
SENATE BILL 6622

State of Washington

66th Legislature

2020 Regular Session

By Senators Das, Lovelett, Rolfes, Nguyen, Cleveland, Carlyle, Hobbs, Frockt, Lias, Keiser, Stanford, Randall, Wellman, Salomon, Saldaña, Darneille, Wilson, C., Kuderer, Rivers, Hawkins, Van De Wege, and Hunt

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1 AN ACT Relating to establishing a comprehensive, statewide
2 photovoltaic module recovery, reuse, recycling, and end-of-life
3 program; amending RCW 70.355.010; and creating new sections.

4 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF WASHINGTON:

5 NEW SECTION. **Sec. 1.** (1) The legislature finds that the
6 deployment of solar energy generation in the state reduces greenhouse
7 gas emissions and provides diversity in clean electric generation.
8 One way that the state can encourage deployment of solar photovoltaic
9 modules is to encourage the sale of the high efficiency photovoltaic
10 modules.

11 (2) With new manufacturing processes incorporated by the industry
12 over the last twenty years, many hazardous material inputs into the
13 module manufacturing processes have been minimized or completely
14 removed, while useful lives and energy production levels have been
15 extended and enhanced, leading to useful lives of photovoltaic
16 modules of fifty years or more.

17 (3) The legislature finds that the stewardship program recently
18 enacted in chapter 70.355 RCW has created uncertainty for
19 manufacturers who may cease to sell modules in the state.
20 Furthermore, the stewardship program addresses only small system
21 modules sold in the state after July 1, 2017. Modules sold before

1 July 1, 2017, will still need to be recycled or disposed of and are
2 expected to enter the waste stream earlier, and initially at higher
3 volumes than modules sold after July 1, 2017. The absence of any
4 program addressing the pre-2017 modules would lead to at least two
5 different module collection and end-of-life programs operating in the
6 state, one a manufacturer financed product stewardship program for
7 modules sold after July 1, 2017, and one or more as yet unknown,
8 unfunded collection and disposal systems for modules sold before July
9 1, 2017, and all utility scale modules.

10 (4) With the substantial increase in solar energy generation
11 deployment over the last decade throughout the country, multiple
12 studies are now being conducted on the life cycle and end-of-life
13 processes of photovoltaic modules. Those studies are analyzing and
14 recommending best practices for collection, recovery, reuse,
15 recycling, processing of modules, and ultimate disposal of any
16 remaining residual materials. The legislature finds that the state
17 could benefit from investing the time and effort to review these
18 studies by creating a task force of experts that obtains input on
19 current and potential future manufacturing materials and processes
20 from module manufacturers and recommends a comprehensive, statewide,
21 environmentally friendly, and cost-effective program, and further has
22 the time to do so before any significant amounts of modules requiring
23 end-of-life processing enter the waste stream.

24 NEW SECTION. **Sec. 2.** (1) By July 1, 2020, the director of the
25 department of ecology must appoint a photovoltaic module recovery,
26 reuse, and recycling task force to review and provide recommendations
27 in a final report on potential methodologies for the management of
28 end-of-life photovoltaic modules deployed in the state. The task
29 force's report is due to the legislature by December 1, 2021.

30 (2) The director of the department of ecology shall convene a
31 photovoltaic module recovery, reuse, and recycling task force. The
32 duties of the task force include, but are not limited to:

33 (a) Obtaining and reviewing existing data from the Washington
34 State University extension energy program pertaining to the
35 manufacturer, location by zip code, in-service date, and estimated
36 volumes of modules deployed under the state's renewable energy cost
37 recovery incentive program established under RCW 82.16.165;

1 (b) Obtaining from manufacturers or existing studies the expected
2 economically productive life cycle of various types of photovoltaic
3 modules currently in use in the state;

4 (c) Obtaining from manufacturers and other sources the past,
5 present, and potential future material and components of photovoltaic
6 modules sold in or into the state. The material list must identify
7 recyclable materials, rare earth elements, and materials that exhibit
8 any of the characteristics of hazardous waste identified in 40 C.F.R.
9 Part 261 (2019);

10 (d) Reviewing product stewardship programs in Canada, the
11 European Union, and other countries;

12 (e) Identifying in-progress and recently completed studies
13 related to photovoltaic module recycling and end-of-life programs;
14 and

15 (f) Analyzing and recommending financing mechanisms including
16 advance recovery fees, recycling and disposal fees, and manufacturer-
17 financed product stewardship programs, including the photovoltaic
18 module stewardship and takeback program issued under RCW 70.355.010
19 as it existed on December 31, 2019.

