



DEPARTMENT OF
ECOLOGY
State of Washington

Manufacturer Plan Guidance for the Photovoltaic Module Stewardship Program

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Solid Waste Management Program
Washington State Department of Ecology
Olympia, Washington

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1.0 Introduction

In 2017, the Washington state Legislature passed Senate Bill 5939 to promote a sustainable, local renewable energy industry through modifying tax incentives. One portion of the bill created [Chapter 70.355 RCW](#) (Photovoltaic Module Stewardship and Takeback Program) requiring manufacturers of photovoltaic (PV) modules to provide the public a convenient and environmentally sound system for recycling modules purchased after July 1, 2017.

Manufacturers are required to provide for a takeback service that accepts that manufacturer's (and its predecessors') brands of PV modules that were sold after July 1, 2017 at no cost to the owner of the PV module, provided the owner has not received insurance or other compensation through warranty coverage for disposal of those modules. It is possible for PV modules to operate for over 15 to 25 years. Due to the durability of the product, the initial volume of returns in the takeback program is expected to be low.

The manufacturer of a PV module covered by law includes an entity that:

- Has legal ownership of the brand name or cobrand of PV module.
- Imports a PV module branded by a manufacturer that has no physical presence in the United States of America.
- Sells at retail a PV module acquired from an importer and chooses to take legal responsibility in place of the importer as the manufacturer of that product. Examples include distributors, installers, or retail outlets with a store front or internet sales.
- Chooses to take legal responsibility on behalf of a manufacturer as defined in the previous bullets.

A product stewardship organization (PSO) may act on behalf of a manufacturer or group of manufacturers to operate and implement the stewardship program.

The Department of Ecology (Ecology) was directed to develop guidance for PV module manufacturers on creating a stewardship plan for a self-directed PV module collection and recycling program, Chapter 70.355.010(3) RCW. Ecology's role is to ensure that the takeback plan provides convenient collection, and that the takeback and recycling of PV modules is done in a safe and environmentally sound manner.

The stewardship program covers:

- All PV modules used for residential, commercial, or agricultural purposes that are installed on, connected to, or integral with buildings and that were sold in or into the state after July 1, 2017.
- Freestanding off-grid power generation systems such as water pumping stations, electric vehicle charging stations, solar fencing, solar-powered signs and solar-powered street lights that were sold in or into the state after July 1, 2017.

Consumer electronic devices that contain electronic circuit boards intended for everyday use by individuals, such as watches or calculators, and products used in yard applications, such as walkway lighting and fountain pumps, are not covered in this program.

After January 1, 2021, photovoltaic manufacturers not participating in an approved stewardship plan may not sell their modules in or into Washington.

2.0 Stewardship Plan Content

2.1 Introduction

The stewardship plan must describe the authorized party overseeing implementation of the plan. A manufacturer or group of manufacturers may designate a stewardship organization to act as an agent in operating and implementing the stewardship plan.

2.2 Contact Information

The authorized party overseeing the stewardship plan must provide their primary person's contact information, to include name, phone number, email and mailing address. If available, a secondary contact should also be included.

2.3 Plan Definitions

The plan must clearly define technical terms and/or acronyms being used.

2.4 Plan Performance Goals

The plan must establish performance goals, including a goal for the rate of combined reuse and recycling of collected PV modules as a percentage of the total weight of photovoltaic modules collected. The rate must be no less than eighty-five percent of the total weight of what is collected. The goals should be established in measurements by both pounds and an estimate of units of PV modules.

2.5 Outreach to Stakeholders

The stewardship plan must identify how stakeholders across the state, including consumers, installers, distributors, government, building demolition firms, and recycling and treatment facilities, will receive information on how they can properly recycle PV modules that are covered in the program.

A communication plan on how the public and other stakeholders will be informed about where to recycle PV modules for free must be included. At a minimum, outreach activities must include:

- A website that provides information about the program and how to access collection services.
- 15 or 30 second video ads or other graphic ads for use on social media and/or other relevant industry websites.
- Templates of publication materials for installers, other related industries, purchasers of the photovoltaic modules, state agencies, and local governments.
- Graphics for use by installers and other industry stakeholders that identify the program.

The plan must also describe outreach goals to educate and inform about the program and how these goals will be measured to show successful outreach to stakeholders.

2.6 Statewide Collection Network

The PV module collection system must provide reasonably convenient takeback across the state where covered PV modules were used. If collection is not available as required, the plan must explain the lack of collection service and how it will provide for collection needs. Manufacturers are not required to build collection site infrastructure if current collection needs can be met utilizing existing services, such as through distributors or installers.

Each manufacturer must provide for a collection service that accepts that manufacturer's (and its predecessors') brands of PV modules that were sold in or into Washington after July 1, 2017. Proof of sale or purchase may be required at the time of collection.

Collectors in this program may not charge a recycling or drop off fee. Businesses acting as collectors providing pickup and/or removal services may charge for those specific services only when drop off sites are available in a county. Collectors may provide service with or without compensation from the manufacturer or PSO. Collectors may operate collection sites at both public and private locations.

The plan must list all collection services provided by the plan and describe how these collectors ensure environmentally sound management practices when handling PV modules.

The manufacturer or PSO must post collection services on a publicly available website.

2.7 Transport and Processing Facilities Information

The plan must describe how collected PV modules are transported from collection sites to processing facilities. The plan must list all processing facilities used, including physical location of the facilities and contact information.

2.8 Minimize Release of Hazardous Substances

Following Ecology's [*Interim Enforcement Policy for Conditional Exclusion for Electronic Wastes*](#), stewardship plans must create best management practices to be followed during collection, transportation, and reuse and recycling. Except when reused, collected PV modules should be recycled to the maximum extent possible.

