

The PlastiCity Fund

Our fund address the fundamental challenge of plastic related pollution and related social and environmental issues by focusing on the issue of fragmented plastic recycling economics. Our proposal finances effective, innovative and scalable plastic sorting technologies in the United States, thereby narrowing the gap in unit economics between virgin and recycled plastic and catalyzing the transition of the United States towards a circular plastic economy.

The Problem

In 2017, only 8.4% of the 35M tons of plastic waste produced in the US was recycled, decreasing from 9% levels in 2015 and 2016.

China's National Sword Policy imposed a de-facto import ban of foreign recycled plastic, as China's share of US exports declined from 35% in 2017 to only 5% in 2018.

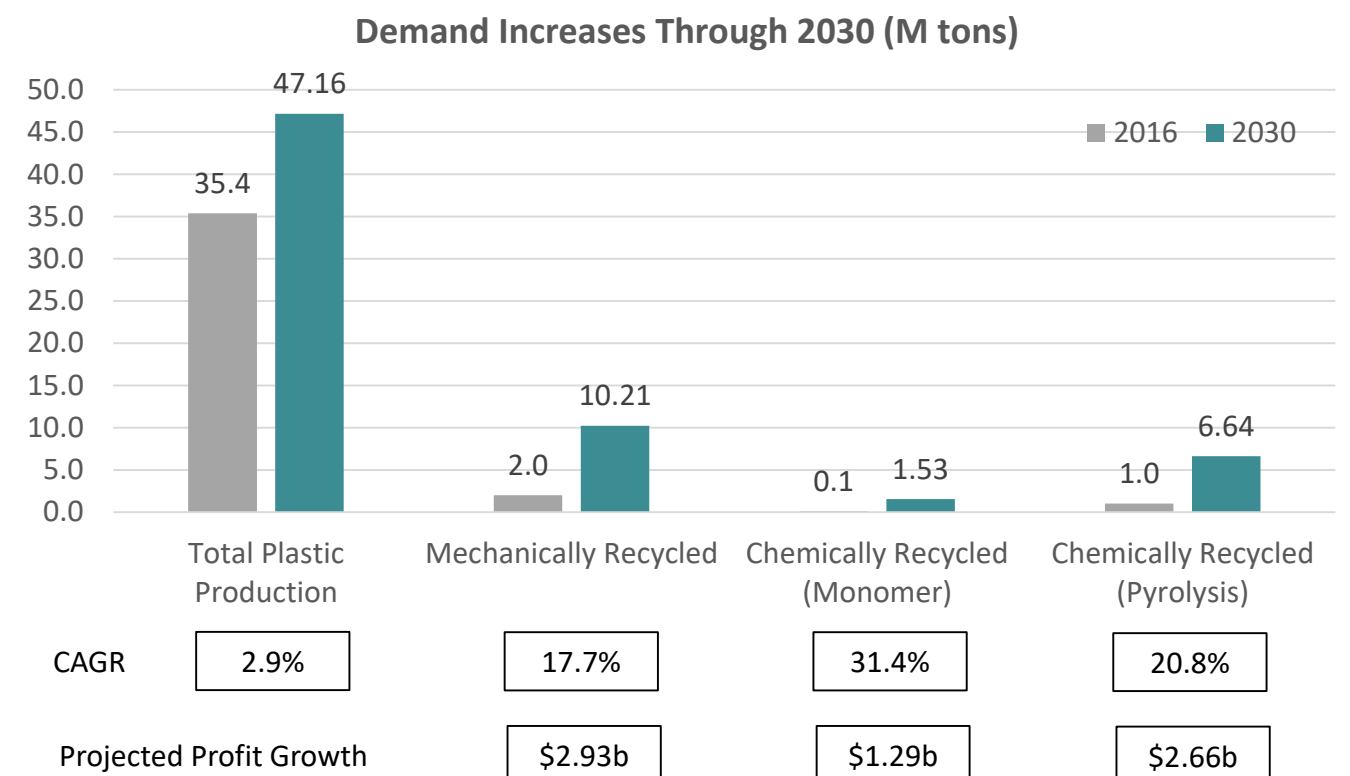
This former reliance on broad waste purchasing created an environment in which US Materials Recovery Facilities (MRFs) were not incentivized to invest in or improve their sorting processes.

