

Policy & Technology Options for Managing Plastic Packaging Waste Survey

We invite you to provide input on potential options to manage plastic packaging in Washington State. The options in this survey are those that the consultant team identified as potential tools to meet the goals of the Plastic Packaging Evaluation and Assessment law (Chapter [70.380](#) RCW), which are that:

- 100 percent of packaging in all goods sold into Washington is recyclable, reusable, or compostable by 2025.
- Packaging in all goods contains at least 20 percent post-consumer recycled content by 2025.
- Plastic packaging is reduced when possible, optimizing the use to meet the need.

Part of the research for this study includes identifying policy and technology options from around the world to manage plastic packaging. The Task 3 sub-report [Successful Plastic Packaging Management Programs and Innovations](#) and [executive summary](#) provide detailed information about each identified policy and technology option, its applicability to Washington, and examples of where it has been implemented around the world. Additional information about the plastic packaging study and links to download all study documents are available on the study's [EZView website](#), and the policy and technology options detailed in the report are summarized below.

This survey is part of the stakeholder consultation process for the study. The survey will close at midnight on **Monday, June 15**. Survey responses and public comments will be considered in the development of final recommendations to the Legislature for reducing plastic packaging in the waste stream. Note that all received input will become part of the public record, and may be posted on the web, or otherwise included in reports and output from the study.

The survey can be accessed at the following link: <https://www.surveymonkey.com/r/WAPlasticPkgStudy>

Policy Options

The consultant team identified the following policy options and 23 case studies from Europe and North America where policies have been implemented or are under development.

- **Bans:** Bans can be approached in two ways: they can be used to completely phase out the use of a material for a specific application (**material bans**) or to encourage a different approach to managing a material at the end of its life (**disposal bans**). When implementing a ban, due diligence must be exercised to investigate unintended consequences. When something is banned, alternatives naturally arise and the impacts of these must be considered. Additional regulation may be required to ensure that alternatives do not have the same or greater detrimental impact. For a ban to be successful, there must also be suitable penalties in place to deter non-compliance and sufficient resources to ensure that the ban is enforced. Bans can also spur innovation in packaging and product development, recycling technology, and recycling infrastructure by setting a common market baseline and establishing the terms of competition. Case studies detailed in the full report include Nova Scotia's and Vermont's recyclables landfill ban, Vermont's plastic trifecta ban, and Seattle's plastic bag ban.
- **Fees/Charges/Taxes/Levies:** Fees, charges, taxes, and levies seek to correct market failures by accounting for environmental externalities not fully reflected in current pricing and market dynamics. By placing a per

unit monetary charge on pollution emissions or waste, they are designed to create appropriate incentives to change behavior patterns without requiring it. Such instruments can lead to large reductions in undesirable behavior and are often equivalent to or more effective than bans at achieving the same environmental outcomes. They can also raise revenue for government agencies or other entities. They cannot, however, guarantee a specific amount of pollution or waste reduction and may impose a burden on those that are unable to comply. Poorly designed taxes can also lead to market distortions, or accentuate pre-existing distortions, with negative impacts on economic activity. Case studies detailed in the full report include California's Integrated Waste Management Fee, the United Kingdom's Landfill Tax, and Chicago's bag fees.

