



This memorandum presents the new source reduction emission factors for virgin plastics (assuming production with 100 percent virgin inputs). ICF developed these emission factors, presented in Table 1, using updated process and transportation energy data received from the American Chemistry Council (via the National Renewable Energy Laboratory) in February 2008 for seven plastic types.

Table 2 provides a comparison of the new and existing source reduction emission factors for HDPE, LDPE, and PET. The greenhouse gas emissions associated with the production of these plastic resins from 100 percent virgin inputs have declined significantly. According to Franklin Associates, this is due to the reduction in process energy requirements for the production of plastic resin since the early 1990s. Aside from improvements in process energy efficiencies, previous data collection errors coupled with misrepresentations of the energy data provide the rationale behind the large differences between the previous and new emission factors.¹

Table 1. New (2008) Source Reduction Emission Factors for Virgin Plastics

Plastic Type	From 100 % virgin inputs	From 100 % virgin inputs
	(MTCE/Ton)	(MTCO ₂ E/Ton)
HDPE	-0.31	-1.14
LDPE	-0.36	-1.30
PET	-0.47	-1.71
LLDPE	-0.30	-1.10
PP	-0.27	-0.99
GPPS	-0.49	-1.81
PVC	-0.42	-1.54

Table 2. Source Reduction Emission Factor comparison for Previous (2006) and New (2008) Virgin Plastics

Plastic Type	From 100 % virgin inputs (MTCE/Ton)	From 100 % virgin inputs (MTCE/Ton)	Percent Difference (2006 values minus 2008 values)
	(New 2008 values)	(2006 values)	
HDPE	-0.31	-0.54	43 %
LDPE	-0.36	-0.65	45 %
PET	-0.47	-0.59	21 %

Please let us know if you have any comments or questions.

¹ Franklin Associates response memo on November 19, 2007.