


*Making Today's Plastic Waste  
Tomorrow's Energy.*



# ENSO RESTORE





Did you know the **81 MILLION TONS** of **PLASTIC WASTE** discarded into **LANDFILLS** each year is a **VALUABLE RESOURCE** ?

Most plastic waste is already light-weighted to reduce the amount of plastic used and discarded.

Light-weighting is often the best environmental option – even when it means the plastic will not be recycled.

**In a circular economy, we must cycle this material at its highest level possible: energy.**

Fortunately, 85% of consumer waste is currently disposed of in energy generation facilities – modern landfills.

The conversion of plastic waste to energy requires no infrastructure or consumer behavioral changes.

Instead, manufacturers can simply design their products for energy conversion using ENSO RESTORE and immediately capture this valuable resource.

Discarded plastics will be converted into electricity for communities & businesses, fuel for vehicles and heat for homes.

Today's modern landfills are an engineering marvel; environmentally sound anaerobic digesters. And they are major contributors in the renewable energy revolution.

***Imagine a future where communities are powered by the trash they throw away – that future is here. Our waste is now tapped as a source of renewable and sustainable energy.***

According to the U.S. Department of Energy's Energy Information Administration, the solid waste industry currently produces nearly half of America's renewable energy.

Landfill energy is also the least expensive and more reliable form of renewable energy, it is constantly produced 24 hours a day, every day of every year – rain or shine.

# Are your organization's **ENVIRONMENTAL** strategies based on the right **GOALS AND DATA?**

Successful implementation of sustainable materials management and circular economy requires the use of life-cycle analysis (LCA) to determine environmental burdens.

**Contrary to popular perception, life-cycle analysis reveals that recycling and diverting from landfills is often environmentally and economically unfavorable.**

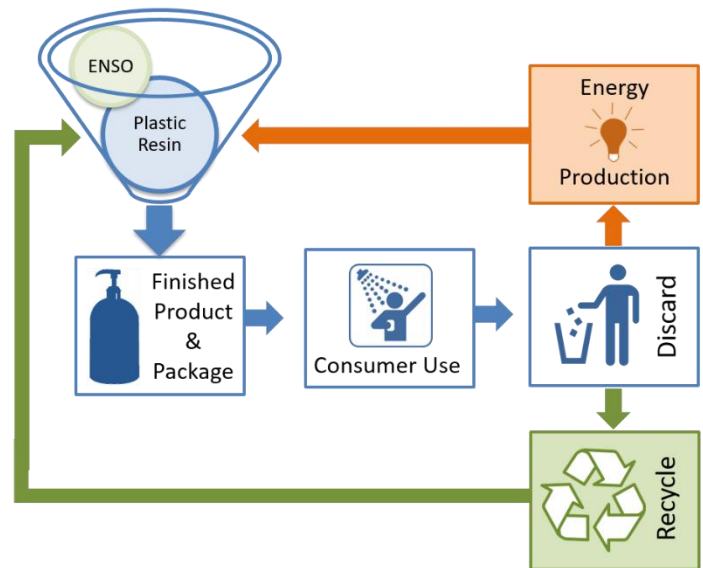
Achieving the goal of reduced environmental impact, commonly referred to as sustainability, requires the ability to use data and science to evaluate your goals and organize a plan of action.

Sustainability also involves stepping away from popular perceptions when they are not supported by the facts.

Data-driven sustainable discard management for products also incorporates current infrastructure, processes and social behavior

*ENSO Restore allows for discarded plastic to either be recycled into clean, inexpensive energy or new products.*

*This solution reduces waste in the landfill, lowers carbon footprint, supports renewable clean energy and encourages proper disposal of plastics.*



