

THE RECYCLING ADVANTAGE

COST EFFECTIVE. SUSTAINABLE.

OVERVIEW

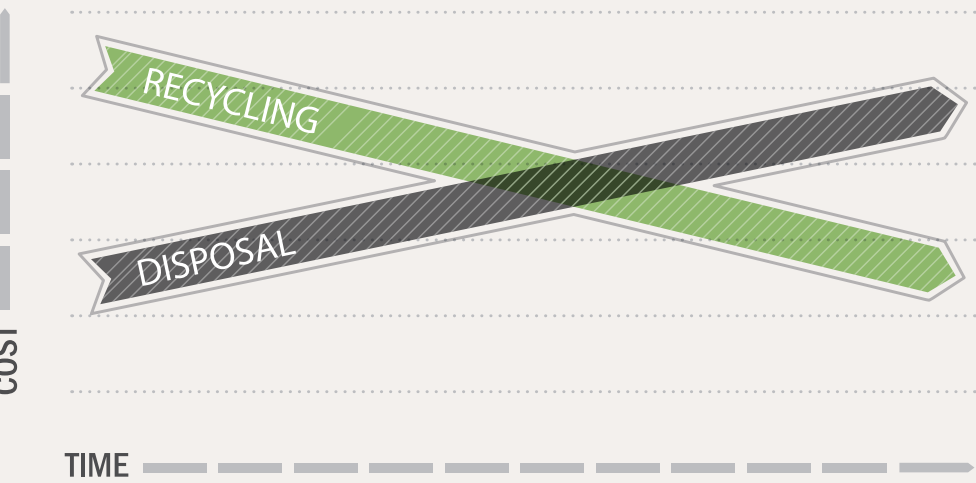
First Solar leads the industry with a proven recycling solution that fulfills solar’s promise as a clean and sustainable renewable energy. We believe that powering the future requires a commitment to responsible product life cycle and end-of-life management.

WHY RECYCLE WITH FIRST SOLAR?

Recycling offers economic and environmental benefits over disposal and is the most environmentally sustainable and responsible solution for managing photovoltaic (PV) modules at end-of-life (EOL). Recycling can also help ensure compliance with various e-waste regulations and permitting requirements around the world.

First Solar realizes that our customers’ decisions to recycle must make economic sense. We continuously invest in recycling innovation to drive down costs and help our customers maximize their return on investment.

As the availability of sites and land for disposal become scarcer, and regulatory disposal requirements become more burdensome for all PV technologies, disposal costs will likely increase above costs for recycling.



RECYCLING VS. DISPOSAL COSTS



RECYCLING WITH FIRST SOLAR

- ✓ *Is a commercially attractive option for responsible EOL management*
- ✓ *Reduces carbon footprint and energy payback time of PV modules¹*
- ✓ *Recovers valuable raw materials and increases the sustainability of solar PV*

FLEXIBLE SOLUTIONS TO MEET YOUR NEEDS

First Solar provides customers a flexible, commercially attractive and environmentally responsible recycling service for managing First Solar modules at EOL.

Our recycling service can be easily included in all First Solar sales and service agreements including operations and maintenance (O&M), engineering, procurement, and construction (EPC), PV power plant and module sales agreements.

- ✓ Convenient and globally available— one source for all your solar PV needs
- ✓ Competitive and cost-effective
- ✓ Flexibility offered through contracts with renewable pricing
- ✓ No up-front fees. Pay-as-you-go model enables you to recycle on a per-module basis
- ✓ Scalable from construction through decommissioning
- ✓ Responsible recycling you can trust— First Solar operates to sound and responsible global standards



