

OCTOBER 2023

Pricing Transparency in the Recycled Plastics Supply Chain in India, Indonesia, Thailand, and Vietnam

Executive Summary



The
Circulate
Initiative

Context

Recycled plastics markets in India and Southeast Asia face multiple demand- and supply-linked bottlenecks along the value chain, including a lack of transparency in the pricing of plastic waste feedstock and recycled plastics. This opacity results in fluctuating demand and supply, poor capacity utilization at recycling facilities, and, ultimately, challenges for brand owners to meet commitments on using recycled content in plastic packaging. Data on prices is critical for strategic planning at all levels. In the absence of pricing data, brands and other buyers of recycled plastics set targets that are out of sync with market realities.

This executive summary provides key takeaways from the report, [“Pricing Transparency in the Recycled Plastics Supply Chain in India, Indonesia, Thailand, and Vietnam”](#). The report provides insights into the pricing structure of the plastics supply chain, the drivers of the price of recycled plastics, and the gains from trade for each player along the supply chain (i.e., collectors, aggregators, and recyclers) in four countries — India, Indonesia, Thailand, and Vietnam. It also evaluates the potential impact of various policy interventions on the volume of plastic waste collected and recycled, and the potential distribution of the additional value generated across the supply chain if these policies are implemented.



Key Takeaways

The five key takeaways from this study are summarized below.

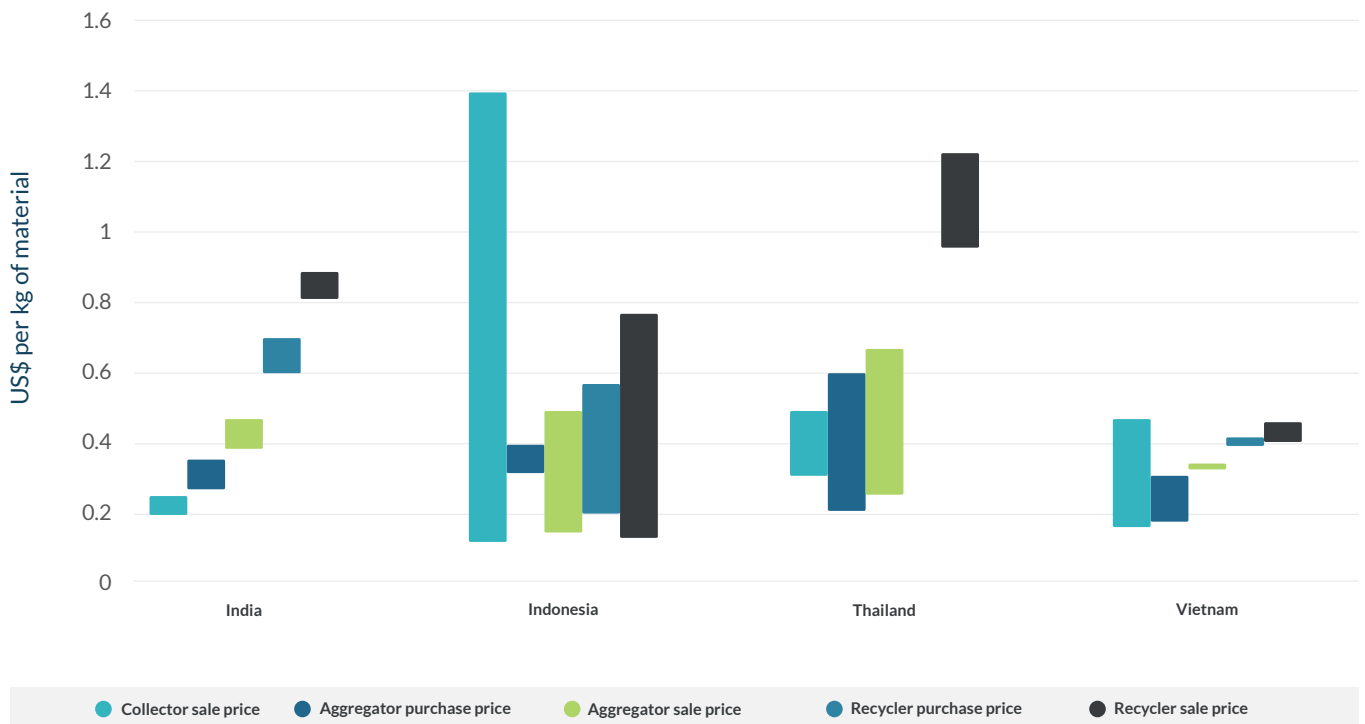
1 Lack of alignment in price points between supply chain actors is an indicator of a lack of pricing transparency

Despite being a commodity-like product, the market value and price of recycled plastic are not well defined at each stage of the supply chain. This misalignment in prices is more prevalent in the earlier stages of the supply chain (collectors and aggregators), but is still observed at the latter stages.