The current MRF landscape is fragmented and distributed geographically, with roughly 360 MRFs across the country. These MRFs are highly labor intensive, on average employing 27 sorters, contributing to high processing costs relative to its end commodity value. Thin margins at these facilities are a hurdle for financing of capex investments, which presents the opportunity for PlastiCity.

The Opportunity

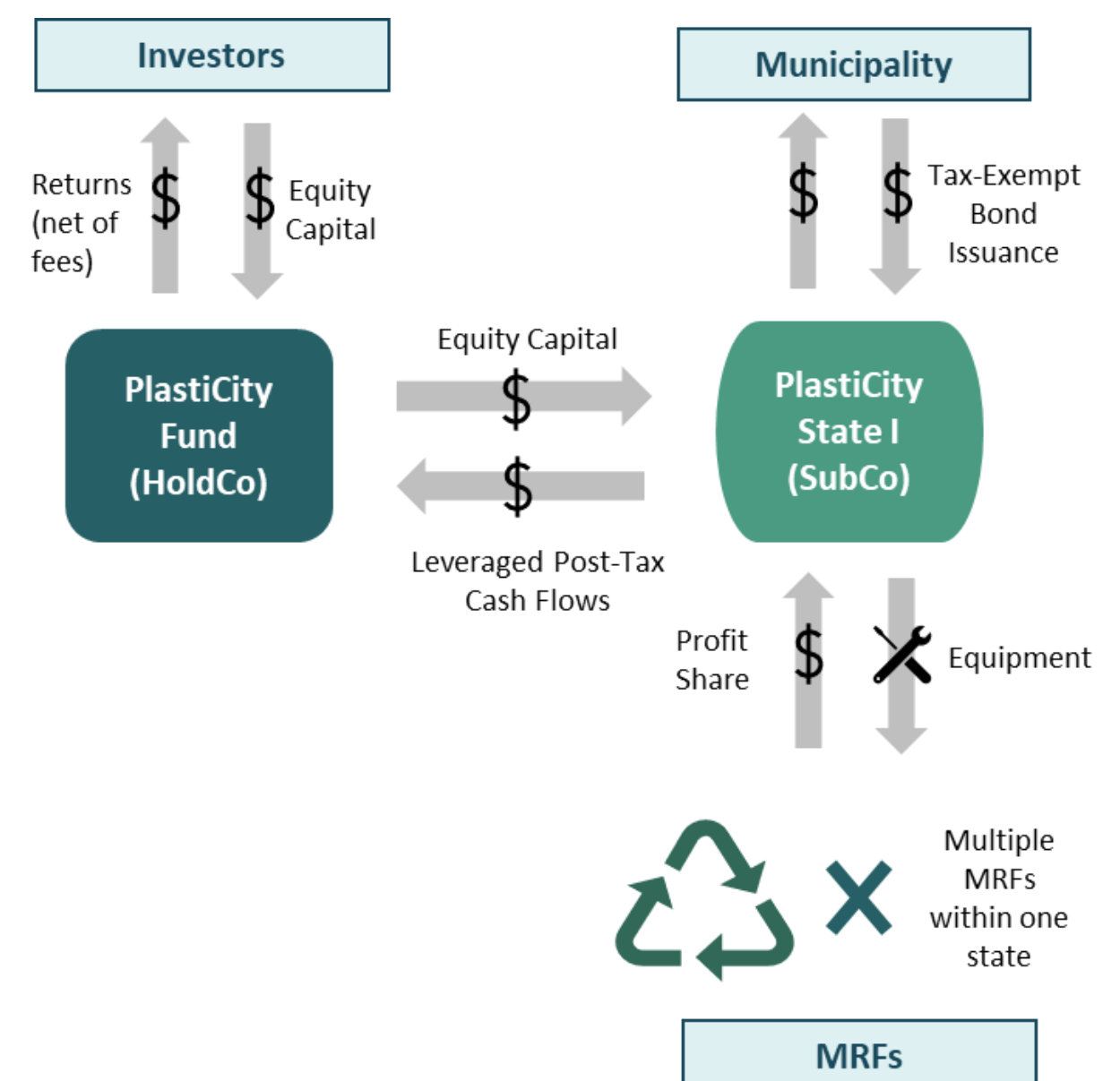
Recent corporate recycled content commitments and new recycling technologies have created downstream demand for recycled plastic that is projected to greatly increase in the coming years, with subsectors seeing CAGRs exceeding 30%.