GLOBAL, PROVEN, INDUSTRY-LEADING EXPERTISE

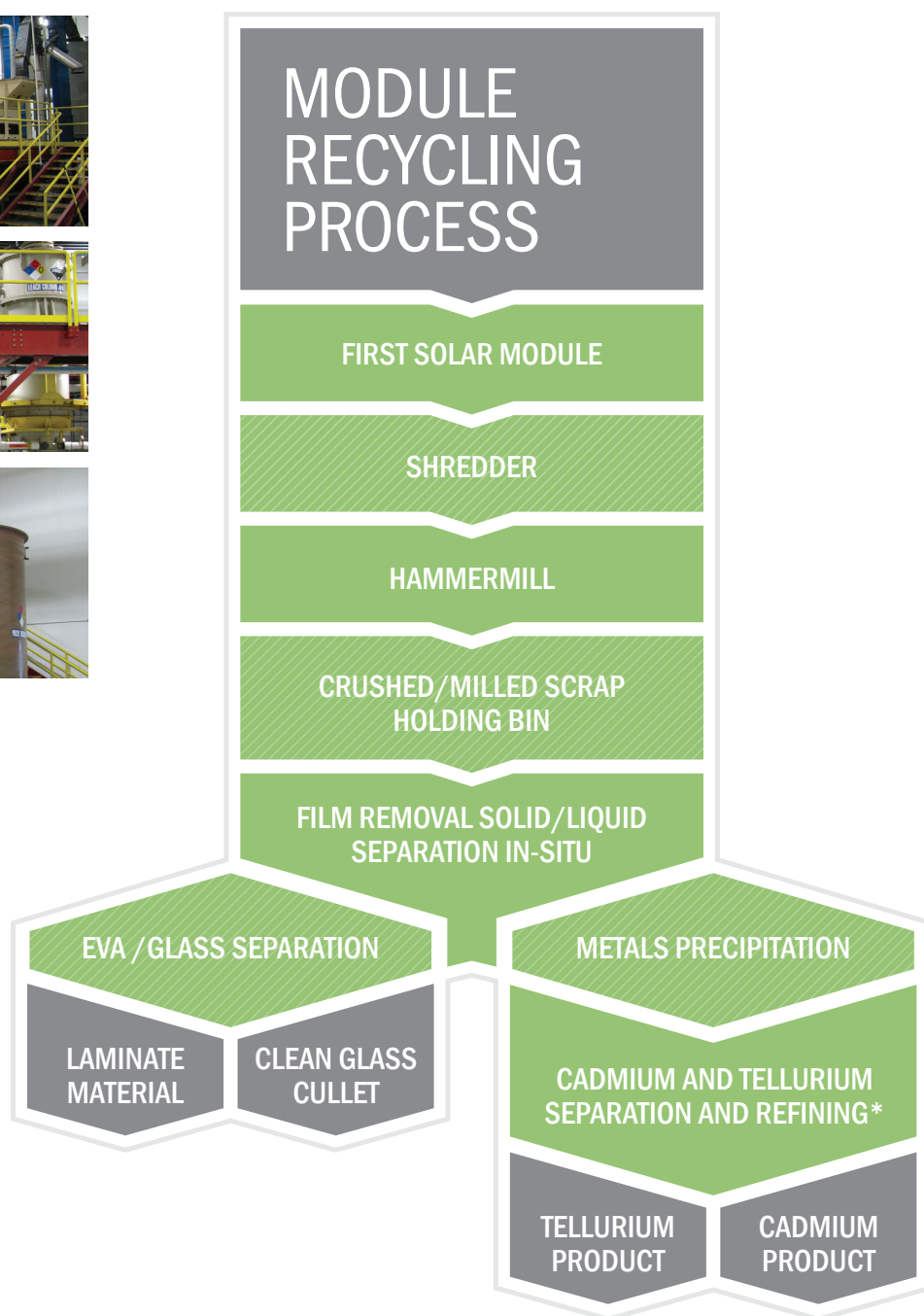
First Solar’s long-standing leadership in PV life-cycle management and recycling gives system owners confidence in knowing that their modules will be managed to sound and responsible global standards. First Solar pioneered the first global and comprehensive module recycling program in the PV industry in 2005. Our state-of-the-art recycling facilities are operational at all our manufacturing plants and have a scalable capacity to accommodate high volume recycling as more modules reach the end of their 25+ year life. Our experience in recycling has allowed us to continuously improve processes, technology, and reduce operational costs.

Our proven, state-of-the-art module recycling process achieves high recovery rates; more than 90% of the semiconductor material and 90% of the glass can be reused in new modules and products.



90%+
RECYCLING OF
SEMICONDUCTOR
MATERIAL

~90%
RECYCLING
OF GLASS



*Cadmium and tellurium separation and refining are conducted by a third-party.



KNOW YOUR OPTIONS / SUSTAINABILITY MADE SIMPLE

Learn more about how First Solar can help you meet your module EOL management needs at a cost advantage. Our affordable recycling services are globally available today for a cleaner, more sustainable tomorrow.

recycling@firstsolar.com Website: **www.firstsolar.com/recycling**

¹Held, Michael, and Robert Ilg. "Update of Environmental Indicators and Energy Payback Time of CdTe PV Systems in Europe." Progress in Photovoltaics: Research and Applications 19, no. 5 (August 2011): 614-626. doi:10.1002/pip.1068.