20 (3) The task force must submit a report to the legislature by
21 December 1, 2021, in compliance with RCW 43.01.036, that includes the
22 task force's recommendations for the financing and management of the
23 recovery, reuse, and recycling of photovoltaic modules and their
24 components and disposing of the remaining end-of-life residual
25 materials. The report must identify legislation, if any, necessary to
26 implement the recommendations of the report.

27 (4) The director of the department of ecology must appoint task
28 force members to serve on the task force created in subsection (1) of
29 this section. Task force membership should include, but is not
30 limited to, members representing:

31 (a) A manufacturer of photovoltaic modules located in the state;

32 (b) A manufacturer of photovoltaic modules located outside the
33 state;

34 (c) A national solar industry group;

35 (d) Solar installers in the state;

36 (e) A utility scale solar project;

37 (f) A nonprofit organization with expertise in waste
38 minimization;

39 (g) A city and a county solid waste program;

40 (h) Expertise in photovoltaic module recycling;

- 1 (i) A community based environmental justice group; and
- 2 (j) Other members with expertise in relevant areas to be reviewed
- 3 by the task force.

4 (5) The director of the department of ecology or the director's
5 designee shall convene the initial meeting of the task force, at
6 which the task force must elect a chair or cochairs from among its
7 members.

8 (6) Participation in the task force created in subsection (1) of
9 this section is strictly voluntary and without compensation.

10 **Sec. 3.** RCW 70.355.010 and 2017 3rd sp.s. c 36 s 12 are each
11 amended to read as follows:

12 (1) (~~(Findings-)~~) The legislature finds that a convenient, safe,
13 and environmentally sound system for the recycling of photovoltaic
14 modules, minimization of hazardous waste, and recovery of
15 commercially valuable materials must be established. The legislature
16 further finds that the responsibility for this system must be shared
17 among all stakeholders, with manufacturers financing the takeback and
18 recycling system.

19 (2) (~~(Definitions-)~~) For purposes of this section the following
20 definitions apply:

21 (a) "Consumer electronic device" means any device containing an
22 electronic circuit board that is intended for everyday use by
23 individuals, such as a watch or calculator.

24 (b) "Department" means the department of ecology.

25 (c) "Manufacturer" means any person in business or no longer in
26 business but having a successor in interest who, irrespective of the
27 selling technique used, including by means of distance or remote
28 sale:

29 (i) Manufactures or has manufactured a photovoltaic module under
30 its own brand names for sale in or into this state;

31 (ii) Assembles or has assembled a photovoltaic module that uses
32 parts manufactured by others for sale in or into this state under the
33 assembler's brand names;

34 (iii) Resells or has resold in or into this state under its own
35 brand names a photovoltaic module produced by other suppliers,
36 including retail establishments that sell photovoltaic modules under
37 their own brand names;

1 (iv) Manufactures or has manufactured a cobranded photovoltaic
2 module product for sale in or into this state that carries the name
3 of both the manufacturer and a retailer;

4 (v) Imports or has imported a photovoltaic module into the United
5 States that is sold in or into this state. However, if the imported
6 photovoltaic module is manufactured by any person with a presence in
7 the United States meeting the criteria of manufacturer under (~~(a)~~
8 ~~through (d) [(c) (i) through (iv)]~~) (c) (i) through (iv) of this
9 subsection, that person is the manufacturer;

10 (vi) Sells at retail a photovoltaic module acquired from an
11 importer that is the manufacturer and elects to register as the
12 manufacturer for those products; or

13 (vii) Elects to assume the responsibility and register in lieu of
14 a manufacturer as defined under (~~(b) [(c)]~~) (c) (i) through (vi) of
15 this subsection.

