Eunomia Research & Consulting Testimony for Vermont Single-Use Plastics Working Group

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Good afternoon, I am Sarah Edwards, the Director of North America at Eunomia Research & Consulting. This is my colleague, Sydnee Grushack. Thank you for the opportunity to testify today.

Eunomia is a global environmental consultancy focusing on waste and resource management. We also work across other service areas, from Policy & Strategy to the Green Economy to Sustainable Business. Eunomia is based in the United Kingdom and has offices across the globe, including in our home base in New York. Our clients include those in the public and private sector and we have extensive experience in areas of interest to your working group, including in plastics, extended producer responsibility (EPR) and deposits. Some of our recent projects include:

- Designing a vision and cost benefit analysis for EPR implementation in Alberta, Canada;
- Performing a legislative review of California's deposit system and providing recommendations to improve performance; and
- Providing the research and analysis on most common items found as marine litter on beaches in Europe that formed the basis of the European Commission's Single-Use Plastics Directive.

There have been many recent developments in the waste management industry that have led to challenges in Vermont; but are also opportunities for new laws that improve the waste management of the state. Global market changes, most notably the China National Sword policy, have closed key markets for lower grade paper and plastic, which has led to a drive to improve material quality.

Producers are also becoming more involved in waste management, as global brands try to 'do the right thing' on plastics. These packaging manufacturers need high quality recycled material as inputs for recycled content in their products and will be looking for reliable and efficient reverse supply chains to provide it for them.

Marine plastic pollution has become a global political issue and there has lately been a refocus on climate change in the public mindset. In the coming years, resource efficiency (including carbon) will get increased focus and eco-design will become more prominent as manufacturers adapt to the circular economy, a shift to models of reuse and very high recycling targets.

The circular economy is a closed-loop system to eliminate waste and optimize resource use. Shifting to a circular way of thinking and moving from the linear system of today will change the nature of design to account for a product's end-of-life and utilize a hierarchy to the treatment of waste until it is seen as a resource rather than a by-product of consumption. Virgin materials

will be displaced with recycled material, which means that the quality of that recycled material is key.

There are many policy mechanisms for encouraging packaging to move toward a model more in line with the circular economy, including:

- Bans and taxes, such as those that have been become common on plastic bags in the US;
- Extended producer responsibility, in which packaging manufacturers and consumer product goods companies share financial responsibility for the end-of-life management of their products;
- Mandatory targets, for recycling rates, recycled content, or others;
- Incentives; and
- Tradeable allowances or permits.

Today we will focus on EPR.

In response to the public interest on sustainability, plastics and climate change, many consumer-facing brands have created voluntary, internal targets related to these issues. Unilever, often seen as a leader in sustainability, has announced that they plan to halve the amount of virgin plastic used in their products by 2025 and, by the same year, to collect and process more plastic packaging than they sell. Coca-Cola plans to collect for recycling 100% of its containers by 2030 and make them all recyclable by 2025 and made of 50% recycled content by 2030. Coca-Cola also supports deposit legislation in Europe and has released guidelines for their preferred structure. Pepsi, Nestle and Danone are only some of the others who have released similar targets and positions. However, it is our experience that voluntary, non-binding commitments are often not met, or are delayed. Yet, if these companies are making such commitments, legislated requirements will not be overly burdensome and can help spur these organizations into following through.

One of the most effective mechanisms for involving brands in the end-of-life of their products is EPR. Extended producer responsibility allows producers to take financial and often operational control for the management of the material they put on the market. Packaging manufacturers can create economies of scale across infrastructure, build a more efficient reverse supply chain and ensure that they control the quality of recycled materials in order to meet their recycled content goals. Under EPR, material risk transfers from municipalities to producers and there is cost coverage for the recycling system.

Across the globe, EPR has become increasingly common. There are EPR systems for packaging and paper products across 5 Canadian provinces as well as in 26 of the 28 EU Member States. In the US, we already have some EPR systems, including for: electronics, paint and potentially for packaging, as Maine recently passed Resolve HP 1041 “To Support Municipal Recycling Programs,“ which asks the Department of Environmental Protection to draft a packaging EPR bill to help fund community recycling, providing 80% cost coverage. Another form of EPR is also already in place in Vermont, in the form of a bottle bill. Bottle bills allow producers to provide funding to cover the recovery and handling of containers.

