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Washington State Department of Ecology  
Solid Waste Management Program

**Draft Manufacturer Plan Guidance**

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**for the Photovoltaic Module  
Stewardship Program**

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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 all modules that were purchased after July 1, 2017.

Manufacturers are required to finance the takeback and recycling system at no cost to the owner of the PV module. 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.
- 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, but is not limited to:

- PV modules used for residential, commercial, or agricultural purposes.
- PV modules used on buildings.
- Ground mounted PV modules.
- 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.

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 operation of the plan. A stewardship organization may be designated to act as an agent on behalf of a manufacturer or group of manufacturers 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. The goals should be established in measurements by both the number of units of PV modules and total pounds.

### **2.5 Outreach to Stakeholders**

The stewardship plan must identify how relevant 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.

A communication plan on how the public and other stakeholders will be informed about where to recycle PV modules for free must also be included. Outreach activities should include the use of:

- A website.
- Ecology's toll free 1-800-RECYCLE number.
- 15 or 30 second video ads on social media and/or other relevant industry websites.
- Publication materials to installers and other related industries, purchasers of the photovoltaic modules, state agencies, and local governments.
- Graphics for use by installers and other industry stakeholders.

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 at locations across the state where PV modules were used. A collection site is required for every county, and an additional collection site for every 50,000 residents in each city. A county's collection site may be the same as a collection site for a city or town in the county. If collection is not available as required, the plan must explain the lack of collection site and how it will provide for collection needs.

If a business providing PV module installation volunteers as a collection site and follows environmentally sound management practices described in the [\*Interim Enforcement Policy for Conditional Exclusion for Electronic Wastes\*](#), publication #02-04-017 (see Appendix), the plan must allow them to participate as a collector.

Each collection site must accept all types and brands of PV modules used in various applications, including residential, commercial, and agricultural purposes.

Collectors may not charge a recycling or drop off fee. Businesses acting as collectors providing pick-up and/or removal services may charge for those specific service costs. Collectors may offer to serve as a collector 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 sites provided by the plan and describe how these sites ensure environmentally sound management practices when handling PV modules.

## **2.7 Transport and Processing Facilities Information**

The plan must describe how collected PV modules are transported from collection sites to processing facilities. All processing facilities used by the plan must be listed 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 propose protocols and policies that ensure environmentally sound management from collection through reuse and recycling. Except when reused, collected PV modules must be recycled to the maximum extent possible.

An initial audit completed by a qualified third party accredited for the ISO 14001 standard must be included for each direct processing facility used by the plan. The audit will report on the following:

- All processes and methods used by each processor to recycle PV modules following environmentally sound management practices.
- 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 it exports, those 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.

## **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 fully operational by January 1, 2021. The plan must include a timeline showing when each of the following will occur and a description of each activity including, but not limited to:

- Start-up of the collection and processing efforts.
- Education efforts for the public, 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.

### **3.0 Stewardship Plan Review, Approval, and Amendments**

Manufacturer stewardship plans are due to Ecology by January 1, 2020, after that, within 30 days of selling or offering for sale PV modules in or into Washington. 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, commenting, and is useable by Ecology. Each section of the stewardship plan must be separate and tabbed so that sections may be replaced as plan updates are needed.

Plans may be periodically amended and must be revised 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.

Within 60 days after receipt of a plan revision, 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 approved plan must be posted on a publically available website by the PSO or manufacturer.

Submit electronic copies to Christine Haun at [christine.haun@ecy.wa.gov](mailto: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 PSO or manufacturer. Reports for the previous calendar year are due April 1<sup>st</sup> of each year, starting in 2022, and must include:

- A description of program operations and activities including collection services. Include an explanation if collection site requirements were not fully met and how requirements will be met the following year.
- An 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.
- The pounds and units of PV modules collected for reuse, recycling, and any residuals sent to a landfill.
- An annual evaluation of whether performance goals were met. This must include information on the percentage of material collected for recycling compared to the amount that was discarded in Washington. If goals aren't met, include a description of adjustments that will be made to meet goals.
- Effectiveness of program outreach to stakeholders.
- Total program revenue and itemized costs.

Submit electronic copies to Christine Haun at [christine.haun@ecy.wa.gov](mailto: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 updates are made, Ecology will notify all manufacturers or PSOs. Changes to this guidance may require plan updates.

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.”

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## **6.0 Appendix: Interim Enforcement Policy for Conditional Exclusion for Electronic Waste, #02-04-017**



Interim Enforcement  
Policy.pdf