



## Feature Is Sustainability Sustainable?

*A great catchword, yes, but how does sustainability serve us and the planet?*

By definition, sustainability of a material is dependent on the degree that its useful life can be extended. 'Closing the loop' refers to the ability of a material to be reintroduced into the use cycle, or better yet, to *remain* in the cycle, becoming indefinitely reusable.

However, a material can be sustainable, but the cost to reintroduce it to the closed loop, in terms of production, byproducts, pollution and labor, can be prohibitive. Or it might have a short use-cycle before having to be re-processed, thereby increasing its ecological footprint. Even though certain materials are sustainable after the first production cycle, they could be robbing the planet of rare raw materials, or generate prohibitive depletion of minerals and land. Yet other materials billed as sustainable, are actually not sustainable at all, and only have 1 or 2 use cycles.



Let's see if we can find materials that are *truly* sustainable, and find other materials that may not be as sustainable, but are the best choices, given all of the energy and raw materials expended on their production and re-processing when it's time to recycle. Taking a true scientific approach, let's not let the allure of promised 'sustainability' keep us from reaching the true goal: Finding what is best for us and the planet we inhabit.

Okay, I'm going to start with the easy ones: **Aluminum** and **Stainless Steel**. These materials can be reintroduced or even remain in the 'closed loop' virtually at low re-processing cost. And they do not degrade during recycling, so they are very sustainable.. Of course there is the front end mining and refining costs, but those are theoretically negligible past a certain point, and here's why: A substantial 50% of consumer aluminum in use today is from recycled product (generated from a 65% recycling rate), hence the amount of start-up production cost spread over the entire quantity of the material is greatly diminished.

What about **glass**? Glass is highly sustainable. Some items have very low reprocessing costs – as in beverage bottles (which in certain locales and states, are actually returned intact after each use to be re-used).

FABRIC TECHNOLOGY has made great strides in recycling and becoming largely sustainable depending on the material. Recycling **cotton** saves 64% water and cuts down on 45% of carbon emissions.

**Hemp**, pound for pound, has much more usable raw material than the equivalent in trees, and takes much less time to grow and harvest.

Some chemical compounds used in the re-processing of materials for re-use can in themselves be considered sustainable, and as such, contribute to the overall sustainability of the finished product. This is the case with **Lyocell**, a substitute for Rayon. (Production of Rayon involves highly toxic carbon disulfide, so there is an added benefit.)

**Nylon** is highly sustainable with the advent of the “Econyl” method of extracting viable product from waste.

Honorable mention goes to **bamboo**, with the caveat that textiles made from bamboo consume a lot of energy in the recycling process. (So you might want to put that shirt you are considering purchasing back on the rack, but go ahead and get the bamboo toothbrush!)