- **Extended Producer Responsibility (EPR):** EPR is a policy approach that transfers financial, and sometimes operational, responsibility for end-of-life management (and, in some cases, other impacts) of products and packaging to producers. When carefully crafted (through modulated fee structures and other fiscal and operational tools), EPR systems can also create incentives for producers to incorporate environmental considerations into the design of their products and packaging. EPR can be applied to many product categories, including packaging, and can be used to make producers responsible for the end-of-life care of their products, regardless of where the material ends up (e.g., litter, garbage, recycling, etc.). Case studies detailed in the full report include EPR programs from British Columbia, Ontario, France, Belgium, and Germany's EPR programs, though these programs cover packaging more broadly; none of these programs exclusively manage plastic packaging.
- **Deposit Return Systems (DRS):** DRS programs place a small monetary deposit on a product, paid by the consumer at the time of purchase, which is refunded when the consumer returns the product packaging to a designated return location for reuse and/or recycling. In the U.S., there are 10 states that have implemented DRS programs for beverage containers. All of these programs, commonly known as 'bottle bills' in the U.S., have elements of EPR in that producers are required to financially contribute to the operation of the system. DRSs are an effective mechanism for maximizing the capture of beverage containers and can complement curbside recycling collection systems for other packaging material. Case studies detailed in the full report include Norway and Oregon's DRS programs.
- **Minimum Recycled Content Requirements:** Recycled content policies seek to stimulate market demand and drive use of recycled feedstocks produced from materials collected for recycling. Minimum recycled content requirements, whether set in legislation or adopted in corporate policies, have been gaining traction across the globe to reduce the reliance on virgin material and create a more robust secondary materials market. Due to their flexibility in implementation and compatibility with current business practices, industry is relatively more supportive of recycled content laws, and many consumer packaged goods (CPG) companies have already announced recycled content commitments as part of their corporate sustainability goals. The case study detailed in the full report is California's [AB 792](#), and is supplemented with examples of recycled content targets by some of the largest CPG companies.
- **Reusable/Durable Product Programs:** These policy measures seek to support overall reduction of resource consumption and waste generation through reuse of products that would otherwise be recycled or disposed. Reusable and durable product programs and businesses are beginning to proliferate, albeit at a local scale and mostly associated with food and beverage packaging. Businesses or other entities providing durable goods usually partner with local businesses to provide durable alternatives to single-use packaging like to go containers or coffee cups through a rent-return model. Case studies detailed in the full report include Freiburg, Germany's FreiburgCup Program, Berkeley's cup loan pilot and Single-Use Disposable Foodware Ordinance, Portland's GO Box pilot, and California's refillable sanitation law.

- **Multi-faceted Measures:** These policy measures seek to address multiple challenges posed by plastic packaging simultaneously, through a combination of tools described above. The case study detailed in the full report is the European Union’s Single-Use Plastics Directive, which uses a combination of interventions to tackle commonly littered items.

Processing Technology Options

The report describes two types of processing technology options—mechanical recycling and chemical recycling—for managing plastic packaging. While not an exhaustive list, the report highlights 34 mechanical recyclers and 20 chemical recyclers in North America using innovative technologies to improve existing recycling processes or develop new ones. Note that we have included examples of both plastics-to-monomer and plastics-to-fuel chemical recycling facilities. There is debate about whether plastics-to-fuel chemical recycling can be truly considered recycling rather than waste-to-energy, however we have included it for the sake of completeness and use the term “chemical recycling” as it is a commonly used and recognized term.

- **Mechanical Recycling:** the washing, grinding, extruding, and pelletizing of post-consumer plastic waste to be used as feedstock for production of new products and packaging. The report highlights 34 mechanical recyclers in North America using innovative technologies or with specialized capacity for handling plastic material, especially related to plastic packaging. It includes a selection of companies who have received letters of non-objection from the U.S. FDA and can produce resin for food-contact applications; companies that are vertically integrated and recycle as well as manufacture plastic products; and those with specialized sorting or processing technology that allows them to achieve higher material quality, such as color sorting ability.
- **Chemical Recycling:** There are two types of chemical recycling processes: one based on the depolymerization of plastic into its constituent monomers (plastic-to-monomer), and the other that first turns the plastic into a fuel and then further cracks the fuel into monomers (**plastic-to-fuel**). Only a few methods of chemical recycling types have yet reached commercial maturity.
 - Plastic-to-monomer chemical recycling is limited in terms of what polymers can be processed (PET and PS are the most common resins currently chemically recycled).
 - There is debate about whether plastic-to-fuel chemical recycling, where polyolefins (HDPE, LDPE, PP, PE) are converted into a fuel, can really be classified as recycling. The amount of energy to take the process past the pyrolysis stage through the steam cracking stage to convert the oil to a monomer also prevents this from being a financially viable option (without additional financial support or partnership) at this time.