16 (d) "Photovoltaic module" means the smallest nondivisible,
17 environmentally protected assembly of photovoltaic cells or other
18 photovoltaic collector technology and ancillary parts intended to
19 generate electrical power under sunlight, except that "photovoltaic
20 module" does not include a photovoltaic cell that is part of a
21 consumer electronic device for which it provides electricity needed
22 to make the consumer electronic device function. "Photovoltaic
23 module" includes but is not limited to interconnections, terminals,
24 and protective devices such as diodes that:

25 (i) Are installed on, connected to, or integral with buildings;
26 or

27 (ii) Are used as components of freestanding, off-grid, power
28 generation systems, such as for powering water pumping stations,
29 electric vehicle charging stations, fencing, street and signage
30 lights, and other commercial or agricultural purposes.

31 (e) "Rare earth element" means lanthanum, cerium, praseodymium,
32 neodymium, promethium, samarium, europium, gadolinium, terbium,
33 dysprosium, holmium, erbium, thulium, ytterbium, lutetium, yttrium,
34 or scandium.

35 (f) "Reuse" means any operation by which a photovoltaic module or
36 a component of a photovoltaic module changes ownership and is used
37 for the same purpose for which it was originally purchased.

38 (g) "Stewardship plan" means the plan developed by a manufacturer
39 or its designated stewardship organization for a self-directed
40 stewardship program.

1 (h) "Stewardship program" means the activities conducted by a
2 manufacturer or a stewardship organization to fulfill the
3 requirements of this chapter and implement the activities described
4 in its stewardship plan.

5 (3) (~~(Program guidance, review, and approval.)~~) The department
6 must develop guidance for a photovoltaic module stewardship and
7 takeback program to guide manufacturers in preparing and implementing
8 a self-directed program to ensure the convenient, safe, and
9 environmentally sound takeback and recycling of photovoltaic modules
10 and their components and materials. By January 1, 2018, the
11 department must establish a process to develop guidance for
12 photovoltaic module stewardship plans by working with manufacturers,
13 stewardship organizations, and other stakeholders on the content,
14 review, and approval of stewardship plans. The department's process
15 must be fully implemented and stewardship plan guidance completed by
16 July 1, 2019.

17 (4) (~~(Stewardship organization as agent of manufacturer.)~~) A
18 stewardship organization may be designated to act as an agent on
19 behalf of a manufacturer or manufacturers in operating and
20 implementing the stewardship program required under this chapter. Any
21 stewardship organization that has obtained such designation must
22 provide to the department a list of the manufacturers and brand names
23 that the stewardship organization represents within sixty days of its
24 designation by a manufacturer as its agent, or within sixty days of
25 removal of such designation.

26 (5) (~~(Stewardship plans.)~~) Each manufacturer must prepare and
27 submit a stewardship plan to the department by the later of (~~(January~~
28 ~~1, 2020)~~) July 1, 2022, or within thirty days of its first sale of a
29 photovoltaic module in or into the state.

30 (a) A stewardship plan must, at a minimum:

31 (i) Describe how manufacturers will finance the takeback and
32 recycling system, and include an adequate funding mechanism to
33 finance the costs of collection, management, and recycling of
34 photovoltaic modules and residuals sold in or into the state by the
35 manufacturer with a mechanism that ensures that photovoltaic modules
36 can be delivered to takeback locations without cost to the last owner
37 or holder;

38 (ii) Accept all photovoltaic modules sold in or into the state
39 after July 1, 2017;

1 (iii) Describe how the program will minimize the release of
2 hazardous substances into the environment and maximize the recovery
3 of other components, including rare earth elements and commercially
4 valuable materials;

5 (iv) Provide for takeback of photovoltaic modules at locations
6 that are within the region of the state in which the photovoltaic
7 modules were used and are as convenient as reasonably practicable,
8 and if no such location within the region of the state exists,
9 include an explanation for the lack of such location;

10 (v) Identify how relevant stakeholders, including consumers,
11 installers, building demolition firms, and recycling and treatment
12 facilities, will receive information required in order for them to
13 properly dismantle, transport, and treat the end-of-life photovoltaic
14 modules in a manner consistent with the objectives described in
15 (a)(iii) of this subsection;

16 (vi) Establish performance goals, including a goal for the rate
17 of combined reuse and recycling of collected photovoltaic modules as
18 a percentage of the total weight of photovoltaic modules collected,
19 which rate must be no less than eighty-five percent.

20 (b) A manufacturer must implement the stewardship plan.