However, to meet this demand both the quantity and quality of supply from MRFs need to increase.



Our Solution

- Our model will lower the cost of capital to provide investment for MRF sorting equipment by leveraging the municipal bond markets and partnering with MRFs to advance current recycling infrastructure.
- The new robotic optical sorting machinery will improve the quality & throughput of feedstock that is sent to processing facilities. These factors combined with increased demand due to the above market forces will drive marked revenue increases for MRFs.
- PlastiCity will raise equity on a HoldCo level that will be allocated to state-level subsidiaries, who will be the investment and debt issuance vehicles
 - Municipal private activity bond proceeds are restricted for use within a state.
 - Each state SubCo will have one bond issuance, where funds will be allocated across multiple MRFs in that state. Bond will be secured by equipment and assets.
- Incremental cash flow generated by equipment will be split 90/10 between PlastiCity and MRF
- For each state SubCo, at the earlier of year 15 (debt maturity) or upon which 12% equity IRR is achieved, cash flow allocations will flip with option to exit to MRF or other investor.



Stakeholder	Benefits	Key Metrics
MRFs	<ul style="list-style-type: none"> • Equipment Upgrade: Enabling improved quality and flexibility of sortation • Financial Scale: Ability to borrow on a multi-asset basis, lowering credit risk, interest rate, and transaction cost • Operational Incentive: Operational control of new equipment (with annual profit share at \$0 upfront cost) with opportunity to own 100% of equipment and profit after year 15 	<ul style="list-style-type: none"> • 22% commodity price increase • \$0 upfront cost
Municipality	<ul style="list-style-type: none"> • Increased Recycling: For each MRF upgrade, we estimate increase in recycling capacity of 9,000 tons • Reduced Emissions: On plastic tonnage alone, reduced CO2 emissions of over 2,000 ktons per year with each MRF invested 	<ul style="list-style-type: none"> • 9ktpa increased recycling • 2ktpa reduced CO2 emissions
Investors	<ul style="list-style-type: none"> • Attractive Returns: Higher than traditional infrastructure returns expected on cash flow generations, with additional upside upon early exit if target IRR is met • Strategic Investment: Early adopter opportunity for investors who are looking to allocate funds in a high growth, carbon-neutral/negative play, as demand for recycled products expected to grow exponentially within the next decade 	<ul style="list-style-type: none"> • 12% equity IRR

Cash Flows Explained

MRF Capex Expansion - Single Plant Summary

		Pre-Capex	Post-Capex	Δ
Annual Capacity	ktpa	89.4	89.4	0.0
Capacity Efficiency	%	60%	70%	10%
Total Production	ktpa	53.7	62.6	8.9
Average Bundled Sales Price	\$/t	\$45.8	\$55.8	\$10.0
Gate Tipping Fee	\$/t	\$43.0	\$43.0	\$0.0
Total Revenue	\$m	\$4.8	\$6.2	\$1.4
Average Processing Cost	\$/t	\$80.0	\$76.0	(\$4.0)
Total Processing Costs	\$m	\$4.29	\$4.76	\$0.5
Total Profit	\$m	\$0.47	\$1.43	\$1.0
Estimated Capex of Capacity	\$/t			450
Total Capex Cost	\$m			\$4.0
Equity IRR	%			13.5%

Table illustrates the impact of capex investment on an average sized MRF assuming an improvement in output quality and volume

Operational assumptions

- Based on available examples of new MRF construction and existing capex upgrades, assumed \$450/ton for 10% increase in capacity efficiency;
- No change in waste stream content %, only improvement in bundled sales price from plastics sorting;
- 5% improvement in processing cost due to lower labor usage/increase in efficiency; further upside possible.

