



WASTE-TO-ENERGY

Creating a Sustainable Economic Engine

TRADITIONAL LANDFILL



TRADITIONAL WASTEWATER TREATMENT PLANT

THE PROBLEM

Large and growing volumes of municipal solid waste (MSW), sewage, and wastewater are produced in communities every day, filling landfills and wastewater treatment plants (WWTPs). As time passes and populations increase, these large, traditional, chemically toxic landfills and WWTPs, whose design and construction has not changed significantly over the past 80 years, are exceeding capacity and significantly polluting our environment. A paradigm shift in the process for the next 100 years has emerged through utilization of new and existing technologies.

THE RECOMMENDATION

A better way to treat solid waste and wastewater is via robust technologies such as the Clark-CWTI-Evergreen Integrated Waste-to-Energy Conversion System (IWECS). IWECS provides an efficient means of reducing the volume of municipal solid wastes (MSW) and sewage. The wastes are converted into valuable products and by-products such as biogas or green electric power, organic fertilizer, and clean water.

By following IWECS process conversion, waste storage issues and associated air and water pollution are significantly reduced. In addition, the significant capital and operating costs associated with the construction and operation of traditional landfills and wastewater treatment plants are significantly reduced.

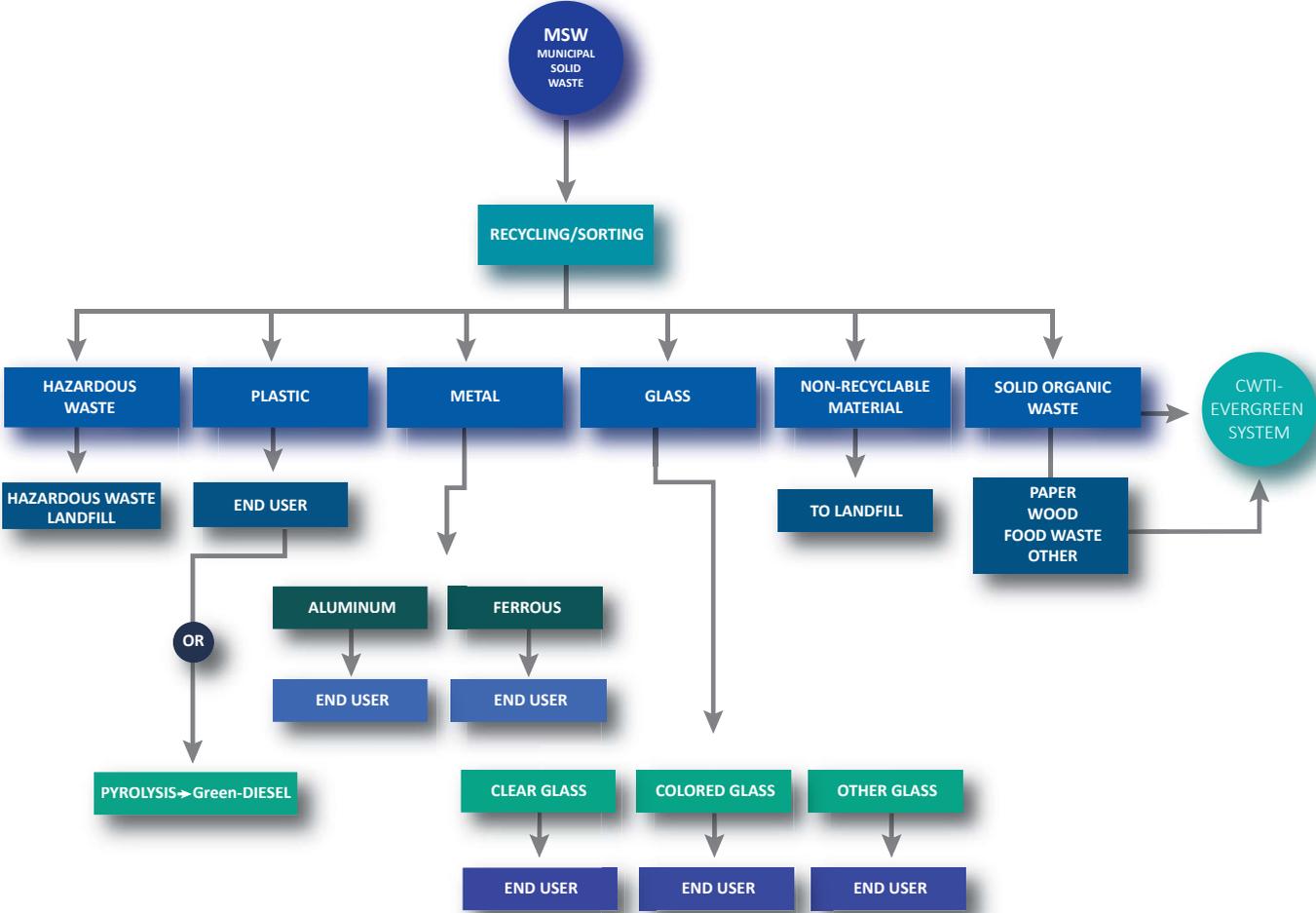


THE SOLUTION

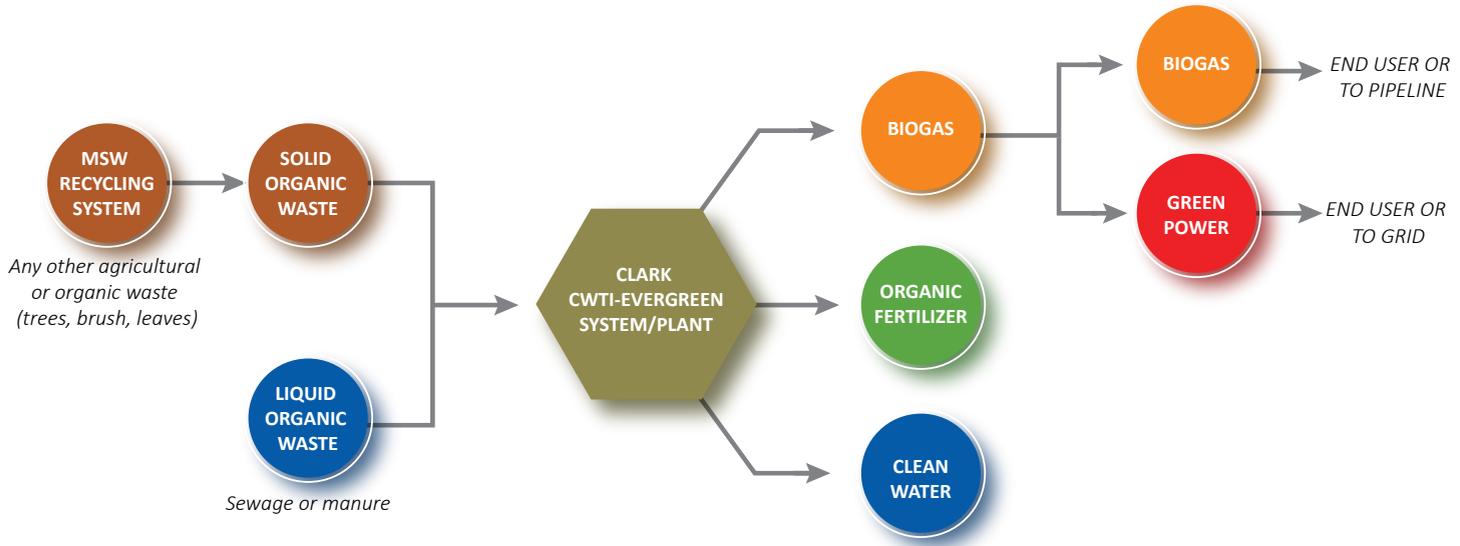
The Integrated Waste-to-Energy Conversion System is the gift that keeps on giving, thanks to the valuable by-products it produces:

