Modeling direct and total economic impacts resulting from the adoption of Extended Producer Responsibility in New York State

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1.0 Introduction

Increasingly, a diverse range of stakeholders including local governments, packaging producers, waste service providers etc. are recognizing the role that producer responsibility can play in promoting recycling and a sustainable waste management system. Given the conceptual premise of EPR, ensuring that producers who make a product, ultimately bear the financial and/or physical responsibility for managing it at end of life, it is easy to see why EPR is being championed.

However, the adoption of EPR is not without its challenges. While there is considerable support in favor of EPR legislation with several US states considering its adoption, it is imperative that we press pause and take the time to understand the pre-requisites for effective EPR implementation.

The purpose of Extended Producer Responsibility is to shift the physical and financial responsibility of end of life waste management onto the producers (or first importers), of a particular good.

However, in practice, what producers are financially obligated for is of critical importance when addressing what is literally a billion dollar question. At present, EPR for packaging waste has focused on recycling – producers are obliged to pay for the costs associated with recycling post-consumer packaging waste. Where this becomes potentially problematic, is that recycling costs, particularly for composite and light-weight materials, are going up exponentially – recycling system costs for Ontario, British Columbia and other jurisdictions with EPR are increasing by double digits year over year. In the case of Ontario, recycling system costs have more than doubled in the past 15 years, while recycling rates have actually decreased.

While advocates of EPR say that producers should be paying these costs irrespective of what they might be, the reality is that these costs are mostly absorbed by the consumer, in the form of increases in the cost of consumer packaged goods.

This study seeks to better understand the relationship between producer responsibility fees and the net impact on the economy of New York State. Using best available data, this study models a scenario intended to reflect the proposed producer obligation resulting from proposed EPR legislation, and the corresponding economic impact for consumers.

2.0 Methodology

This section describes the data used in this study and the modeling steps used to quantify the economic impact of EPR legislation in New York State that covers packaging. Please note the following:

Note #1: This modeling relies on data proxies/surrogates for recycling costs from other jurisdictions which have adopted EPR legislation.

Note #2: For the purposes of modeling, we have converted metric tonnes into short tons, and express all costs in $USD.

2.1 Data used in this study includes

1) Data modeled by the RRS (Current Recycling Systems in New York State) and Eunomia (The 50 States of Recycling) regarding quantities of obligated material generated, recovered and disposed.

2) Data modeled by the KPMG Blue Box Best Practices report regarding program administration and recycling promotion and education costs.

3) All data pertaining to recycling costs were obtained from the following three sources:

2022 Stewardship Ontario Annual Report
2025 Recycle BC Fee Schedule
2025 Multi Material Stewardship Manitoba Fee Schedule

These programs represent jurisdictions who have adopted Extended Producer Responsibility legislation, and demonstrate a range of costs intended to model a "Low cost, Medium Cost and High Cost" Scenario. Of all jurisdictions in Canada which have adopted EPR legislation, Manitoba is the lowest cost program (per tonne recycled) while British Columbia is the highest cost program (per tonne recovered). The province of Ontario represents a mid-point value.

2.2 Modeling Stages

Modeling the impact of proposed economic impact of EPR legislation is done in two phases. Phase 1 involves calculating direct recycling system costs in New York State under proposed EPR legislation.

Phase 2 involves modeling the total economic impacts attributable to the adoption of EPR legislation using the income multiplier effect.

2.3 Phase 1 Modeling Steps

In order to calculate direct economic impacts of EPR legislation, we need to know the following:

1) What is the quantity of packaging materials generated and recycled in New York State? What are the costs associated with collecting, recycling and disposal these materials?
2) What are the administrative, data collection and promotion and education costs attributable to operating a residential recycling program for packaging?

As noted in a description of the data used in this study, data surrogates/proxies from other jurisdictions are used in lieu of New York specific data for information pertaining to material management costs.

Step 1: Quantities of packaging materials generated and recycled in New York State

Total Obligated Material Generated Annually (2024 - Projected)	5,978,003 T	US (Short) Tons
Total Obligated Material Recycled Annually (2024 - Projected)	3,048,781 T	US (Short) Tons
Total Obligated Material Sent to Disposal Annually (2024 - Projected)	2,929,222 T	US (Short) Tons

Source: RRS (Current Recycling Systems in New York State) and Eunomia (The 50 States of Recycling)

Step 2: Net costs associated with collecting, recycling and disposal of obligated materials

Costs for Recycling (Low)[1]	$232.90/t	US Dollars / Ton
Cost for Recycling (Medium)[2]	$306.25/t	US Dollars / Ton
Cost for Recycling (High)[3]	$449.56/t	US Dollars / Ton
Cost of Disposal[4]	$99.00/t	US Dollars / Ton

Source[1]: Multi Material Stewardship Manitoba 2025 Fee Schedule

Source[2]: 2022 Stewardship Ontario Annual Report and PIM Model

Source[3]: 2025 Recycle BC Fee Schedule

Source[4]: User Defined Value - Landfill Tipping Free

Note: Quantities sent to disposal are the difference between quantities of material sold into the market versus quantities of recycled materials baled and marketed. This includes residue from material recycling facilities.

