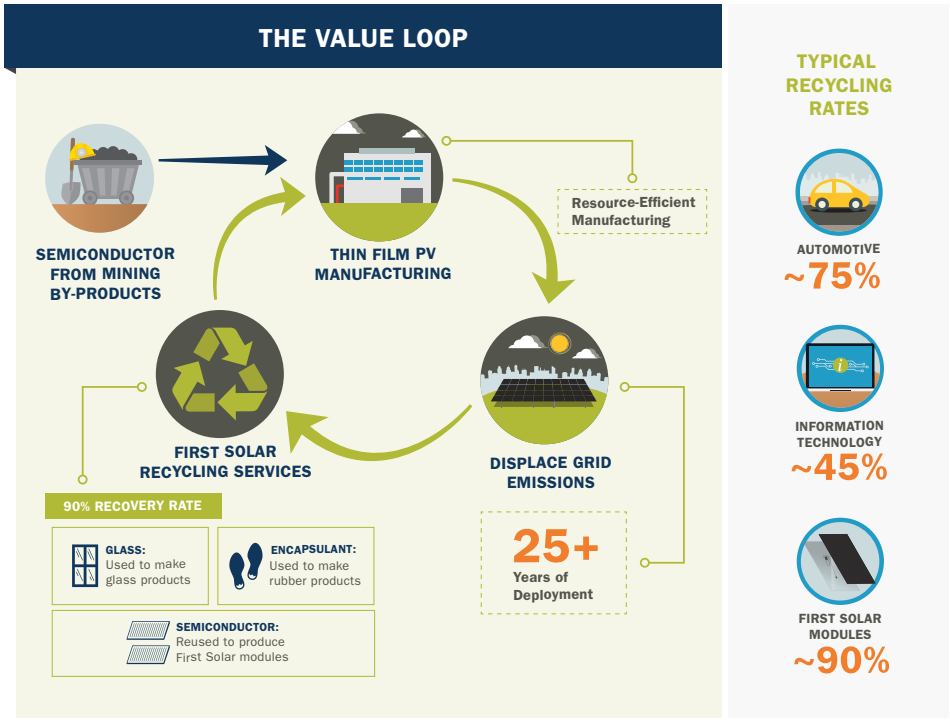
First Solar is a long-standing leader in offering global PV recycling services for its modules, with more than a decade of experience in operating high-value PV recycling facilities in the U.S., Germany and Malaysia.

Why Partner with First Solar?

Contribute to a
CIRCULAR ECONOMY
Recover ~90 % of a First Solar module for reuse.

Rely on
A GLOBAL SOLUTION
and keep ahead of evolving PV waste management requirements.

LOWER TOTAL COST OF OWNERSHIP
with unrivaled in-house PV recycling expertise and infrastructure.



[5] Fthenakis and Kim. Life cycle uses of water in U.S. electricity generation. Renewable and Sustainable Energy Reviews vol. 14, pp. 2039–2048, 2010.
Sinha, Meader and de Wild-Scholten, Life Cycle Water Usage in CdTe Photovoltaics, IEEE, Journal of Photovoltaics, 2012.

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SEIA PV RECYCLING PROGRAM

PMHA PRIME MINISTER'S HIBISCUS AWARD

ENCOURAGING Environmental EXCELLENCE
Ohio Environmental Protection Agency