21 (c) A manufacturer may periodically amend its stewardship plan.
22 The department must approve the amendment if it meets the
23 requirements for plan approval outlined in the department's guidance.
24 When submitting proposed amendments, the manufacturer must include an
25 explanation of why such amendments are necessary.

26 (6) (~~(Plan approval.)~~) The department must approve a stewardship
27 plan if it determines the plan addresses each element outlined in the
28 department's guidance.

29 (7) (~~(Annual report.)~~) (a) Beginning April 1, ((2022)) 2024, and
30 by April 1st in each subsequent year, a manufacturer, or its
31 designated stewardship organization, must provide to the department a
32 report for the previous calendar year that documents implementation
33 of the plan and assesses achievement of the performance goals
34 established in subsection (5)(a)(vi) of this section.

35 (b) The report may include any recommendations to the department
36 or the legislature on modifications to the program that would enhance
37 the effectiveness of the program, including management of program
38 costs and mitigation of environmental impacts of photovoltaic
39 modules.

1 (c) The manufacturer or stewardship organization must post this
2 report on a publicly accessible web site.

3 (8) (~~(Enforcement.)~~) Beginning (~~(January 1, 2021)~~) July 1, 2023,
4 no manufacturer may sell or offer for sale a photovoltaic module in
5 or into the state unless the manufacturer has submitted to the
6 department a stewardship plan and received plan approval. The
7 department must send a written warning to a manufacturer that is not
8 participating in a plan. The written warning must inform the
9 manufacturer that it must submit a plan or participate in a plan
10 within thirty days of the notice. The department may assess a penalty
11 of up to ten thousand dollars for each sale of a photovoltaic module
12 in or into the state that occurs after the initial written warning. A
13 manufacturer may appeal a penalty issued under this section to the
14 superior court of Thurston county within one hundred eighty days of
15 receipt of the notice.

16 (9) (~~(Fee.)~~) The department may collect a flat fee from
17 participating manufacturers to recover costs associated with the plan
18 guidance, review, and approval process described in subsection (3) of
19 this section. Other administrative costs incurred by the department
20 for program implementation activities, including stewardship plan
21 review and approval, enforcement, and any rule making, may be
22 recovered by charging every manufacturer an annual fee calculated by
23 dividing department administrative costs by the manufacturer's pro
24 rata share of the Washington state photovoltaic module sales in the
25 most recent preceding calendar year, based on best available
26 information. The sole purpose of assessing the fees authorized in
27 this subsection is to predictably and adequately fund the
28 department's costs of administering the photovoltaic module recycling
29 program.

30 (10) (~~(Account.)~~) The photovoltaic module recycling account is
31 created in the custody of the state treasurer. All fees collected
32 from manufacturers under this chapter must be deposited in the
33 account. Expenditures from the account may be used only for
34 administering this chapter. Only the director of the department or
35 the director's designee may authorize expenditures from the account.
36 The account is subject to the allotment procedures under chapter
37 43.88 RCW, but an appropriation is not required for expenditures.
38 Funds in the account may not be diverted for any purpose or activity
39 other than those specified in this section.

1 (11) (~~(Rule making.)~~) The department may adopt rules as necessary
2 for the purpose of implementing, administering, and enforcing this
3 chapter.

4 (12) (~~(National program.)~~) In lieu of preparing a stewardship
5 plan and as provided by subsection (5) of this section, a
6 manufacturer may participate in a national program for the
7 convenient, safe, and environmentally sound takeback and recycling of
8 photovoltaic modules and their components and materials, if
9 substantially equivalent to the intent of the state program. The
10 department may determine substantial equivalence if it determines
11 that the national program adequately addresses and fulfills each of
12 the elements of a stewardship plan outlined in subsection (5)(a) of
13 this section and includes an enforcement mechanism reasonably
14 calculated to ensure a manufacturer's compliance with the national
15 program. Upon issuing a determination of substantial equivalence, the
16 department must notify affected stakeholders including the
17 manufacturer. If the national program is discontinued or the
18 department determines the national program is no longer substantially
19 equivalent to the state program in Washington, the department must
20 notify the manufacturer and the manufacturer must provide a
21 stewardship plan as described in subsection (5)(a) of this section to
22 the department for approval within thirty days of notification.

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