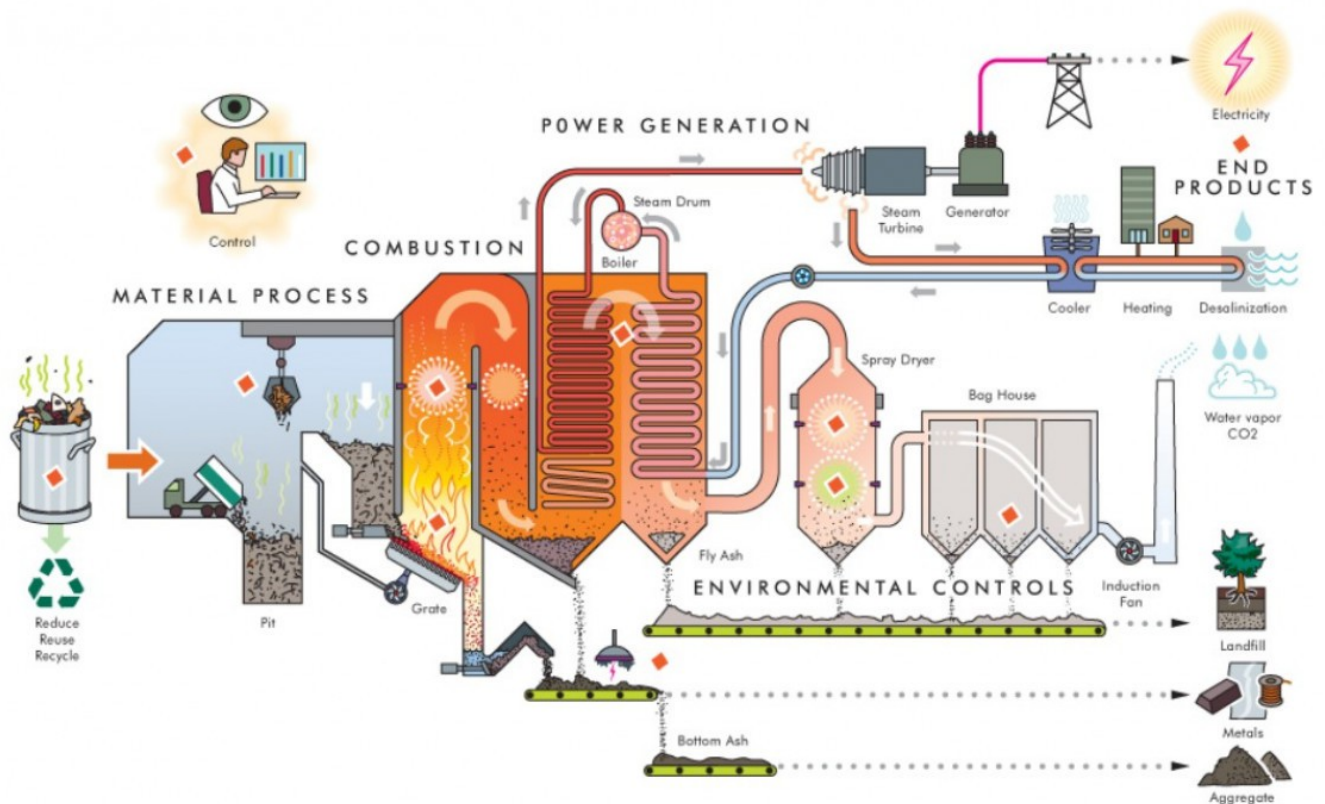
Ah yes, and what about the old bugaboo, packaging? Americans in particular, (and now most of the rest of the world) love AND loathe packaging. Wrapping something up in layers of cardboard, bubble pack, packing peanuts, and more cardboard makes us feel secure about the safety and condition of our purchases, but then the *unwrapping* can cause great (expletive) angst! The **plastic** component of all of this packaging is almost completely non-recyclable. Although chemical processes that break down the many varied components of plastic packaging and single-use plastic are in early production stages, and there are legislative and industry self-regulatory efforts toward making plastic compounds more uniformly used, these materials continue to remain highly unsustainable. And remember, plastic does not break down in some cases for hundreds of years!

What about **bio-plastics** (manufactured from plant-based materials)? They are not all they are cracked up to be, as they often require involved production processes and harmful chemicals to produce. Some items may proudly proclaim that they are made from, or packaged in bio-plastics, but the true benefits are questionable, and these items are oftentimes disposed of as trash.

P.S. - I'm sure I'm missing some materials here. If you know of a material that is highly sustainable, we would love to hear from you! Send your comments to [info@nhswra.com](mailto:info@nhswra.com).

## Feature WTH is a WTE?

*Waste-to-energy plants, how they work, their prevalence, benefits, downsides, and future*



Converting your household waste to energy-- this process was first commercialized in the mid 1970's, became more prevalent in the 90's, and has largely been legislated into prevalence as the primary way to reduce municipal solid waste (MSW) in the U.S. and a large percentage of the rest of the world.

Currently, there are 6 WTE (or “waste-to-energy”) plants in Connecticut, but one, the MIRA facility in Hartford, is scheduled to be decommissioned as of July 1 2022. That plant alone accounts for 20% of municipal waste conversion in the State! And since it has been mandated that CT produce at least 6%

of its energy from renewable sources (i.e., biomass, of which municipal waste makes up 20%), there will be a significant shortfall in the near term.

So I'm getting ahead of myself here... let's wind it back a bit: The U.S. produces about 5% of its energy from biomass (any renewable organic matter, including trees and tree products, manure, food waste and MSW). Of that 5%, 20% is produced by MSW (a/k/a trash from your home). So, 20% of 5% = 1% = the amount of energy produced by your trash in this country. Doesn't sound like a lot, does it? But it is: Energy from WTE's in CT alone produces enough electricity to power 300,000 homes and businesses. But it is also very significant, in that the environmental benefit of using waste to produce energy gives it a negative total carbon imprint, which stacks it favorably against the merits of energy production from coal or natural gas. (Note: WTE's are far less efficient at producing electricity than natural gas combustion, but factoring in the bonus of removal of CO<sub>2</sub>-generating materials from the environment makes them effectively *more* efficient).

The conversion process (Waste to Energy) is essentially very simple:

- > collection of materials (in this case biomass, and specifically, municipal waste from the Transfer Station)
- > sorting (removal of recyclables, if necessary)
- > mixing
- > combustion
- > heat and steam production, forced through turbines
- > turbines generate electricity.
- > storage and distribution of electricity

So what's the catch and are there any downsides? Not really, but there are caveats: By mandate in the U.S. and in CT in particular, WTE facilities must capture and safely eliminate harmful heavy metals and other byproducts, including heat pollution and gases generated from the combustion process. However, most of these can be captured or reprocessed and reintroduced for commercial use. (see diagram, page 3) Technology for such processes necessarily involves scrubbers, electrostatic separating units and in the case of steam and heat, re-circulation to the turbines in the plant or direct use in outside facilities ('co-generation').