2 The significant variation in prices among the same actors adds to a complex supply chain for material quality, consistency, and prices

Material prices at even the same stage of the supply chain vary significantly, despite similar activities and outputs, such as bales, flakes, and pellets. There are a variety of reasons for this discrepancy, for example, differences in processes, in material quality, regional differences or inconsistent material specifications. It is also indicative of markets where there are no “market prices” that are well understood by all parties.

Figure 1: rPET price ranges as collected through the interviews (in US\$)



Note: The price ranges provided above are for collectors’ sales price, and aggregators’ and recyclers’ purchase and sales price for rPET in each country. Please consult the full report for details on the price range for other polymers.



3 To increase recycling rates, a greater share of the total profits across the recycling supply chain must flow to informal waste workers

Across the four countries, the greatest share of the total gains from trade was attributed to recyclers. In the recycling value chain, recyclers tend to have the highest fixed and operational costs and take on greater risk among the value chain participants covered in the study. Hence, recyclers need to make sufficient profit to compensate for these costs and risks. However, the share of total profits that flows through the value chain, and to informal waste workers in particular – without which there would be no supply of recycled plastic in many countries – needs to increase if we are to significantly increase plastics recycling, and in turn for brands to meet their recycled content goals.

4 Supply chains require direct interventions by policy makers to become more efficient and develop

To overcome the current challenges associated with a lack of pricing transparency, additional practical interventions that

support sharing of knowledge, digital tracking of plastics, published market price points, and more involvement from industry bodies and regulators in standardizing material specifications can be considered.

5 The most impactful policy intervention in improving recycling output varies by country

Three policies were reviewed in each country to evaluate the impact of these policy interventions on the volume of plastic waste collected and recycled, and the potential distribution of the profits across the supply chain. Based on the modeling results, the implementation of a deposit return system (DRS) were observed to be most effective in India, minimum recycled content targets in Indonesia, and the formalization of the collection system in Thailand and Vietnam, to increase the volume of plastics recycled. Given the importance of informal waste workers to recycling in the four countries, any policy measures undertaken should integrate with existing waste collection systems and prioritize the inclusion of informal waste workers, who play a crucial role in plastic waste management in emerging economies.

Table 1: Policies ranked in terms of their effectiveness in improving the output of recycled PET

Rank	India	Indonesia	Thailand	Vietnam
1	Implementation of a Deposit Return System	Minimum Recycled Content Targets	Formalization of the Collection System	Formalization of the Collection System
2	Minimum Recycled Content Targets	Implementation of a Deposit Return System	Extended Producer Responsibility	Extended Producer Responsibility
3	Extended Producer Responsibility	Extended Producer Responsibility	Taxes on Virgin Polymers	Taxes on Virgin Polymers

Note: Input parameter values may impact findings. Please consult the full report and the model for details regarding the input parameters and the impact of the policy on the volume of plastics recycled, profits and prices.

The Way Forward

This study and its findings are a first attempt to examine the degree of pricing transparency in the recycled plastics value chain in each country. Recycled plastics markets in the four countries studied are highly complex and fragmented with a mix of formal and informal actors, where plastic waste and secondary products are traded between the two sectors. It is also important to note that the availability and quality of data vary due to the sensitivities associated with sharing information on prices. This presents a challenge in comprehensively assessing pricing transparency and its implications across the recycling industry. To gain a more comprehensive understanding and precise market data, similar studies will need to be undertaken in specific locations.

In the four countries, in order to provide the right economic signals to stimulate local investment in recycling, the benefits of rising market demand and any potential increase

in the price of recycled materials need to be distributed through the value chain. To increase recycling output, it is critical to improve the supply of plastic waste through collection. To do so, it is necessary to ensure that benefits in the supply chain flow down to more actors in the supply chain, in particular the informal waste workers who contribute to the bulk of the collection of plastic waste for recycling.

The pricing data collated through this study and the supply chain model will be vital tools in beginning the process of improving transparency within the supply chains. Through other measures, such as aligning policy levers, creating transparency in market structures, and recognizing the role of informal waste workers in the recycled plastics supply chains, a holistic approach can be employed to address the issue of pricing transparency.





The
Circulate
Initiative