***“Coupling effective recycling with landfill gas to energy provides the biggest bang for your buck environmentally”***

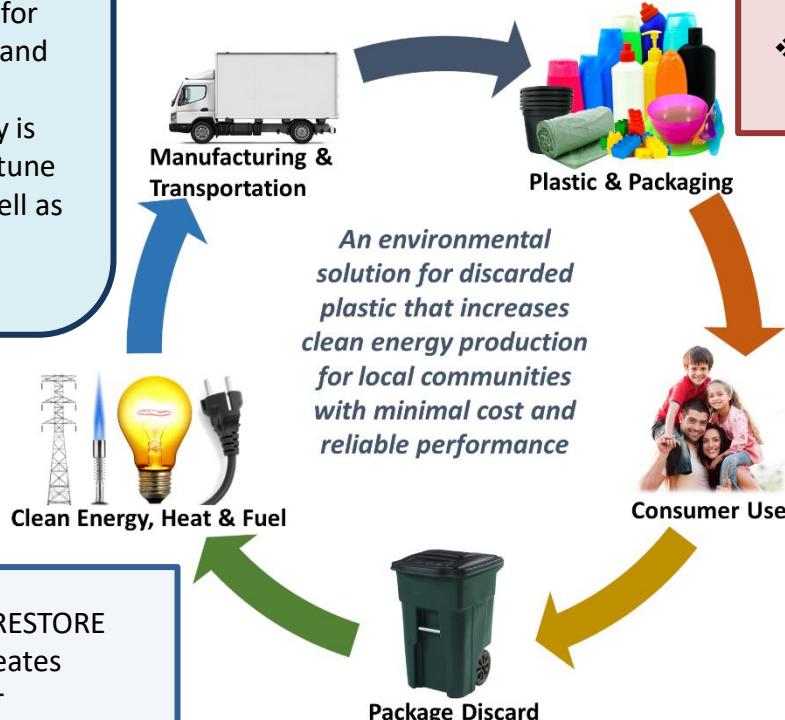
*- David Steiner, Waste Management*



**ENSO RESTORE** closes the circle on **SUSTAINABILITY** by addressing the **COMMON DISPOSAL** environment for **MEASURABLE INTRINSIC VALUE**.

- ❖ ENSO RESTORE closes the loop (waste = energy)
- ❖ Landfill energy used for electricity, auto fuel and other energy needs.
- ❖ Landfill gas to energy is utilized by many Fortune 500 companies as well as federal and state agencies.

- ❖ Shelf stability, safe and reliable
- ❖ Minimal cost
- ❖ Science and data driven sustainability
- ❖ Address the disposal of 85% of used plastic



- ❖ Plastic with ENSO RESTORE when discarded creates valuable energy for manufacturing and business, fuel for vehicles and heat for homes.
- ❖ US states include landfill energy in their green energy portfolios.
- ❖ Every 1000lbs of used packaging could power a home for two years, or fuel a vehicle for one year.

- ❖ Most all of plastic is discarded into modern landfills.
- ❖ 85% disposed into modern landfills that convert landfill gas into clean energy
- ❖ No need to change the consumer behavior or create new programs.
- ❖ Lower environmental impact and cost than other disposal options

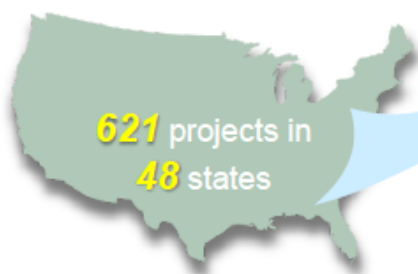


## Did you know?

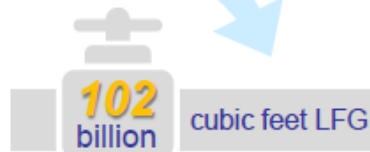
Every **1000lbs** of discarded **PLASTIC** packaging could **POWER A HOME** for two years, or **FUEL A VEHICLE** for a year.



## State of the National LFG Industry (July 2013)



Annually supply



### Estimated 2013 Annual Environmental Benefits:



Carbon sequestered annually by **89 million** acres of U.S. forests

or CO<sub>2</sub> emissions from **253 million** barrels of oil consumed



or CO<sub>2</sub> emissions from **12.2 billion** gallons of gasoline consumed



### Estimated 2013 Annual Energy Benefits:

Powering **1,180,000** homes &

Heating **746,000** homes



With ENSO RESTORE there is no need to change consumer habits, build new waste infrastructures or wait for another industry to improve its processes. This is a solution that can be done today to recover most all your post-consumer plastic waste and create clean power.

# There are two **MAJOR ISSUES** of modern society; **ENERGY** needs and **PLASTIC WASTE**.

Energy is a critical part of modern life, and our need for energy only continues to grow.

By 2040 the world's energy demand is expected to increase by 48%. Along with the increasing demand for power, so does our production and discard of plastic waste.

**The infrastructure is in place to capture 85% of plastic waste and with that waste increase the production of clean energy.**

Currently there are over 600 operational energy sites and an additional 400 identified sites in all 50 states designed for ENSO's solution.