Step 3: Administrative, promotion and education costs and growth/inflation rates

Promotion and Education Costs[1]	$1.00/HH	$USD
Program Management Fees[2]	5%	Percentage
Inflation Rate[3]	4%	Percentage
Recycling Material Growth Rate[4]	2%	Percentage

[1] User defined value. Initial assumption of $1 per household is taken from the KPMG Blue Box Best Practices Report

[2] User defined value. Initial assumption of 5% of total system costs is taken from the KPMG Blue Box Best Practices Report

[3] User defined value. Initial assumption based off of the trailing 12 month average for inflation

[4] User defined value

3.0 Modeling of Direct Costs

Using the aforementioned assumptions, we can now calculate the direct cost incurred by industry as a result of proposed EPR legislation for packaging. As noted previously, a range of cost scenarios have been modeled in an attempt to reflect a "low, medium and high cost" estimate.

For the purposes of brevity, only the medium cost scenario is shown. For a detailed breakdown of the low and high cost scenarios, please refer to the cost model excel file that is intended to accompany this report (and can be found online: https://www.yorku.ca/euc/research/circular-innovation-hubdev/wp-content/uploads/sites/921/2025/03/EPR-Study-New-York-2025.docx).

Figure 1: Total Direct System Costs – Medium Cost Scenario

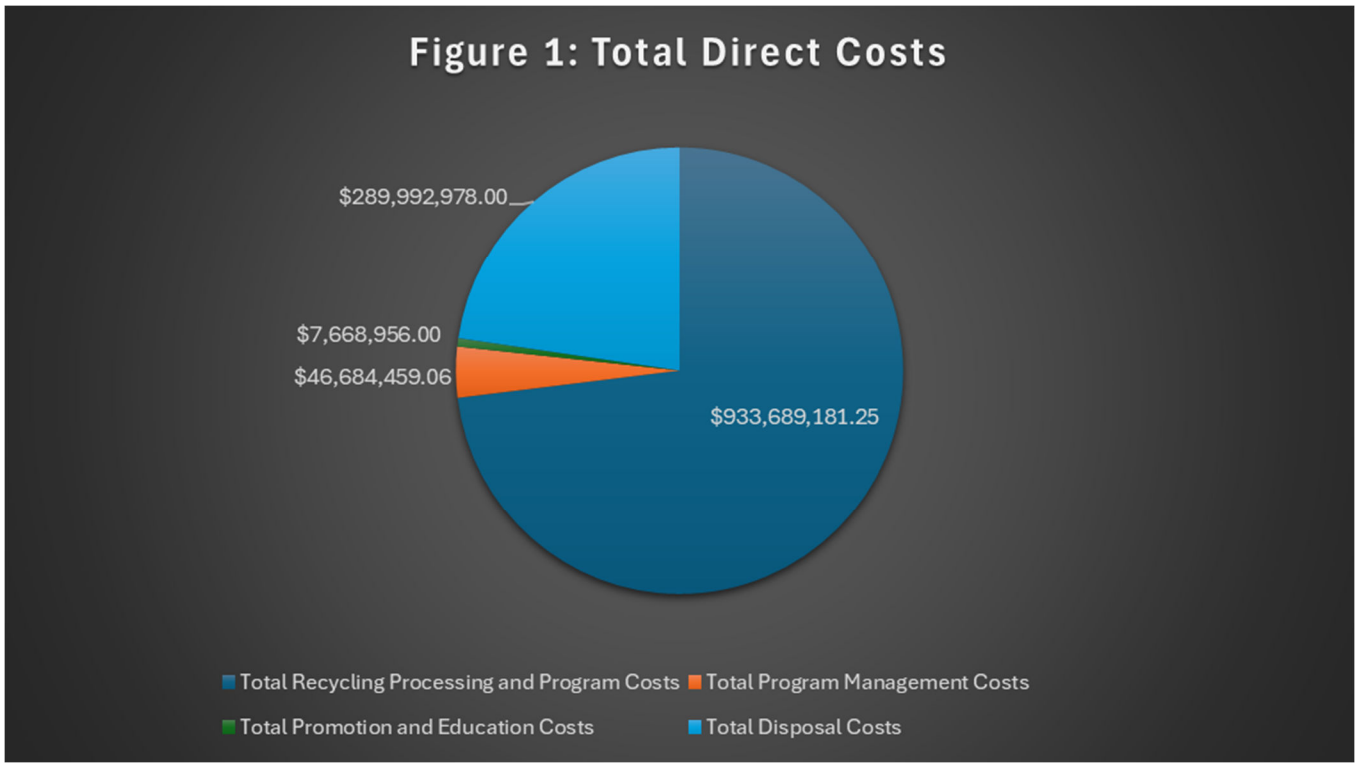

Table 2: Breakdown of Total Direct System Costs

Category	Calculation	Total
Total Recycling Processing and Program Costs	(3,048,781t x $306.25/t)	$ 933,689,181.25
Total Program Management Costs	(5% x $933,689,181.67)	$ 46,684,459.06
Total Promotion and Education Costs	($1 x 7,668,956HH)	$ 7,668,956.00
Total Disposal Costs	($99/t x 2,929,222t)	$ 289,992,978.00
Total Costs		**$1,278,035,574.31**

Table 3: 5 year projected direct system costs (total and per household)

	2025	2026	2027	2028	2029
Total Costs	$ 1,278,035,574.31	$ 1,331,605,705.26	$ 1,388,679,192.90	$ 1,449,473,967.16	$ 1,514,221,306.65
Total Cost Increase Per Household (Based on Direct Costs Only)	$166.65/HH	$173.64/HH	$181.08/HH	$189.01/HH	$197.45/HH

Total Direct Costs Over 5 Year Period	$6,962,015,746.30
Total Cost Per Household Over a 5 year period	$907.82/HH

As shown in figure 1 and tables 2 and 3, annual direct system costs attributable to the adoption of extended producer responsibility is $1,278,035,574.31 annually, and projected to be $6.962 billion dollars over a five year period.