- **Biogas and electricity.** Converting most of an organic waste stream into methane-rich biogas is completed through a patented and robust process, which happens to be the most efficient biocatalytic process available in the world today.
- **Fertilizer.** The NPK-specific organic fertilizer by-product of IWECS is of a higher quality than any of today's fertilizers; it is renewable and highly bioavailable, unlike commercial fertilizers, yet is almost odorless and high in nutrient content, unlike most organic fertilizer products.
- **Diesel Fuel.** Many of the plastics and tires that are sorted from the MSW can be converted back into a valuable No. 2 diesel fuel. This fuel, which is not biodiesel, can be used to run most diesel engines.
- **Clean Water.** In addition to converting food and agricultural wastes, MSW, and sewage into valuable "green" energy products, organic fertilizer, and recovering clean water, the IWECS also mitigates pollution caused by the gaseous emissions and liquid leakage from landfills and other MSW containment sites. Each plant's streamlined design mimics the efficient and patented anaerobic biocatalytic digestion process that makes IWECS work.

Clark **Integrated Waste Management** Sorting Diagram



Clark-CWTI-Evergreen Integrated System Output

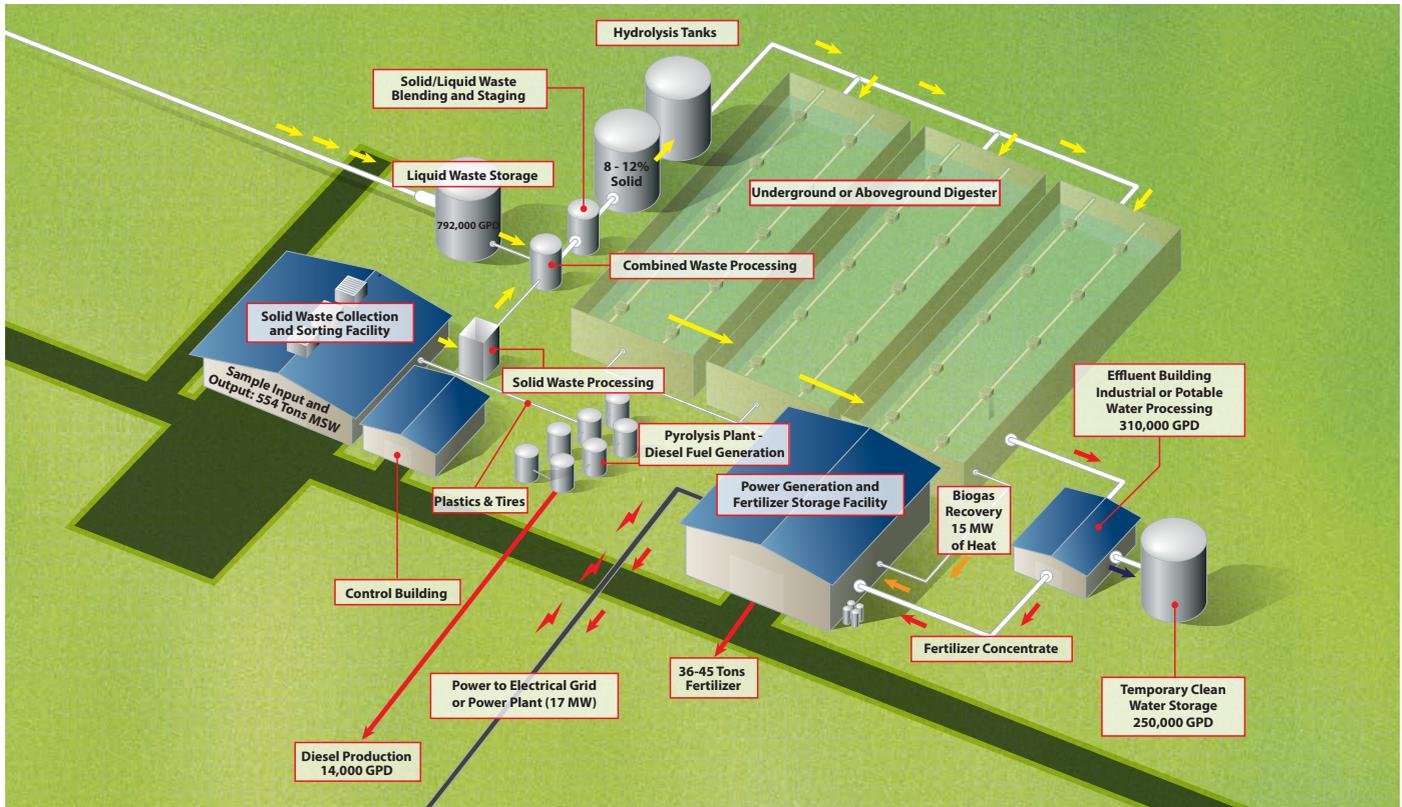


The infrastructure for power generation requires the gas engine and other system components to convert gas into electricity. It is assumed that the electricity will be transmitted into an existing transmission grid. The capital cost of power transmission is not included. The land area needed for each facility depends on the amount of waste treated and MW of power generated. In addition, since the system is modular, additional land may be acquired for future expansion. The land requirements will be disclosed in the financial/commercial proposal.

A LOOK INSIDE

Clark **Integrated Waste Management** Process Diagram

100 tons per day scalable to 1,000s of tons per day



By converting much of that biogas into green electricity with a co-gen electric power facility, green power can be provided to many more thousands of homes and businesses than by utilizing other waste-to-electricity conversion methodologies.



THE BENEFITS



Green.

Rather than simply adding to an already large pile of trash in a landfill or pumping chemicals to remove dangerous water contaminants, IWECS creates an economically viable fertilizer by-product and clean water without chemical treatment.



Single Process.

IWECS significantly reduces the need for landfills and wastewater treatment facilities, instead combining them into one all-encompassing system.



Scalable.

No space to install a full-scale water or sewage treatment plant? No problem. Since each IWECS system is custom designed, it can be scaled to meet the capacity needs of each user.