The report highlights seven plastic-to-monomer and 13 plastic-to-fuel chemical recyclers. While chemical recycling technology is quickly evolving, it is far from being able to take a mixed plastics stream and create monomers that can be used to make new plastic products at a commercial scale.

About You

1. Which of the following best describes you? (Select all that apply.)
 - a. I work for a packaging producer or manufacturer.
 - b. I work for a consumer goods company.
 - c. I work for a solid waste management service and collection company.
 - d. I work for a recycling facility.
 - e. I work for a plastic reprocessor.

- f. I work for a litter or marine debris clean-up program.
- g. I work for local government.
- h. I work for a state agency.
- i. I work for the federal government.
- j. I am a legislator.
- k. I work for an industry trade association (e.g., 501c4 or 501c6)
- l. I work for an advocacy organization (e.g., 501c3)
- m. I am a member of the public.
- n. Other (please explain)

2. What organization/agency do you represent?

3. What is your title?

4. Which of the following best describes where you work (or live for members of the public)? (Select all that apply.)

- a. Western Washington, urban or suburban area
- b. Western Washington, rural area
- c. Eastern Washington, urban or suburban area
- d. Eastern Washington, rural area
- e. National
- f. Other or outside of Washington (please explain)

Policy and Technology Options

As part of this phase of research, the consultant team identified the following potential policy and technology options for reducing plastic packaging in the waste stream:

Policy Options

- Material/disposal bans
- Fees/charges/taxes/levies
- Extended producer responsibility
- Deposit return systems (also called container deposit systems or “bottle bills”)
- Minimum recycled content requirements
- Reusable/durable product programs
- Multi-faceted measures which use a combination of the above options (an example is the European Union’s Single-Use Plastic Directive)

Technology Options

- Expanded mechanical recycling for additional resin types
- Polymer-to-monomer chemical recycling
- Polymer-to-fuel chemical recycling

5. How helpful do you think each **policy option** would be in reducing plastic packaging in the waste stream?

Policy Option	Very helpful	Somewhat helpful	Neither helpful or unhelpful	Somewhat unhelpful	Very unhelpful
Material/disposal bans					
Fees/charges/taxes/levies					
Extended producer responsibility					
Deposit return system for containers					
Minimum recycled content requirements					
Reusables programs					
Multi-faceted measures					

6. How helpful do you think each **technology option** would be in reducing plastic packaging in the waste stream?

Option	Very helpful	Somewhat helpful	Neither helpful or unhelpful	Somewhat unhelpful	Very unhelpful
Expanded mechanical recycling for additional resin types					
Polymer-to-monomer chemical recycling					
Polymer-to-fuel chemical recycling					

You said [options from matrix selected as **somewhat or very helpful**] would be very or somewhat helpful. For each of these selected options:

7. What do you like most about this option(s)?
8. Do you have any concerns about this option(s)? If so, please describe them.

You said [options from matrix selected as **somewhat or very unhelpful**] would be somewhat or very unhelpful. For each of these selected options:

9. What concerns do you have about this option(s)?
10. Do you have any suggestions for how these concerns could be addressed?
11. Are there any elements of this option(s) that you think could be helpful for managing plastic packaging waste? If so, please describe them.

You said [options from matrix selected as **neither helpful or unhelpful**] would be neither helpful nor unhelpful, or you did not rate the options. For each of these selected options:

12. Are there any elements of this option(s) that you think could be helpful for managing plastic packaging waste? If so, please describe them.
13. Do you have any concerns about this option(s)? If so, please describe them.
14. Are there any options that you think would work particularly well in combination with other options? If so, please describe how you see them working together.
15. Are there any options not listed that you think are important to consider?
16. Do you have any other comments or suggestions for the consultant team to consider?

Thank you for taking the time to provide input to the study. If you have any questions, please contact WAPlasticPkgStudy@cascadiaconsulting.com. If you have not already done so, please sign up for the study [listserv](#) to receive notification of project updates and visit the study [EZView website](#) for more information.