But what are these costs, and how are they expected to impact households in New York State? After all, if the cost is borne by industry and the financial burden of waste collection/recycling removed from municipalities/counties, the initial expectation is that the adoption of EPR legislation would be of net benefit to consumers.

However, this isn't necessarily the case – in fact, there is strong evidence to suggest that the adoption of EPR legislation will negatively impact households in the form of increased costs of common consumer goods. To better understand how this occurs, we must now consider the following:

- How do producers/manufacturers respond to an increase in costs?
- How does the shift in responsibility from local government to industry impact household taxation rates?
- What are the secondary and tertiary impacts of EPR legislation on the broader economy?

4.0 Assumptions and Considerations

4.1 Determine the Impact of EPR on the Municipal Tax Base

A frequently cited argument by proponents of extended producer responsibility (EPR) is that it will lead to a reduction in the municipal tax base by shifting the financial burden of recycling programs from taxpayers to producers. When New York State announced its transition to EPR, advocates claimed it would save taxpayers hundreds of millions of dollars annually. However, these claims lack substantial empirical support, and the actual fiscal impact on municipalities remains uncertain and nuanced.

Municipalities, especially in the post-COVID economic landscape, are facing substantial budget deficits driven by increased demands for social services, infrastructure repairs, and other essential public programs. The expectation that savings from the transition of recycling programs, such as the Blue Box program, will translate into direct tax relief for households is speculative at best. Historical data from jurisdictions such as British Columbia and Ontario, which have fully transitioned to EPR systems, indicate no discernible reduction in household tax burdens. In fact, municipal property taxes in both provinces have seen consistent increases over the past six years, suggesting that any savings achieved through EPR have been reallocated to other municipal services and budgetary needs.

Additionally, transitioning to EPR does not eliminate municipal involvement in waste management entirely. Cities still incur costs related to enforcement, public education, and administrative oversight of recycling programs. These residual costs mean that municipalities

continue to bear financial burdens, albeit in different forms, rather than experiencing the promised windfall in tax relief.

It is crucial to consider that EPR policies do not operate in a vacuum; they interact with broader municipal financial dynamics. Savings realized from shifting recycling costs to producers may be absorbed by other rising expenses such as labor costs, inflationary pressures, and pension liabilities. This reallocation of funds means that the expected direct financial benefit to taxpayers is often overstated and can create a misleading narrative about the true economic impact of EPR.

4.2 Determine How Producers Respond to the Increased Obligation

The response of producers to the financial obligations imposed by EPR legislation is a critical factor in assessing its overall economic impact. Based on experiences in other jurisdictions, it is unlikely that producers will fully absorb the added recycling costs internally. Instead, they are expected to pass these costs down the supply chain, ultimately impacting consumers and other stakeholders.

Producers have two primary avenues to respond to increased EPR-related costs:

a) Passing Costs to Consumers: The most common response observed globally involves producers increasing the prices of packaged goods to compensate for the new regulatory expenses. Studies, such as those conducted by Kinnaman et al. (2020), estimate that up to 80% of these costs are transferred to consumers. This estimate underscores the significant financial burden that consumers will bear, particularly for essential goods where demand is relatively inelastic. These price increases can disproportionately impact low-income households that spend a larger portion of their income on necessities.

b) Operational Contraction: While less common, some producers may choose to downsize their operations, reducing workforce numbers or limiting product availability to mitigate financial pressures. This response could result in job losses and decreased market competition, which may further exacerbate economic challenges. In some cases, smaller producers may struggle to absorb additional costs and could be forced out of the market entirely, leading to market consolidation and reduced consumer choice.

It is important to acknowledge the limitations of cost-passing strategies. In markets where consumers can readily switch to the same product in a different packaging format that is less affected by EPR costs, demand elasticity limits producers' ability to pass costs onto consumers. This dynamic creates competitive pressure, forcing some producers to absorb a portion of the costs rather than risk losing market share. However, for products with no viable packaging alternatives, price increases are more easily sustained, disproportionately affecting consumers.

4.3 How Does the Adoption of EPR Impact Consumer Prices?

The implementation of EPR policies has a direct and measurable effect on consumer prices across a wide array of goods. Under EPR, producers are required to cover the costs associated with post-consumer recycling of their packaging materials, introducing an additional financial burden that is typically passed on to consumers in the form of higher retail prices.

