



A P.E.T. Circular Economy for the City of Phoenix

Executive Summary

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Due to recent action by China to eliminate the import of recycled material, the global recycling market as entered a period of great upheaval. China has stopped accepting recycled material from the United States forcing municipalities to scramble for solutions and this project looks at the complexities, barriers, and benefits of recycling polyethylene terephthalate (PET). Contrary to the popular opinion that municipalities, institutions and households should *always* recycle, when it comes to recycling there are economic pressures that many may not consider. In particular, this report focuses on the act of recycling PET which is heavily influenced by factors such as consumer behavior, market competition and global oil prices.

The City of Phoenix is hoping to process its PET and deliver a recycled plastic commodity to local manufactures as an economic and sustainable benefit. To test the feasibility of this idea, this project set out to gather primary source data from elite industry experts from across the country and gather quantitative and qualitative data to understand the industry. The goal of the report was to understand the complexities of the domestic, recycled PET market in order to make a set of recommendations aimed at increasing the circular capacity of our Phoenix's PET market.

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Primary source information was sourced by interviewing stakeholders from a variety of professions within the recycling industry. Around 25 interview questions ranged in topics from qualitative information about company origin stories to quantitative data regarding financial information or material flows throughout the country. Every interview was conducted in a conversational format, which often allowed for a more fluid exchange of ideas and information.

Given the timely nature of the research, there was very little academic literature associated with the recent changes in the recycling economy. The results of the report were a mix of exposing, surprising and validating as interview participants shared their first-hand experiences, opinions and knowledge. The most important findings of the report involved the financial expectations of running a PET processing facility in the Phoenix metropolitan area. Given certain local conditions, interview participants validated the proposal that Phoenix may be able to support a local processing center. Currently, Phoenix ships PET out of the state to be processed and if a local facility were to be built, it would dramatically reduce the existing footprint and costs associated with recycling the PET collected in Phoenix.

Research indicated that while the Phoenix market may be conducive for a PET processing facility it still has to improve certain conditions to increase its long-term success. Further research would be needed to look into how to increase local diversion rates. As of 2018, Phoenix currently collects recyclable material at a 30 percent diversion rate and increasing the diversion would not only allow Phoenix to process more material but also meet the city's official sustainability goals.