

# Compliance with the Solid Waste Hierarchy

	<i>MRC/Fiberight</i>	<i>economy</i>	<i>Advantage</i>
<u>Waste reduction</u>	Local control: each town can continue existing programs or add new programs at its option	Local control: each town can continue existing programs or add new programs at its option	<b>Even</b>
<u>Recycling:</u>	Local control: each town can continue existing programs or add new programs at its option. Towns can use any MRF at their option.	Local control: each town can continue existing programs or add new programs at its option.	<b>MRC</b> Shorter distance, less haul cost, cap on recyclables tip fee
<u>Recycling:</u>	Provides "second pass" at recyclables. Recovers metals, glass, plastics and high-value paper	Recovers ferrous metals only	<b>MRC</b> More recovery
<u>Composting and organics recovery:</u>	Converts carbohydrates to hydrocarbons via digestion of soluble organics and hydrolysis/digestion of a portion of insoluble organics (e.g., diapers, low-grade paper). Would comply with new legislative mandate if enacted	No recovery. Materials are combusted. Would not comply with new legislative mandate if enacted. The combustion of un-recovered and un-separated carbohydrates leads to more emissions of CO2.	<b>MRC</b> More recovery, fewer CO2 emissions
<u>Composting and organics recovery:</u>	Not necessary. Avoids emissions from additional collection vehicles and avoids associated costs.	Requires diversion to a conventional AD facility such as Exeter. Converts soluble organics to bio-gas to make subsidized electricity. Insoluble organics are land-spread on fields. Some contaminants are diverted to landfill disposal. Requires separate collection and haul system with additional vehicle emissions and costs.	<b>MRC</b> No vehicle emissions or costs. Fewer contaminants requiring disposal. No land-spreading.
<u>Energy recovery</u>	Converts remaining insoluble organics to clean biomass fuel for sale and to produce electricity and heat to run the plant	Combusts remaining materials, including plastics and metals. Generates electricity, but does not recover heat (less efficient).	<b>MRC</b> Fewer emissions, higher overall efficiency for energy recovery
<u>Landfill disposal</u>	About 20% of incoming MSW requires landfill disposal in form of solid residue and some ash.	About 24% of incoming MSW requires landfill disposal in form of ash.	<b>MRC</b> Less landfilling, more resource recovery
<u>OVERALL</u>	Moving Maine up the hierarchy	Business as usual	<b>MRC/Fiberight</b>

## Displacing fossil fuels and reducing the carbon footprint

	<i>MRC/Fiberight</i>	<i>ecomaine</i>	<i>Advantage</i>
Fossil fuel displacement	Fiberight converts organic materials to bio-gas for injection into the Bangor Natural Gas Pipeline or sale as Compressed Natural Gas (CNG for vehicle fuel. Both uses directly displace natural gas from fossil sources. Fiberight uses some biomass extracted from organic material to produce electricity and process heat to run the facility – which is extremely efficient due to (a) the recovery of the waste heat for use in the plant; and (b) avoiding losses in the electric transmission and distribution systems by using the generated power at the point of generation without going on to the grid.	ecomaine displaces natural gas from fossil sources by generating electricity for delivery to the grid that displaces electricity generated from natural gas elsewhere on the grid.	<p>Displacing electricity made from natural gas is far less efficient (ecomaine) than displacing natural gas directly (MRC/Fiberight).</p> <ul style="list-style-type: none"> <li>ecomaine needs about 16,000 Btu to make each kWh of electricity (based on producing 110,000 MWh per year of electricity from 175,000 tons per year of MSW at a heating value of 5200 Btu/lb).</li> <li>Natural gas-fired power plants need 7,000 to 10,000 Btu to make each kWh of electricity- less than ecomaine does – 40% to 55% fewer Btus per kWh</li> </ul> <p><a href="http://www.eia.gov/electricity/annual/html/epa_08_01.html">http://www.eia.gov/electricity/annual/html/epa_08_01.html</a></p> <p>Thus, ecomaine is much less efficient, burns more Btu per kWh generated, and has far higher greenhouse gas emissions than natural gas fired plants. The ecomaine approach to displacement of electricity is less efficient than Fiberight's direct displacement of natural gas.</p>

## Economics and Voice

	<i>MRC/Fiberight</i>	<i>ecomaine</i>	<i>Advantage</i>
Tip Fee	\$70.00/ton	\$70.50 per ton*	<p>MRC Saves \$2,500/yr</p>
Revenue Sharing:	Yes	No	<p>MRC Anticipated rebates of \$5-\$20/ton, or \$25k-\$100k/yr</p>
Governance	Voting member, strong Board oversight and transparency	Customer, staff-driven organization with less transparency	<p>MRC More transparency, more say.</p>

\*Based on 20 year contract price offered formally to the Mid Coast Solid Waste Corporation