Key sectors affected by EPR-driven price increases include:

- Food and beverage products
- Electronics and appliances
- Personal care and household items
- Packaging-intensive consumer goods

As prices for these everyday essentials rise, consumer purchasing power diminishes, forcing households to allocate a larger portion of their budget to necessities and reducing their ability to spend on discretionary items. This shift in spending patterns has broader economic implications, including decreased demand for non-essential goods, slower retail sales growth, and potential job losses in sectors reliant on discretionary spending.

Moreover, the increased cost of goods due to EPR fees can trigger a multiplier effect within the economy. Higher prices lead to reduced consumer spending, which in turn affects business revenues, resulting in potential cutbacks in employment and investment. The cumulative effect of these changes can contribute to slower economic growth and a contraction in economic activity.

It is also worth noting that the impact of EPR on consumer prices is not uniform across all demographics. Low-income households are disproportionately affected as they have limited ability to absorb price increases, potentially exacerbating socio-economic inequalities. Additionally, rural communities, which often have fewer retail options, may experience even greater price hikes due to increased transportation and logistics costs associated with EPR compliance.

In conclusion, while the intent of EPR is to promote sustainable waste management, the economic trade-offs cannot be overlooked. Policymakers must carefully evaluate the unintended consequences of EPR, including its impact on household budgets, economic growth, and market competitiveness, to ensure that sustainability goals are achieved without imposing undue financial strain on consumers and businesses.

4.4 What is the money multiplier effect?

There is no universal consensus among economists regarding the precise money multiplier effect stemming from declines in consumer spending, as the multiplier is highly dependent on broader economic conditions, fiscal policies, and consumer confidence. However, most economic models

estimate the consumer spending multiplier to fall within the range of 2 to 5, highlighting its significant impact on the economy. The consumer spending multiplier refers to the cascading effect that an initial change in consumer expenditure has on the overall economy, as spending by one household becomes income for another, fueling further consumption and economic activity.

4.41 *Theoretical Underpinnings and Empirical Evidence*

According to macroeconomic theory, the consumer spending multiplier typically exceeds that of investment spending because a higher proportion of consumer spending is directly channeled into household incomes, which are more likely to be spent rather than saved. This is particularly true for lower- and middle-income households, which tend to have a higher marginal propensity to consume (MPC). During periods of economic expansion, economists estimate that the consumer spending multiplier could rise to as high as 5 to 7, meaning that a $1 reduction in consumer spending could potentially result in a $5 to $7 decline in GDP. In contrast, during economic downturns or recessions, when businesses and consumers are more cautious and savings rates increase, empirical studies suggest that the multiplier effect moderates to a range of 2 to 3. For instance, analysis conducted by the International Monetary Fund (IMF) frequently cites multipliers of 1.5 to 2.5, depending on the stage of the business cycle.

Various fiscal policy interventions provide further insights into the range of possible multiplier effects. Programs such as direct stimulus checks, food assistance programs, and unemployment benefits typically yield multiplier effects in the range of 1.5 to 2.5, with larger impacts observed during times of economic distress when liquidity-constrained households are more likely to spend additional income rather than save it. However, in more stable economic conditions, consumer confidence and spending habits tend to amplify the multiplier effect, often ranging between 3 and 5, reinforcing the central role of consumption in driving economic activity.

4.42 *Implications of EPR Cost Pass-Through on the Economy*

Extended Producer Responsibility (EPR) policies, which shift the financial burden of waste management and recycling onto producers, often lead to cost pass-through to consumers in the form of higher product prices. These price increases, even if incremental, can lead to reduced discretionary spending, as households adjust their budgets in response to higher everyday expenses. Given that consumer spending accounts for over two-thirds of U.S. GDP, even a moderate spending contraction can have outsized effects on economic growth.

For example, if EPR policies result in an average price increase of $100 per household annually, this could translate into a $300 contraction in economic output under a conservative multiplier assumption of 3. This ripple effect extends across multiple sectors, affecting retail, hospitality, and services, which are heavily reliant on discretionary consumer spending. Furthermore, as businesses experience declining revenues due to reduced consumer demand, they may respond by cutting labor costs, leading to potential job losses and further contractions in household spending, creating a feedback loop that exacerbates economic downturns.

4.43 *Sectoral and Distributional Effects*

The impact of EPR-driven cost increases is not uniformly distributed across the economy. Lower-income households, which allocate a higher proportion of their income to essential goods and services, are disproportionately affected by price increases, leading to sharper declines in their discretionary spending. This, in turn, dampens demand in industries that rely on broad-based consumer participation, such as retail and entertainment, amplifying the multiplier effect. Additionally, small and medium-sized enterprises (SMEs), which have thinner profit margins and limited ability to absorb demand shocks, may experience heightened financial strain, potentially leading to business closures or reduced hiring.

Moreover, geographic variations play a role in determining the magnitude of the multiplier effect. Regions with higher levels of economic activity and diversification may be more resilient to declines in consumer spending, whereas areas with concentrated dependence on retail and service-based industries could face more pronounced economic challenges.

4.44 *Policy Considerations and Model Assumptions*

Given the complexities involved, policymakers must carefully consider the broader economic implications of EPR policies. While the environmental benefits of shifting responsibility for waste management to producers are well-documented, the unintended economic consequences should be mitigated through complementary measures, such as targeted subsidies, tax credits, or phased implementations to minimize sudden shocks to consumer budgets.

