



WA Recycling Coordinators Meeting

April 9, 2014

Agilyx is an alternative energy company that uses patented, proven and commercially viable technology to convert difficult-to-recycle waste plastics into synthetic crude oil through a process that is scalable, versatile and environmentally positive.





- **Reduces waste** by processing plastic destined for landfill without competing with recycling efforts
- Every year ~63 million tons of plastic is landfilled or incinerated in the U.S.*



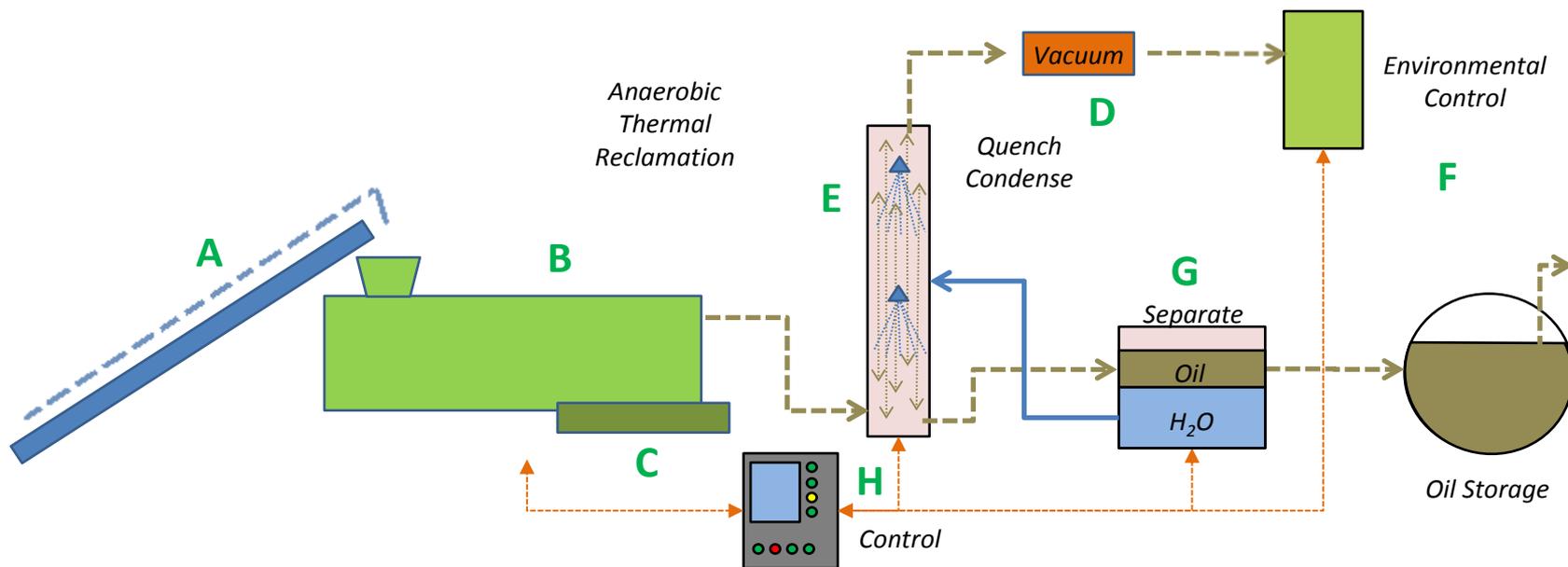
- **Produces a lower-carbon synthetic oil** that is light, sweet, and totally distillable
- Drop-in crude oil that can be readily refined to fuels in U.S. refineries



- **Empowers communities** by creating a new source of domestic energy
- Improved environmental stewardship through landfill diversion

*SOURCE: EPA

- Thermal conversion of plastic feedstock to crude oil (feedstock for fuel and other products)
- Closed process (deminimis air emissions)
- High efficiency (high EROEI, very low waste product, tolerant of heterogeneous plastics mix)
- Prepared feedstock comes from heterogeneous waste plastics stream that is difficult or impossible to recycle (currently landfilled or incinerated, even exported)