Vermont's bottle bill is old and does not stand up to those that are most effective. The deposit value has not changed since it was enacted in 1972, making it worth significantly less due to inflation, therefore acting as less of an incentive to consumers to return their containers. The scope is limited and confusing and the redemption rate reflects these shortcomings. The most well-designed deposit systems regularly see redemption rates above 90%, and at 75% overall, Vermont still falls short of some of its peers, such as Maine.

The current scope of the program in Vermont has approximately 50% of beverage containers sold covered by the deposit program. The diagrams below show the percentage of each type of beverage container, by unit and weight. By weight, wine and cider is a much greater percentage than by units (23% vs. 3%). So, in curbside programs these materials (mostly glass) are much more costly to treat than they are valuable to sell. Only an estimated 30% of containers that do not go through the deposit system are recycled through curbside programs. The remaining 70% is either landfilled or littered, costing Vermonters $3.5M in disposal costs.

If the scope of the bottle bill is expanded and/or the deposit value is increased, there will be several impacts on municipalities. Due to the incentive of the deposit, beverage containers will move from curbside recycling and garbage streams to the deposit system. This is often cited as a major concern, but more material will move from the trash than from the curbside recycling bin. Material recovery facilities (MRFs) will have receive less material, which can lead to savings for municipalities in processing costs. Due to the decrease in this material, MRFs will likely raise tipping fees to compensate for the reduction in quantity, but the overall rates to municipalities should decrease or remain the same.

In 2012, the Vermont Legislature unanimously passed the Universal Recycling law (Act 148in response to the state's stagnant recycling rates, which have hovered around 30-36% for nearly two decades. Much of the material discarded is recyclable (the DEC estimates it to be about half including food scraps) and plastics compose 13% of the waste stream. The bottle bill can help recover some of this material.

There are two reasonable options for expansion to the bottle bill in Vermont that will make a large impact: expanding the scope to include all non-essential beverages (domestic non-sparking water, energy drinks, sports drinks, fruit & vegetable drinks, ready-to-drink coffee & tea and wine & cider) and increasing the deposit to $0.10. With that increase we estimate an 85% return rate (in Oregon the return rate increased past 90% in less than 2 years).

Through our analysis, if Option 1 was implemented, there would be:

- 202 million additional units redeemed
- $2.5 million additional in unredeemed deposits
- Net benefit of material moving from curbside to deposit of $3.0M
    - 15K additional tons recycled
    - 15K tons diverted from landfill
    - Reduction of $535K value of material collected through curbside program, but $1M savings in disposal
    - Increased material revenue of $2.4M

Option 2 would yield:

- 229M additional units redeemed
- $3M additional unredeemed deposits*
- Net benefit of material moving from curbside to deposit of $3.6M
    - 16K additional tons recycled
    - 16K tons diverted from landfill
    - Reduction of $576K value of material collected through curbside program, but $1.4M savings in disposal
    - Increased material revenue of $2.8M

Modernization of the bottle bill will yield financial benefits through several channels. Most notably, through unredeemed deposits and the scrap value of material collected through the system, which yields a higher market value than curbside material, as it is cleaner and better sorted.

The overarching benefits of deposit programs extend beyond additional material recycled or money saved. Materials collected through deposit programs have a higher commodity value than curbside collected material, up to 40% higher in the case of PET. Material coming from single-stream recycling programs is notoriously contaminated and deposit programs are known for producing high quality, clean material. Again, this feeds into recycled content goals for packaging manufacturers.

Environmental impacts include fewer GHG emissions, which are most attributable to the replacement of virgin material with recycled material in the creation of new products. Litter is also reduced as beverage containers are seen as valuable commodities. Finally, all beverage producers would be responsible to cover the costs of recycling of their packaging, rather than taxpayers. Currently, only some are responsible, which creates an inequitable system.

EPR is one of the best ways to tackle plastic pollution and move towards a more circular economy. Vermont already has a form of EPR in the bottle bill, which should be strengthened to increase its effectiveness. Even with implementing full packaging EPR, deposits are still relevant and effective, as is proven by the system in British Columbia. Packaging EPR, on its own, does not address litter and plastic pollution. A bottle bill under full EPR provides a system that:

- Allows governments to set targets;
- Allows producers to design a flexible system allows them access to high quality recycled material at lowest cost;
- Provides consumers with convenient return infrastructure; and
- Municipalities with reduced landfill fees and decreased garbage.

Packaging EPR is a great solution that should be looked for Vermont going forward as a way to increase the effectiveness and efficiency of its recycling system. But, it also strengthens its existing system, which is proven to increase recycling and decrease litter. Together, EPR and an expanded bottle bill will allow Vermont to have one of the most comprehensive and robust recycling systems in North America.


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