For the purposes of our economic modeling, we have assumed a conservative consumer spending multiplier of 3x, reflecting a balanced estimate derived from macroeconomic literature and real-world observations. This assumption allows us to approximate the potential GDP impact resulting from changes in consumer expenditure due to EPR-related price increases while maintaining a reasonable degree of caution in our projections.

In conclusion, understanding the multiplier effect of EPR costs on consumer spending is critical in designing policies that achieve environmental objectives without disproportionately harming economic growth and household welfare. The interplay between spending patterns, business responses, and broader economic conditions must be carefully monitored to ensure sustainable and equitable outcomes.

5.0 Phase 2 Modeling: Calculation of Total Economic Impact via the Money Multiplier

Based on our modeling of direct costs, we can now model indirect costs based on the following assumptions:

- Producers pass 80% of Direct Costs onto consumers
- Based on current economic conditions, we have assumed a money multiplier of 3x.

Table 4: Calculation of Total Economic Impact

Category	Calculation	Total
Direct Costs		$1,278,035,574.31
Costs Passed On to Consumers	($1,278,035,574 x 80%)	$1,022,428,459.45
Total Economic Impact Via Investment Multiplier	($1,022,428,459.45 x 3)	$3,067,285,378
Total Economic Impact (Direct Costs + Investment Multiplier)	**($1,022,428,459.45 + $3,067,285,378)**	**$4.09B**

Table 5: 5 year projected costs based on total economic impact (total and per household)

	2025	2026	2027	2028	2029
Total Economic Impact	$ 4,089,713,837.80	$ 4,261,138,256.84	$ 4,443,773,417.28	$ 4,638,316,694.93	$ 4,845,508,181.30
Total Cost Increase Per Household (Based on Total Costs)	$533.28/HH	$555.63/HH	$579.45/HH	$604.82/HH	$631.83/HH

Total Economic Impact (Over 5 Year Period)	$22.278B
Total Cost Per Household Over a 5 Year Period (Including Multiplier)	$2,905.02/HH

As shown in tables 4 and 5 above, the estimated total costs of EPR legislation is $4.09 billion dollars annually, and projected to be $22.28 billion dollars over the next 5 years. This translates into a total economic impact on a per household basis of $2905.02 over the same period.

It should be noted that the modeled economic impacts of EPR legislation are independent of inflationary pressures. These costs increases are solely attributed to the adoption of EPR for obligated materials. While any potential increases in the cost of consumer packaged goods is something that requires careful consideration, it is of particular concern at this time, as inflation on groceries and other consumer goods are at historic highs. Year over year price increases for some sectors are in excess of 10%, with consumer packaged goods being among the most affected items. A recent survey conducted by Bloomberg found that some participants noted as much as a 15% to 20% increase in the price of groceries, with more than 40% of respondents saying that they purchase fewer items as a result of increased prices.

While there is little consensus regarding the primary driver of inflation (i.e. increases in the money supply as a result of stimulus spending, low interest rates, supply chain disruptions etc.), consumer purchasing power has plunged at its fastest pace since 1982[1] (Between 2020 and 2024). As a result, any actions that could further exacerbate inflationary pressures must be approached with extreme caution, as households are already in an economically precarious situation. It is critical that the full range of economic impacts attributable to EPR legislation are fully understood before its implementation.

Previous investigations attempting to isolate the economic impact of EPR on the price of groceries have shown that cost increases can range from between 2 and 6%. These studies have

[1] https://wolfstreet.com/2021/06/10/it-gets-ugly-dollars-purchasing-power-plunged-at-fastest-pace-since-1982-its-permanent-not-temporary-wont-bounce-back/

also shown that low income and marginalized households are mostly likely to be adversely impacted by these cost increases (as low income groups consume more pre-packaged food items as a proportion of their budget relative to high income groups). While advocates of EPR often cite potential price increases as being "inconsequential", it is evident that any price increase, irrespective of magnitude, can have adverse economic impacts, particularly to vulnerable low income households.

6.0 Modeling the Impact of EPR Costs on Consumer Packaged Goods Prices

Using material-specific compliance costs and price pass-through rates, we model potential impacts on common grocery items. The following analysis assumes 80% pass-through of compliance costs from producers to retailers. This model reflects real-world pricing dynamics where producers and retailers adjust prices to maintain profit margins while transferring regulatory costs to consumers.

6.1 Identifying Cost Drivers Under EPR

EPR costs arise from multiple compliance obligations that vary in magnitude depending on the material involved. The primary cost drivers include:

1. **Packaging Collection & Sorting Fees** – These costs pertain to the collection of post-consumer packaging waste and its sorting into recyclable and non-recyclable materials. The complexity and cost of sorting depend heavily on the material type, with mixed materials and flexible plastics often being more expensive to process.
2. **Material Processing Costs** – Once sorted, materials must be processed at recycling facilities, also known as Materials Recovery Facilities (MRFs). The processing cost per ton can vary significantly, with materials like glass and flexible plastics requiring more intensive handling compared to aluminum or cardboard.
3. **Recycling Infrastructure Contributions** – Producers may be mandated to invest in recycling infrastructure improvements, particularly for materials that lack established recycling pathways, such as certain plastics. This investment adds to their compliance burden.
4. **Regulatory & Compliance Costs** – Administrative expenses related to reporting, monitoring, and ensuring compliance with EPR regulations also contribute to the overall costs. These can include fees for environmental assessments, certifications, and penalties for non-compliance.
5. **Consumer Education Costs** – EPR systems often require producers to fund public education initiatives aimed at improving consumer recycling behaviors. These costs, while indirect, contribute to the overall financial burden on producers.