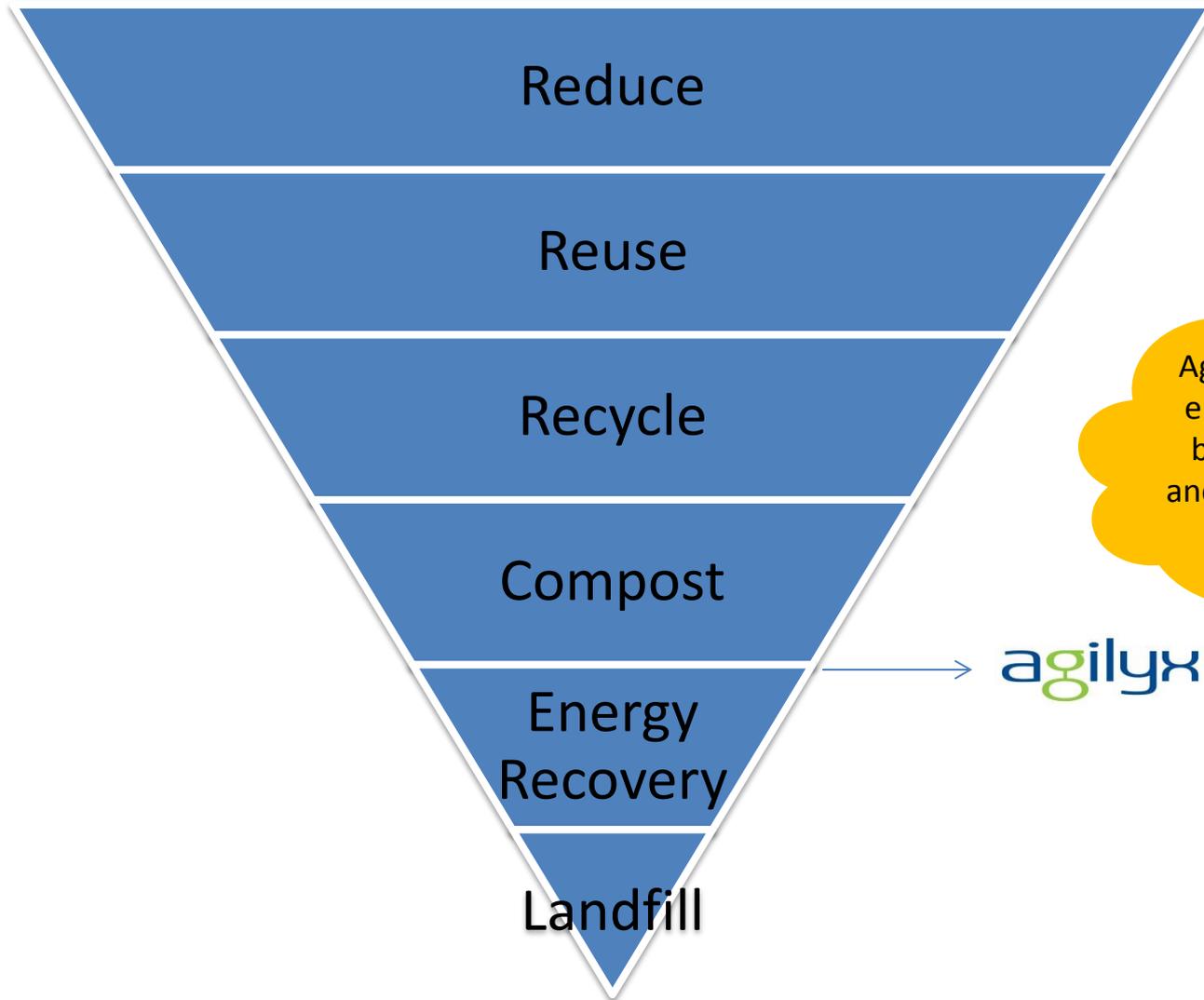


- A: Plastic is conveyed into a hopper where it is densified and loaded into system**
- B: Plastic is heated as it travels through the system; the material transforms from solid-to-liquid-to-gas**
- C: Char is cooled and augured to storage area**
- D: Entire system is placed under vacuum**
- E: Gases move to Chromatographic Condenser separating process**
- F: Non-condensable gases are destructed for emission and heat usage purposes**
- G: Oil is filtered, dried, cleaned, conditioned and transferred to the Oil Storage Tank**
- H: Integrated Control System controls entire process with automation**

How does Agilyx fit into the ecosystem?

<p>Key Point</p>	<ul style="list-style-type: none"> ▪ The Agilyx technology bridges two life cycles that are not generally connected (plastics, fuel)
<p>Plastics</p>	<ul style="list-style-type: none"> ▪ Takes heterogeneous waste plastics streams headed for landfills or incinerators that is then <i>prepared into a feedstock</i> ready for processing by the Agilyx system
<p>Fuel</p>	<ul style="list-style-type: none"> ▪ Produces high-grade crude oil without repeating the impacts of crude oil extraction
<p>Net Effect</p>	<ul style="list-style-type: none"> ▪ Combining the <i>end of the plastics life cycle</i> with the <i>crude oil extraction life cycle</i> is better than the alternative

Where does Agilyx fit in the waste hierarchy?



Agilyx is favorable to most energy recovery options based on the economic and environmental costs & benefits



Plant Owner: Waste Management

Location: Portland, OR

Commissioned: December 2013



This plant will divert up to 17,000 tons of plastic from the landfill each year.



This plant will produce up to 85,000 barrels of crude oil each year.



Permits Required	
Permit Type	Agency
Air (A.C.D.P.)*	OR DEQ
H2O (W.W.D.P)	City or Portland

*Agilyx Permit: 26-0170-ST-01

Is there a “Typical” feedstock spec?

- Comingled Heterogeneous Mix
 - Maximize Polyethylene
 - Maximize Polypropylene
 - Minimize PET
 - Minimize PVC
- Contaminants (paper, dirt, metal, food)
 - Less than 10%
- Moisture Content
 - Less than 10%





Medical Waste Plastic



Post Consumer Food Wrappers



Sports Turf Plastic Fibers



Construction & Demolition Plastics



Tarp and Logistics Packaging



Transmission Wire Chop

1

The Agilyx technology does not compete with recycling, rather it enhance recycling efforts by processing plastic that was otherwise destined for the landfill

2

The net carbon benefit of combining the end of the plastics life cycle with the middle of the fuel life cycle is better than the alternative

3

Removing plastic from the waste stream increases landfill compaction ratios, which saves valuable airspace and reduces handling and operational costs

4

Agilyx furthers sustainability through landfill diversion and empowers communities by creating green collar jobs and a new source of domestic energy

5

An award-winning alternative energy company with leading partners, Agilyx is building win-win partnerships within the waste and refining industries

agilyx

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