Down the road, more WTE's are definitely needed in CT, particularly with the possible loss of the MIRA plant coming up later this year. For Connecticut, being responsible in this scenario means eventually cutting down the amount of raw MSW we are trucking out of state which ends up in other states' landfills, estimated to be 300,000 tons per year. WTE's are a proven technology and a well-regulated, resource-conserving way to reduce trash *and* produce energy at the same time.

 **Who's Who?**

We at the Authority are proud to welcome **Kathy O'Brien** to the staff, as Executive Administrative Assistant, Operations. Kathy has more than 15 years of experience working in both customer service and accounting. She has also done volunteer work for Habitat for Humanity, the Spooner House, Seymour/Oxford Food Bank, and the Town of Oxford Library Board as Treasurer. She has a degree in Business Management and Administration from Albertus Magnus College.

*The Authority is pleased to announce recent appointees to the NHSWRA Board of Directors:*

**Margaret Targove**, appointed to the Board 1/4/21, served as a long-time City employee retiring as Deputy CAO, is the current Executive Director of the NH Port Authority.

**Domingo Medina**, appointed 12/1/20, long-time environmentalist and organics composting advocate.

**Rose Bonito**, appointed 12/3/20 from Ward 12, Alder Antunes' ward. Rose wanted to get involved to make a difference in the City.

**Jose Crespo**, appointed 1/4/22, elected as the new Chairman at the January Board meeting and is the Alderman from Ward 16 (one of the 4 Fair Haven districts)

We would like to thank **Alderman Gerald Antunes** for his service. Mr. Antunes was the longest serving NHSWRA Board member to date, having been involved with the Authority since its inception in 2009. Chairman Antunes stepped down from our Board in December, 2021.

We would also like to thank **Richard “Dick” Miller**, who was a long-term member of the Board as well, serving nine years, many of those years as Vice Chairman. Mr. Miller, before his retirement from the City, served as the City Engineer, as well as serving for years as the City's Public Works Director.

We are grateful to these two gentlemen for their commitment serving and guiding the Authority from the beginning.

## Calendar:

National / Worldwide events:

March 21, 2022 – International Day of Forests.

This year's theme: “Forests and sustainable production and consumption”

<https://www.fao.org/international-day-of-forests/en/>

## City of New Haven meeting schedule:

<https://newhaven-ct.legistar.com/Calendar.aspx>

## New Haven Parks and Public Works info:

### **A message from Parks and Public Works Resident Services:**

The Parks and Public Works annual street sweeping program begins on April 1<sup>st</sup> and ends on October 31<sup>st</sup>. This annual program is designed to remove the heavy accumulation of salt, sand, litter and leaves that has collected over the winter months as well as help keep New Haven's miles of streets clean.

With Spring right around the corner, gardening season will soon begin. Please consider mulching your grass clippings for a healthier lawn. Grass clippings are a natural fertilizer and a natural weed killer. Lawn clippings help lawns stay hydrated. Mulch reduces landfill use.

Just a reminder that leaves must be placed in brown paper bags and should not weigh more than 50lbs. Branches cannot be longer than 4 feet and must be bound (cannot be wider than a foot when bound) in order to be picked up along with your weekly trash and recycling pick-up.

Household hazardous waste such as paint, cleaners, solvents, batteries, chemicals, motor oil, oil-based products and aerosol sprays, is not accepted at the Transfer Station. These items can be brought to HazWaste Central at 90 Sargent Drive (currently closed for the season). They will be open from May 21<sup>st</sup> through October 29<sup>th</sup>. If you have any questions about household hazardous waste, you can call (203) 401-2712 or email [ask.hazwaste@rwater.com](mailto:ask.hazwaste@rwater.com).

Coupons are once again available! Free coupons may be obtained with a valid ID at Parks and Public Works Resident Services Office, located at 34 Middleton Avenue. Our hours are Monday-Friday 7am–4pm. Remember: you *must* present a coupon (one per load) to dispose of items at the Residential drop-off center at the New Haven Transfer Station.

As always, if you have any questions, give Parks and Public Works Resident Services a call at (203) 946-7700. We have been experiencing heavy call volume but if you leave your name and phone number with a question we will get back to you.

Remember you can always report Public Works issues at **See Click Fix** found on the New Haven City website (see "Links," below).

**Links:**

New Haven Public Works- <https://www.newhavenct.gov/gov/depts/pw/>  
See Click Fix- <https://seeclickfix.com/new-haven>

**NHSWRA contact info and link:**



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