The extent to which these costs affect retail prices depends largely on the material type. Heavily packaged goods or multi-material packages (e.g., aseptic cartons, flexible plastics) incur higher compliance costs due to the complexity of sorting and recycling. Conversely, lightweight

materials (e.g., aluminum cans), which have high recycling rates and established markets, typically incur lower costs.

6.2 DAIRY PRODUCTS

Product	Current Price	Packaging Material(s)	Package Weight (g)	% Increase	Impact	New Price
Milk (1 gallon)	$4.99	HDPE	60	3.2%	+$0.16	$5.15
Half Gallon Milk	$3.29	HDPE	35	3.0%	+$0.10	$3.39
Yogurt (32 oz)	$4.79	PP	45	2.9%	+$0.14	$4.93
Greek Yogurt (6-pack)	$5.99	PP + Cardboard	90	3.4%	+$0.20	$6.19
Cottage Cheese (16 oz)	$3.49	PP	30	2.8%	+$0.10	$3.59
Cream Cheese (8 oz)	$3.99	PP + Cardboard	25	3.3%	+$0.13	$4.12
Butter (1 lb)	$4.99	Paper + Foil	15	3.1%	+$0.15	$5.14
Heavy Cream (1 pt)	$3.79	Paper Carton	20	2.7%	+$0.10	$3.89
Sour Cream (16 oz)	$2.99	PP	30	2.8%	+$0.08	$3.07

6.3 DRY GOODS AND PANTRY ITEMS

Product	Current Price	Packaging Material(s)	Package Weight (g)	% Increase	Impact	New Price
Cereal (18 oz)	$5.49	Cardboard + Liner	45	3.5%	+$0.19	$5.68
Pasta (16 oz)	$2.29	Cardboard	20	2.8%	+$0.06	$2.35
Rice (5 lb)	$6.99	Flexible Plastic	30	3.8%	+$0.27	$7.26
Crackers (13 oz)	$4.59	Mixed Plastic	25	3.6%	+$0.17	$4.76
Chips (Family Size)	$4.99	Metalized Film	20	3.7%	+$0.18	$5.17
Coffee (12 oz)	$8.99	Mixed Materials	35	3.9%	+$0.35	$9.34
Cookies (16 oz)	$4.49	Plastic Tray + Film	40	3.6%	+$0.16	$4.65
Nuts (16 oz)	$8.99	Plastic Jar	45	3.4%	+$0.31	$9.30
Candy Bar (Multi)	$5.99	Film + Cardboard	30	3.5%	+$0.21	$6.20

6.4 FOOD AND BEVERAGES

Product	Current Price	Packaging Material(s)	Package Weight (g)	% Increase	Impact	New Price
Juice (64 oz)	$4.29	PET	45	3.5%	+$0.15	$4.44
Sports Drink (32 oz)	$2.99	PET	35	3.3%	+$0.10	$3.09

Product	Current Price	Packaging Material(s)	Package Weight (g)	% Increase	Impact	New Price
Coffee (K-cups 12ct)	$11.99	Mixed Plastic + Foil	60	4.2%	+$0.50	$12.49
Tea (20 bags)	$4.59	Paper + Film	25	3.1%	+$0.14	$4.73

6.5 CLEANING AND HOUSEHOLD PRODUCTS

Product	Current Price	Packaging Material(s)	Package Weight (g)	% Increase	Impact	New Price
Laundry Detergent (100 oz)	$12.99	HDPE	85	5.2%	+$0.68	$13.67
Dish Soap (24 oz)	$3.99	HDPE	40	4.8%	+$0.19	$4.18
All-Purpose Cleaner	$4.29	PET + Trigger	50	5.0%	+$0.21	$4.50
Bleach (64 oz)	$3.99	HDPE	60	5.1%	+$0.20	$4.19
Surface Wipes	$4.59	HDPE + Film	45	5.3%	+$0.24	$4.83
Glass Cleaner	$3.89	PET + Trigger	48	4.9%	+$0.19	$4.08
Drain Cleaner	$6.99	HDPE	55	5.4%	+$0.38	$7.37
Air Freshener	$4.99	Aerosol Can	35	5.2%	+$0.26	$5.25

6.6 PERSONAL CARE PRODUCTS

Product	Current Price	Packaging Material(s)	Package Weight (g)	% Increase	Impact	New Price
Shampoo (22 oz)	$6.99	HDPE/PET	45	4.8%	+$0.34	$7.33
Body Wash (18 oz)	$5.99	PET	40	4.6%	+$0.28	$6.27
Toothpaste	$3.99	Laminate + Box	30	4.7%	+$0.19	$4.18
Deodorant	$4.99	Mixed Plastic	25	4.9%	+$0.24	$5.23
Face Cream	$8.99	Glass + Plastic	35	5.1%	+$0.46	$9.45
Hair Spray	$5.99	Aluminum + Plastic	40	5.0%	+$0.30	$6.29
Hand Lotion	$4.99	PET/HDPE	35	4.7%	+$0.23	$5.22
Sunscreen	$9.99	HDPE/PP	45	4.8%	+$0.48	$10.47

