

# Toronto's Expanded Polystyrene Densification and Marketing Pilot

A Continuous Improvement Fund supported Pilot Project # 1035

Report submitted to CIF  
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Potential Re-processor (location)	Process	End Product/ End Market
<b>Green Mantra Brantford ON</b>	Uses a catalyst that breaks polymers and isolates specific monomer so that pellets can be created.	After styrene monomer is isolated, it can be used as an additive for print ink, and would replace virgin stock. Alternatively, it could become an additive for asphalt roofing or road paving applications, pending permits and agreements.
<p><b>Considerations:</b> Green Mantra will begin a pilot program for EPS in 2018. The pilot will determine, among other things, whether or not the company is compliant with emissions standards that arise from fire retardants present in some EPS. Initially, Green Mantra indicated that samples from the City of Toronto were unusable because of the fire retardant they contained, but have since indicated that they are interested in engaging further, as their facility develops solutions for EPS.</p>		
<b>Berga Recycling Montreal QC</b>	Creates General Purpose Polystyrene pellets then provides to partner in Europe.	Can be used in building materials.
<p><b>Considerations:</b> Berga receives polystyrene from post-industrial and post-commercial providers, but has not yet worked with a municipality supplying post-consumer material. Berga demonstrated initial interest in the sample block, however, they did not proceed with processing it due to concerns over contamination leading to equipment damage (filter blockage).</p>		
<b>Pyrowave Montreal QC</b>	After pre-processing EPS in order to remove contamination and air-space, PS is put into a reactor where molecules are cut.	A styrene monomer is produced and can be reprocessed into virgin-like polystyrene.
<p><b>Considerations:</b> Extensive pre-processing is required before the reaction can be conducted and there is no existing facility that would accept MRF generated post-consumer EPS.</p>		
<b>Polystyvert Montreal QC</b>	Provides "reusable" essential oil to warehouses or other sites where EPS is collected. The oil dissolves EPS, and is shipped back in liquid form to Montreal where a styrene monomer can be isolated. The oil can be cleaned of contaminants and used over again.	A styrene monomer is produced and can be reprocessed into virgin-like polystyrene.
<p><b>Considerations:</b> While this method can add value to users by reducing the amount of warehouse space that EPS occupies, the cost of transportation is high, as the liquid needs to be delivered and removed from the site and returned to the Montreal. It has not been used for MRF generated post-consumer EPS.</p>		