

Addendum

The Impact of Imports and Exports on US and Canadian Markets for Recycled Plastic

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The Import and export of virgin and recycled plastics to/from the US and Canada takes place when the difference in foreign and domestic pricing makes economic sense to do so. Generally, imports drive prices down as they provide cheaper alternatives, while exports instigate higher prices. This holds true for both virgin and recycled plastic. Factors that influence the margins between foreign and domestic markets include:

- Cheaper raw material and /or labor costs
- Logistical issues
- Shipping and internal transportation costs
- Currency and exchange rates
- Regulatory restraints
- Geopolitical considerations
- Other (Tax policy, tolling arrangements, strategic partnerships etc.)

These markets can be inconsistent due to the mercurial nature of these influences. Often, analysts that track these influences have trouble understanding how viable margins can exist. Nevertheless, international trade in post consumer plastic scrap has continued to develop, particularly for PET, where there are now PET reclamation plants operating in all parts of the world. On the other hand, international traders often exploit post consumer materials that have less developed markets, like Film and Mixed Rigids, that can take advantage of manual processing with cheap labor.

These types of operations often operate on the fringe of the law and can be closed by regulatory bodies for unacceptable working conditions, lack of environmental controls, violation of child labor laws etc., as witnessed by the recent shut down of a major film reclaimer in China. However, they continue to create both import and export opportunities that markets react to irrespective of how shaky their foundation.

A brief summary of the countries / regions that have the most influence on post consumer plastic recycling in the US and Canada is as follows:

Plastic Material Imported to the US and Canada from Other Countries/Regions

Country or Region	PC Bales	PC Dirty Flake	PC Clean Flake	PC Pellets	Virgin*
Mexico	X	X	X	X	X
South America		X	X	X	X
Central America / Caribbean	X	X	X	X	
China					X
India				X	X
Southeast Asia					X
Korea					X
Arabia					X
Europe	X		X		X

*includes pellets, fiber chip and secondary materials (such as fiber and sheet)

Plastic Materials Exported from the US and Canada to Other Countries

Country or Region	PC Bales	PC Dirty Flake	PC Clean Flake	PC Pellets	Virgin*
Mexico				X	X
South America					X
Central America / Caribbean					
China	X	X	X		
India	X				
Southeast Asia	X				
Korea					
Arabia					
Europe					

*includes pellets, fiber chip and secondary materials (such as fiber and sheet)

China: China is the largest import/export player globally, where a different economy exists and business decisions affecting whole industries are often made by government. Plastics (Loose translation), being one of the industries designated in the Chinese Law of Circular Economy, (Effective 1/1/2009) is coming under increased governmental control resulting in, among other things, a consolidation /replacement of many smaller assets with much fewer large ones.

This is true for both virgin and recycled plants and will allow decisions made with respect to the plastics industry to have a greater and quicker impact. It currently is re-asserting itself in the PET market with aggressive bale buying and virgin resin pricing, particularly for fiber chip. Chinese buyers also seek HDPE bales and provide alternative markets for film and mixed rigid bales. Historically, a good deal of this activity flowed through Hong Kong and was then “smuggled” into the mainland. The recent (re-) enforcement (known as “National Sword”) of regulations outlined in the Law of Circular Economy may change the Chinese market permanently or may prove to be another of the periodic exercises to exert government control. Either way the Chinese post consumer plastic recycling industry will continue to have a major impact on US and Canadian markets for both virgin and recycled materials.

Mexico, South America, Central America, Caribbean Nations: These countries collectively provide US reclaimers an additional supply of post consumer PET and in some cases HDPE bottles, mostly in the form of dirty flake. Historically these suppliers have provided US reclaimers the ability to augment domestic supplies particularly when there is more US demand than supply. That is now pretty much an ongoing condition. This has been further exacerbated by Canadian PET reclaimers buying an increasing amount of bales from the USA. The net result is that these additional volumes have kept PET bale prices from spiraling upward. They are also the result of buy-back programs or landfill scavenging which provide some supply elasticity so higher prices result in more bottles being collected. However, PET reclamation assets, sophisticated enough to produce RPET pellets suitable for use back into bottles, are now operating throughout these regions. The RPET pellet produced by these operations is largely being sold to local bottle manufacturers, while a good deal of the clean flake is finding its way to US fiber and sheet markets with some also being purchased by Canadian sheet producers. Interestingly, there is a US law that prohibits the importation of waste material, including bales and dirty flake, from any country in the world other than Canada. The US Food and Drug Administration (FDA) has enforced the law only once for a short period of time. It is unclear whether the Trump Administration will pay any attention to it or not.

Arabia: The OCTAL plants in Oman and Saudi Arabia are good example of significant improvements in efficiency over the traditional virgin resin model. Founded in 2006, in close proximity to chemical raw materials needed to manufacture PET, Octal claims to have eliminated five processing steps that reduce energy consumption, leading to a step change in lowering their carbon footprint. Specifically, Octal manufactures PET right into sheet eliminating the pelletization phase that is otherwise standard in other virgin sheet operations. The cost advantage has resulted in Octal now being the world's largest PET sheet manufacturer, exporting to all parts of the world. Its pricing is often the benchmark that reclaimers have to meet in selling RPET flake or pellet to sheet producers in both the US and Canada.

Southeast Asia: As China continues to enforce the provisions of their Law of Circular Economy as it pertains not only to working wages but also to working conditions, environmental controls and waste management, some international traders (previously discussed) are finding new countries where these enforcements are lax or non-existent. It appears that operations in Vietnam and Indonesia are now filling the market space left open by some of the Chinese operations that manually sorted and processed mixed plastic bales. The long term viability of these operations is dubious if the new efficient resin production results in lower prices as speculated. This is particularly true for film and other olefins, but in the short term they may still play an active role in the market.

Concluding Remarks

Recycled and virgin resins are shipped all over the world in ways where the economics are not readily apparent. Bales from Israel; Depolymerization tolling in India; clean flake from Europe to the US are just a few examples of this type of commerce that will continue to take advantage of particular international opportunities but not in a fashion that will influence US and Canadian markets as a whole. The major impacts will continue to come from the price of virgin resins, Chinese bale buying and US and Canadian public policy.