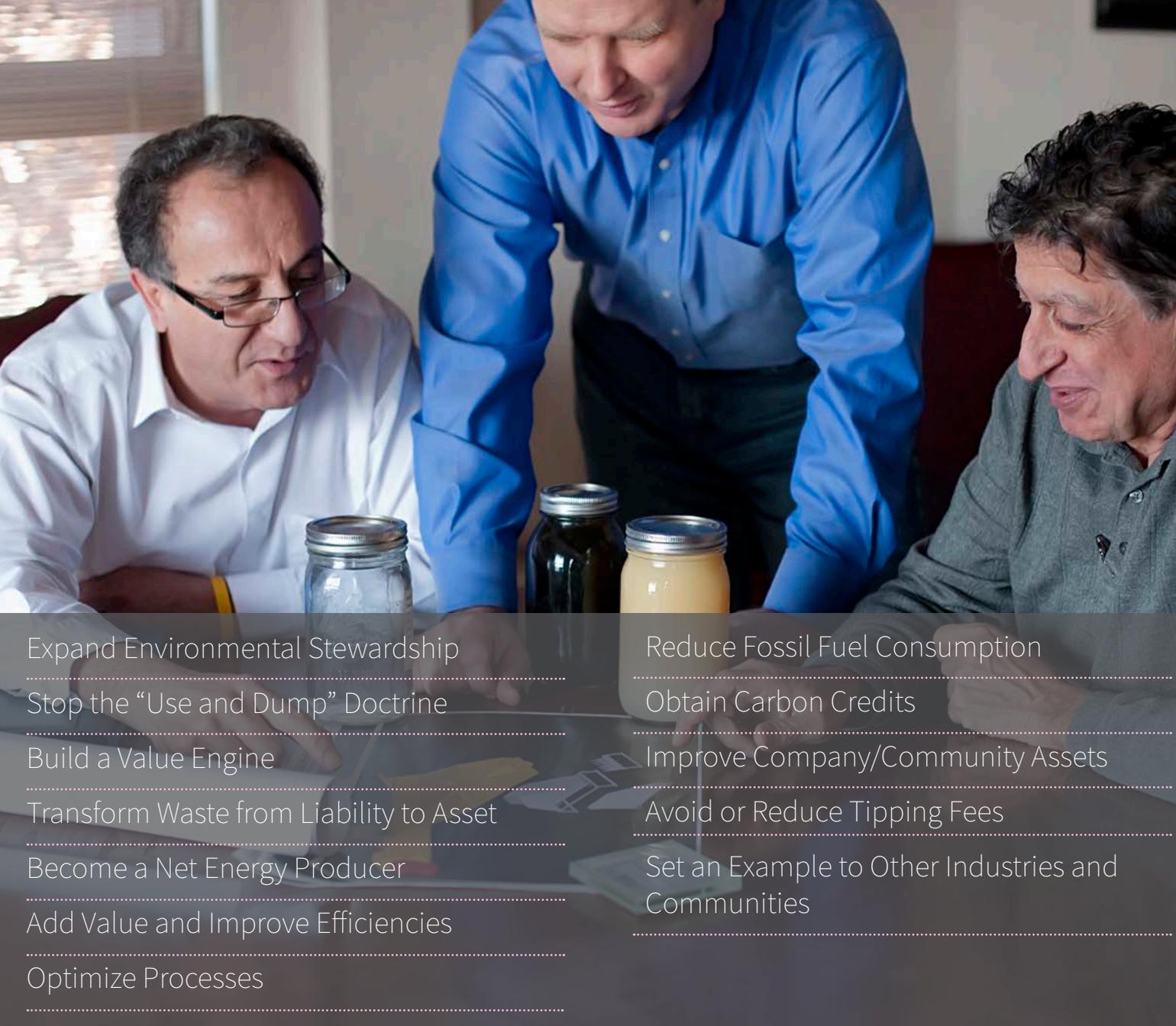
Self-Sustaining.

The energy produced by IWECS can be used to provide gas or electricity to a business and/or a community. The excess may be sold back to the existing utilities that provide gas and electrical service to the community, thereby completing the full circle of the sustainable treatment cycle.



Cost Effective.

Because IWECS can process virtually any organic source material and does not require the addition of costly treatment steps and chemicals, the only cost associated with it after installation is maintaining and powering the system itself (the cost of which can be offset by selling or reusing the energy, water, or fertilizer produced).



Expand Environmental Stewardship

Stop the “Use and Dump” Doctrine

Build a Value Engine

Transform Waste from Liability to Asset

Become a Net Energy Producer

Add Value and Improve Efficiencies

Optimize Processes

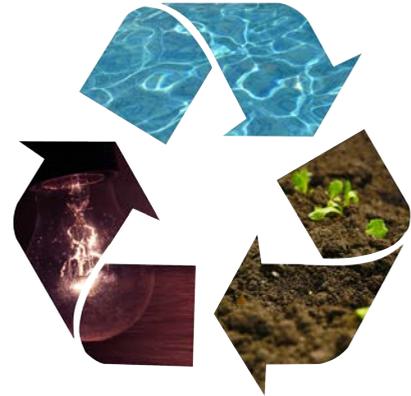
Reduce Fossil Fuel Consumption

Obtain Carbon Credits

Improve Company/Community Assets

Avoid or Reduce Tipping Fees

Set an Example to Other Industries and Communities



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