The US EPA describes landfill energy as a "significant energy resource" that is used to generate electricity, replace fossil fuels in industrial and manufacturing operations, or used as alternative vehicle fuel.

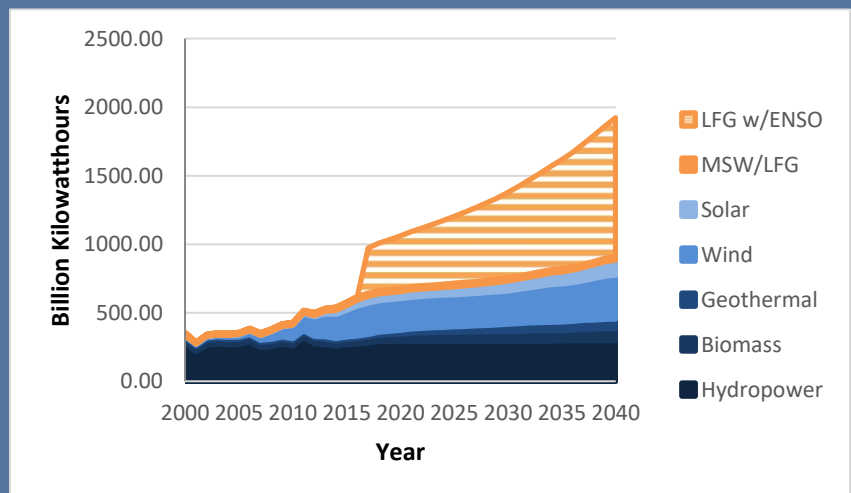
[www.ensoplastics.com](http://www.ensoplastics.com)

## Producing tomorrow's energy demands with today's plastic waste.

Using ENSO RESTORE to convert plastic to energy could produce more energy than all other renewable sources combined at less than a third of the cost.

This would convert nearly 81 million tons of single-use plastic waste into renewable energy each year, offsetting energy requirements from coal, petroleum and other fossil fuel resources.

### INCREASING CLEAN ENERGY WITH ENSO SOLUTIONS



*With ENSO, clean energy production in the US could double in the next 15 years. Energy from plastic product waste could exceed energy from solar, wind, geothermal, biomass and hydro sources combined - with minimal cost and no additional infrastructure or changes in consumer behavior.*



## Maximize sustainability <sup>with</sup> **DESIGNED FOR DISCARD** VALIDATION seal of approval.

### ***Solutions to create value for post-consumer plastic waste***

Managing the discard of post-consumer plastic waste has eluded companies for decades.

Ultimately, the responsibility to get plastics out of the environment and into the grid, remains with plastic product producers and brands.

***With ENSO Plastics, consumers dispose of your product in their curbside bin to increase the production of clean energy***

ENSO provides reliable and measurable accountability for your products after consumer disposal.

ENSO RESTORE supports sustainability initiatives without compromising your product's quality.

Brand owners benefit from increased brand loyalty, and leverage a steadily growing market for green products.

Designed for Discard (D4D) is a third party, product specific sustainability validation seal developed by the non-profit Environmental Research & Education Foundation.

D4D is based on decades of research to create data-driven sustainable discard management for products that incorporates current infrastructure, processes and social behavior.

D4D provides brands and manufacturers with factual basis to design products that are environmentally responsible and communicate this effectively to consumers.

It considers the environmental impact of your product after use and validates that your product is made of materials and designed in a manner that integrates effectively and beneficially into existing waste management practices.

D4D is the first program that brings together all parts of the value chain (manufacturing, retail, consumer and waste management) to create a program focused on measurable results.

D4D is a representation of your environmental commitment and the results that your dedication has achieved. It is how consumers can evaluate a product's true sustainability.

ENSO Plastics was created with a vision of making the world a cleaner place through plastic solutions that are better for the environment.

Our goal is to end plastic pollution by developing innovative plastic solutions that integrate effectively into current waste management practices and infrastructure.

We believe that a true environmental approach requires working together to find solutions based on science and data that lead us to achieving the right environmental long-term goals.



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**Important California Notice:** California law prohibits the sale of plastic packaging and plastic products that are labeled with the terms 'biodegradable', 'degradable' or 'decomposable', or any form of those terms, or imply in any way that the plastic will break down, biodegrade or decompose in a landfill or other environment. These restrictions apply to all sales in or into the state of California, including such sales over the internet.