Each direct processing facility identified in the plan, and not already certified to the ISO 14001, standard must perform an initial audit completed by a qualified third party accredited for the ISO 14001 standard. The audit will report on the following:

- All processes and methods used by each processor to recycle PV modules following environmentally sound management practices.
- All intermediate and final downstream processing vendors of PV modules, components, materials, waste, or scrap for reuse, recycling, or disposal.
- Compliance with all applicable federal, state, and local requirements and, if exported, requirements of all transit and recipient countries.
- Worker health and safety at the processing facility.
- Information on financial penalties, regulatory orders, or violations the processing facility received in the previous three years.

Processing facilities certified to the ISO 14001 standard can report this information by providing documentation of current certification.

2.9 Finance of Program

To maintain a sustainable program with sufficient funding for collection and recycling of modules and residuals, the plan must include a proposal for assessing charges and apportioning costs for manufacturers participating in the plan. The finance mechanism must ensure that the photovoltaic modules can be delivered to takeback locations with no cost to the last owner or holder. A description of the information or data used to determine the charges assessed or costs apportioned to manufacturers participating in the plan must also be included.

The plan must also describe how manufacturers will pay Ecology's administration costs.

2.10 Plan Implementation

All stewardship plans must be implemented and operational by January 1, 2021. The plan must include a timeline showing when each of the following will occur and a description of the activity including, but not limited to:

- Start-up of the collection and processing efforts.
- Education efforts specific to installers, collectors, and processors.
- Outreach efforts for the PV module takeback program.

2.11 Participating Manufacturers

The stewardship plan must include a list of each manufacturer participating in the plan, contact information for each manufacturer, and their associated brands of PV modules sold after July 1, 2017.

3.0 Stewardship Plan Review, Approval, and Amendments

Manufacturer stewardship plans are due to Ecology by January 1, 2020. Manufacturers who start selling or offering for sale PV modules in or into Washington after January 1, 2020 must submit plans within 30 days of selling or offering for sale PV modules in or into Washington or submit documentation showing participation in an approved stewardship plan. Ecology will review and approve submitted plans that meet the plan content requirements within 90 days of receipt.

If plans do not meet content requirements, Ecology will notify the manufacturer or PSO within 90 days of receipt. A new or revised plan must be submitted to Ecology within 60 days after notification. Ecology has an additional 60 days to review the new or revised plan. Manufacturers may not sell their products in or into the state until they are part of an approved plan.

Plans must be submitted electronically in a format that allows editing and commenting by Ecology. Each section of the stewardship plan must be separate and tabbed so that sections may be replaced as plan updates are needed.

Ecology must receive electronic notification within 30 days when there are changes to:

- Manufacturers participating in the plan or changes to contact information for manufacturers already included in the plan.
- The assessment of charges or apportionment of costs.
- Collection sites or services.
- Direct processors used by the plan.
- The public outreach plan, other than additional public outreach.

Manufacturers or a PSO must review and update their plan every five years. The updated plan must be submitted at least 90 days prior to end of the fifth year.

Within 90 days after receipt of a five year plan update, Ecology will determine whether the plan meets requirements. If the plan does not meet content requirements, Ecology will notify the manufacturer or PSO. A new or revised plan must be submitted to Ecology within 60 days after notification. Ecology has an additional 60 days to review the new or revised plan.

The manufacturer or PSO must post the approved plan on a publically available website.

Submit electronic copies to Christine Haun at christine.haun@ecy.wa.gov.

4.0 Annual Reporting

Photovoltaic manufacturers must report annually on program results. The report must be provided to Ecology and posted on a publically available website by the manufacturer or PSO. Reports for the previous calendar year are due May 1st of each year, starting in 2022, and must include:

- A description of program operations and activities including collection services. If collection site requirements were not fully met, explain how requirements will be met the following year.
- An environmental audit performed every three years as described above in Section 2.8 Minimize Release of Hazardous Substances, completed by a qualified third party accredited for the ISO 14001 standard. Facilities certified to the ISO 14001 standard can report this information by providing documentation of current certification.
- The pounds and an estimate of units of PV modules collected for reuse, recycling, and any residuals sent to a landfill.
- An annual evaluation of whether performance goals were met. If goals are not met, include a description of adjustments that will be made to meet goals.
- Documentation of program outreach to stakeholders conducted that year.
- Total program revenue and itemized costs.

Submit electronic copies to Christine Haun at christine.haun@ecy.wa.gov.

5.0 Updates to Manufacturer Plan Guidance for the Photovoltaic Module Stewardship Program

Ecology may update the content of this guidance document if there are changes that impact program requirements. When making updates, Ecology will notify all manufacturers and any PSOs. Changes to this guidance may require plan updates.

Manufacturers or a PSO must update their plan within 90 days after notice of an update to this guidance. If the plan does not meet content requirements, Ecology will notify the manufacturer or PSO within 90 days. A new or revised plan must be submitted to Ecology within 60 days after notification. Ecology has an additional 60 days to review the new or revised plan. Manufacturers are in compliance with plan requirements as revisions and updates are made during this period.

Examples of what may result in a guidance update include, but are not limited to:

- A change in the laws related to the Photovoltaic Module Stewardship Program.
- An update or change to the Ecology publication “Interim Enforcement Policy for Conditional Exclusion for Electronic Waste.”

Appendices

Appendix A. Interim Enforcement Policy for Conditional Exclusion for Electronic Waste, #02-04-017



Interim Enforcement
Policy.pdf