6.7 Understanding Variation in Cost Increases by Material and Packaging Characteristics

The impact of EPR on consumer prices varies significantly depending on the type of material used, the size and weight of the packaging, and the characteristics of the product being contained. Three primary factors influence the percentage increase in price for different products:

6.71 Material Type and Recycling Cost Differences

Not all packaging materials incur the same recycling costs. Materials that are easily recyclable and have strong end markets, such as aluminum and cardboard, tend to experience lower EPR-related cost increases. In contrast, complex, multi-material packaging and low-recyclability plastics face significantly higher compliance fees due to difficulties in collection, sorting, and reprocessing. This dynamic is reflected in the following trends:

- Aluminum Packaging (e.g., soda cans): Low price increases (2.5% range) due to high recyclability and market demand for recycled aluminum.
- Cardboard and Paperboard (e.g., cereal boxes, paper cartons): Moderate increases (2.8%–3.5%) due to well-established recycling infrastructure, but affected by contamination issues.
- Rigid Plastics (HDPE, PET, PP) (e.g., milk jugs, yogurt containers, detergent bottles): Higher cost increases (3.0%–5.4%) due to sorting complexity and fluctuating demand for recycled plastic.
- Flexible Plastics and Multi-Material Packaging (e.g., chip bags, candy wrappers, coffee pods): Highest cost increases (3.8%–5.5%) due to poor recyclability, contamination risks, and lack of processing infrastructure.

6.72. Packaging Size, Weight, and the Cost Per Unit Sold

Larger and heavier packaging formats distribute the EPR cost across a greater volume of product, often leading to a lower percentage increase per unit. Conversely, smaller and single-use packages are more vulnerable to cost increases due to their inefficient material-to-product ratio. Examples include:

- Larger format products (e.g., gallon-sized milk jugs, bulk rice bags) tend to see smaller percentage price increases because the cost per unit of material is spread over a larger quantity of product.
- Single-serve and small package sizes (e.g., snack-sized chip bags, travel-size shampoo bottles) experience more pronounced price increases because the EPR fee represents a higher proportion of the total production cost.

For example, a large family-sized cereal box (18 oz) in cardboard packaging may see a 3.5% increase in price due to EPR fees, whereas a small, single-serve plastic-wrapped snack pack could experience a 5% or higher increase due to the greater relative cost per gram of packaging material.

6.73. Characteristics of the Product Contents

Certain products require specialized packaging to preserve freshness, prevent contamination, or enhance durability. These additional requirements often result in higher-cost packaging materials, such as multi-layer plastic films, foil-lined pouches, or composite packaging, which in turn face greater price increases under EPR regulations. Key examples include:

- Perishable dairy and meat products: Require barrier-protected plastic or multi-material packaging, leading to above-average price increases (e.g., Greek yogurt multipacks and cheese slices).
- Beverages in plastic bottles: PET packaging incurs higher costs compared to aluminum cans, making plastic-bottled beverages more susceptible to EPR-driven price increases.
- Cleaning and personal care products: Thick plastic containers used for detergents, shampoos, and lotions see some of the highest cost increases (4.8%–5.4%), reflecting the expense of handling post-consumer plastic waste.

6.8 Implications for Consumers and Industry

The variation in EPR-related cost increases has significant implications for both consumers and industry. One of the most immediate consequences is the financial strain placed on consumers, particularly those who rely on single-serve or individually packaged products. These smaller package formats experience the highest percentage increases because EPR compliance costs are distributed over a smaller quantity of product, making the packaging costs a larger proportion of the overall price. This disproportionately affects lower-income households, which often purchase smaller package sizes due to budget constraints, making them more vulnerable to rising costs.

Another major implication is the potential for producers to reformulate packaging to mitigate costs. In response to EPR-driven price increases, many manufacturers may seek alternative packaging solutions that are either cheaper to recycle or exempt from the highest compliance costs. This could include shifting from flexible plastics to recyclable paperboard cartons or eliminating multi-material packaging where possible. While this may be a positive step for recyclability and waste reduction, such transitions may also introduce new supply chain challenges, including potential disruptions in packaging availability and the need for new processing technologies.

The economic impact of EPR also extends to purchasing behaviors. As bulk-sized products generally experience lower percentage increases, consumers who can afford to do so may shift toward buying in larger quantities to reduce their cost per unit. This would reinforce existing disparities, where wealthier consumers benefit from the ability to purchase in bulk, while lower-income consumers face greater financial pressure due to higher relative costs of smaller packages. Additionally, some product categories will face greater economic strain than others. Dairy products, cleaning supplies, and personal care items, which rely heavily on plastic packaging, will likely experience the most substantial price increases. Meanwhile, products

packaged in aluminum or cardboard, such as canned beverages and dry goods, will see smaller price hikes due to their high recyclability and strong secondary markets.