Financial assumptions

- Tax-exempt debt at 3.5%, 15-year maturity
- 90%/10% cash flow allocation to Plasticity/MRF; cash flow flip once fund achieves 12% target IRR
- IRR assumes 10x exit of Plasticity's remaining 10% cash flows in year 11

Investment Criteria for MRF Selection

Robust addressable target market – of the ~360 MRFs in the US, we believe ~40% of current MRFs meet our investment criteria

Geographical

- Higher density of MRFs per capita for scalability
- Attractive tipping and commodity fees to maximize margin improvement
- State legislature reform for higher quality/lower contamination rates

Operational

- Smaller sized MRFs with limited financial resources and capabilities (55% of MRFs in North America are owned by the four largest haulers/waste companies)
- Less technological advanced, more labor-intensive operations where equipment upgrade would achieve highest:
 - Capacity efficiency/throughput increase
 - Quality of commodity product improvement
 - Reduction of processing cost

Sensitivities serve as benchmark for capital and operational target metrics to evaluate investment selection

		Bundled Commodity Sales Price Increase (%)					
		5%	10%	15%	20%	25%	30%
Unit Cost Decrease (%)	0%	-15%	1%	6%	8%	10%	12%
	2%	-1%	4%	8%	10%	12%	14%
	4%	3%	7%	9%	11%	13%	15%
	6%	6%	9%	11%	13%	14%	16%
	8%	8%	10%	12%	14%	15%	16%
	10%	9%	11%	13%	14%	15%	16%
		Capex Cost per Ton					
		\$200	\$300	\$400	\$500	\$600	\$700
Capacity Efficiency Increase (%)	10.0%	30%	16%	14%	11%	9%	8%
	12.5%	21%	15%	12%	9%	7%	6%
	15.0%	20%	14%	10%	8%	6%	4%
	17.5%	18%	12%	9%	7%	5%	3%
	20.0%	16%	11%	8%	6%	4%	1%
	22.5%	15%	11%	8%	5%	3%	0%

Risks and Mitigation

Risk	Mitigation
Pricing improvement for higher quality recycled plastic does not materialize	<ul style="list-style-type: none"> • While our model only incorporates margin improvement from higher quality plastic, sorting technology would also boost quality of paper and other recyclables, of which price premium could make up for lower than expected plastic pricing
Lower oil prices favor virgin compared to recycled plastic production	<ul style="list-style-type: none"> • Given robust commitments from plastic processors and end-users to source recycled plastic, demand could be bifurcated from virgin. Additionally, Plasticity can work with portfolio MRFs and customers to structure long-term offtakes
MRF resistance to implementation of new equipment and challenges of integrating technology into existing operations	<ul style="list-style-type: none"> • Latest robotic/optic technology incorporates AI and machine learning that allows MRFs to reprogram and adapt to changing industry dynamics, which will help them position for long-term profitability and sustainability • Profit share split can be adjusted on a case-by-case basis to incentivize participation

Fund Structure and Governance

Fund Type	Equipment and infrastructure financing
Geography	Select states in the United States
Fund Size	HoldCo Fund I to be \$25-\$35 million. Initial fund will allocate equity to 2 state SubCos, with 3-4 MRFs within each sub-fund
Target Leverage	60% debt, 40% equity (consolidated)
Investment Period	2-3 years structuring; max 15-year investment
Fund Life	15 years
Target IRR	12% IRR (gross)
Fees	2% mgmt. fees; 20% carry on returns above target 12%
Target Investors & Minimum Investment	<ul style="list-style-type: none"> • Environmental impact-focused institutional equity investors, with medium to long term return profile • Infrastructure or green municipal debt investors • Minimum investment of \$500,000
Fund Governance	<ul style="list-style-type: none"> • Plasticity management team will oversee financial reporting consolidation within each state SubCo • Establish three-person board with industry expertise to serve as advisors • Independent auditor to assess incremental profits generated from equipment upgrade

Sources

- The Recycling Partnership "Bridge to Circularity"
- Plasticsrecycling.org
- Resourcecycling.com
- EREF
- Closed Loop Partners

- Ellen MacArthur Foundation – New Plastics Economy
- The New Plastics Economy Global Commitment 2019 Progress Report
- Association of Plastic Recyclers
- KPMG – The Plastic Recycling Opportunity

- Resource Recycling Systems
- US EPA
- US Census Bureau