

## Recommendations for End-of-Life Management of Hard-to-Recycle Plastic Film

**Note: Recommendations were NOT forwarded to the Council on Recycling per decision on Oct 1, 2013 by Subcommittee Co-Chairs, due to need for further research on the topic.**

### Definitions:

- **Hard-to-recycle plastic film:** flexible polymer film with resin identification codes #2 (high density polyethylene), #4 (low density polyethylene), #5 (polypropylene), #6 (polystyrene), and #7 (other resins) that is not easily recycled because it is: contaminated, has coloring or printing, has difficult to recycle structural qualities (multi-layered, thinness, mixed polymers), is generated in limited volume, or the process of recycling it could harm brand integrity.
  - Film for the purpose of these recommendations is generated **in an industrial setting** (i.e., not from households or retail businesses) and is classified as “Post-Industrial” or “Post-Consumer”
    - **Post-Industrial scrap:** Off-spec plastic film or remnant waste from film producers. Material that has not been used for its intended final application. Tends to be clean stream with minimal contamination.
    - **Post-Consumer scrap:** Plastic film that has been used in its intended final application, either, industrially as in a manufacturing process or commercially in distribution applications. The consumer is an industrial business which uses plastic film to produce or package a product.

### Proposed Recommendations:

Facilitate highest use of hard-to-recycle plastic film waste by developing Wisconsin’s energy recovery sector including production of fuel pellets and plastic-to-oil conversion technology through the following processes:

- 1) Facilitate DNR air and waste permit application processes.
  - Establish a DNR-single-point-of-contact (SPOC) for air and waste permits. The SPOC could be a sector or material specialist, and could be located anywhere the state. The SPOC would assist businesses in the permit application process, so that applicants clearly understand what information is needed and the steps in the permit process, and assist in reconciling inconsistencies among various programs and permit applications.
  - Develop and make accessible application templates for different applications.
  - Explore classification and definitions of biomass and industrial boilers by DNR and EPA and seek consistency with interpretations in other states.
  - Define the appropriate exemption level or range of likely emissions for comparable industry fuels and processes.
- 2) Provide communication and spread awareness to general public.
  - Support communication, public awareness and understanding of benefits of energy recovery facility processes by comparing them to existing infrastructure; particularly as they relate to increasing landfill diversion and being viable sources of alternative energy. Topics include the conversion of hard-to-recycle plastic film waste into useable heat, electricity, or fuel or a feedstock commodity through a variety of processes such as combustion, gasification, pyrolysis and anaerobic digestion.
    - Use life cycle analysis to compare management of hard-to-recycle plastics using various end-of-life scenarios (landfilling, recycling and energy recovery) to quantitatively demonstrate trade-offs and positive impacts.
    - Explain how characteristics that make a material hard to recycle add value (e.g. enhance shelf life, food safety, reduce food waste)

- Highlight research and efforts to develop alternative materials to replace hard-to-recycle plastic film and to minimize factors which make the material hard-to-recycle (e.g., minimize contamination or switch from using a layered film to a pure film)
- 3) Build market network and infrastructure.
- Develop a clearinghouse or bulletin board system to connect generators, processors, suppliers and transporters of non-recyclable/hard-to-recycle plastic film.

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