Another concern is that EPR policies may unintentionally lead to unintended consequences in consumer choices. While some may prioritize sustainability and choose products with lower environmental impact, others may opt for lower-cost, non-recyclable alternatives if price pressures become too great. This could undermine the environmental objectives of EPR if cost-conscious consumers turn to less sustainable options due to affordability concerns. Furthermore, some manufacturers may choose to pass the cost burden disproportionately onto specific product lines, making certain goods less competitive in the market.

Ultimately, EPR policies create a complex economic landscape where cost burdens are unevenly distributed across consumers and industries. While they encourage sustainability by incentivizing recyclable packaging, they also impose significant financial costs, which are ultimately borne by consumers. Policymakers must carefully consider these implications to ensure that EPR programs achieve their environmental goals without disproportionately impacting consumers, particularly those in vulnerable economic positions.

1. **Consumers Will Pay More for Convenience and Portability**
    - Single-serve and individually packaged products will see higher price increases, disproportionately impacting lower-income consumers who rely on smaller package sizes due to budget constraints.
2. **Producers May Reformulate Packaging to Reduce Costs**
    - Manufacturers may opt for packaging that is easier and cheaper to recycle (e.g., switching from plastic pouches to recyclable paperboard cartons) to mitigate EPR-related cost increases.
3. **Larger Packages Will Offer Better Value**
    - Bulk-size products will see smaller relative cost increases, encouraging consumers to shift towards larger purchases if they can afford to do so.
4. **Certain Product Categories Face Greater Economic Strain**
    - Dairy, cleaning products, and personal care items are among the most heavily impacted due to reliance on plastic packaging, while aluminum-packaged beverages and cardboard-based goods face smaller cost impacts.
5. **Low-Income Households Will Be Disproportionately Affected**
    - Consumers in lower-income brackets tend to purchase more pre-packaged goods (e.g., frozen foods, convenience snacks), which often use harder-to-recycle packaging materials. These groups will therefore experience higher relative cost burdens from EPR policies.

Based on this updated study, the estimated total price impact on a "basket of goods" (packaged goods) has increased. The new range is: 4.25% to 6.75% increase in the cost of packaged goods. This translates to $38 to $61 per month in additional grocery costs for the average family of four in New York State.

7.0 Conclusion

While Extended Producer Responsibility (EPR) aims to internalize the environmental costs of waste management by making producers financially responsible for the post-consumer phase of their products, the findings of this study underscore significant economic implications that must be carefully considered. The adoption of EPR in New York State has the potential to impose substantial new costs on producers, which, based on economic modeling and real-world experiences from other jurisdictions, are likely to be passed down to consumers in the form of higher prices on essential goods and services.

The direct financial burden placed on producers—estimated at over $1.2 billion annually—will not exist in isolation. Producers, seeking to maintain profitability and competitiveness, will transfer a significant portion of these costs to consumers by raising prices on packaged goods, food products, household items, and electronics. This cost pass-through effect, combined with the consumer spending multiplier effect, results in far-reaching economic consequences that extend well beyond the initial fee structure imposed by EPR legislation.

Using a conservative money multiplier assumption of 3x, the total economic impact of EPR implementation is projected to exceed $4 billion annually, translating to approximately $2,905 on a per household basis over five years. This shift in financial responsibility could significantly constrain household budgets, leading to reduced discretionary spending, decreased business revenues, and potential job losses in sectors reliant on consumer expenditures. Such outcomes have the potential to disproportionately affect low- and middle-income households, which dedicate a larger share of their income to everyday necessities and have less financial flexibility to absorb price increases.

Furthermore, the interplay between rising inflation, supply chain disruptions, and increasing energy costs compounds the financial strain on consumers. With inflationary pressures recently at historic highs, even minor price increases due to EPR could exacerbate economic hardships for vulnerable populations. Previous studies have shown that the cost increases resulting from EPR-related producer fees can range from 2% to 6% on grocery items alone, disproportionately impacting marginalized communities that rely more heavily on pre-packaged food products.

Additionally, the anticipated municipal cost savings—one of the core justifications for EPR—may not materialize as expected. While EPR shifts recycling program costs from taxpayers to producers, municipalities will still incur residual expenses related to waste management oversight, enforcement, and public education efforts. Empirical evidence from other jurisdictions, such as Ontario and British Columbia, suggests that municipal tax relief following EPR implementation has been limited, with many municipalities reallocating funds to address other pressing budgetary needs rather than reducing household tax burdens.

From a broader economic perspective, the long-term implications of EPR must also consider potential market distortions. Increased compliance costs could deter investment, limit product innovation, and reduce the competitiveness of smaller businesses that lack the economies of

scale to absorb additional financial burdens. Market consolidation among larger producers, while improving recycling efficiency in some cases, could also reduce consumer choice and stifle competition in the marketplace.

While the objectives of EPR—promoting a circular economy and reducing environmental externalities—are commendable, this study highlights the need for a cautious and measured approach to policy implementation. A well-designed EPR framework should seek to minimize financial burdens on households, support business adaptation, and ensure that sustainability goals are achieved without jeopardizing economic stability. Failure to fully account for the economic consequences of EPR risks creating a policy environment where environmental progress comes at the cost of consumer well-being and business competitiveness.
Therefore, a holistic and adaptive policy approach, informed by economic data and stakeholder input, is essential to achieving a balanced outcome that benefits both the environment and the economy of New York State.