

Benefits to America

- Viable, clean and renewable alternative to fossil fuels
- Remedy to growing trash problem
- Clean up polluting land fills
- Distributes power production to home owners and small businesses
- Millions of new green jobs created via manufacturing and secondary industries

Benefits to Individuals

- Capable of meeting 100% of household electricity/heat/cooling needs = True independence
- Low cost fuels = Savings
- Multiple sources of fuel = Security
- Carbon-neutral fuel sources = Reduced carbon footprint
- Clean operation = Reduced impact on the planet

Variety of Applications

- Residential/small biz systems (initially outdoors)
- Micro systems (lawn mowers, wood chippers, refrigeration trucks, etc.)
- Automobiles (solid/electric hybrids)
- Municipal systems (turn local transfer stations into power stations)
- Active landfill systems (convert portion of waste stream to BioBricks or direct to energy)
- Landfill reclamation (convert trash mountains to BioBricks or direct to energy)

About the Team

- Innovative “out of the box” vision for energy and power solutions
- Proven ability to translate vision into successful prototypes (see <http://www.21stcenturymotorworks.com/Press.html>)
- Proven ability to attract powerful partners (working with Boeing to develop a revolutionary engine technology)
- Over 140 years of collective experience contributing to and leading corporations and small businesses

Overview

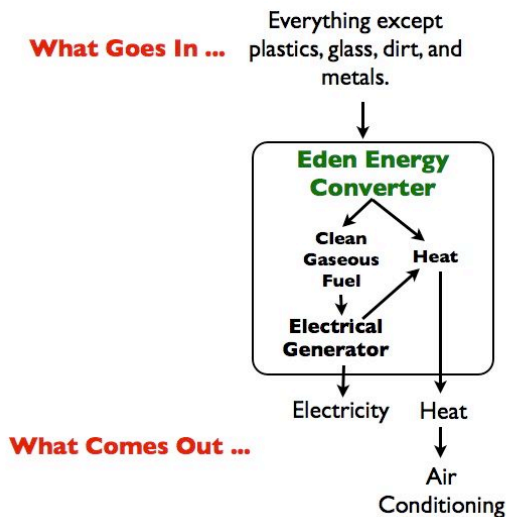
Eden Energy addresses two of America’s most pressing issues: our dangerous dependence on foreign oil and our growing mountains of trash. We will provide homeowners and small businesses with the means to cleanly, conveniently, and self-sufficiently meet their power, heating, and cooling needs using renewable solid biomass resources such as trash, wood, and other carbon-based debris.

Our initial product offering will be the Eden Energy System, a behind-the-home unit capable of providing 100% of a household’s heat, electrical (including electric cars), and air conditioning needs without fossil fuels. The Eden Energy System performs safely and cleanly, because it operates on the same principles as the human body. Like you, the Eden Energy System eats solid carbon-based fuel. Like you, it converts that fuel into energy. Like you, it uses fuel very efficiently. Like you, it does not have a smokestack that spews pollutants into the atmosphere.

While wood is the most obvious renewable solid fuel source, the Eden Energy System will also “eat” a large percentage of a household’s trash and garbage. Users of the system will sort their waste into carbon-based and non-carbon-based waste just as they sort their recyclables now. Our system is the ultimate recycler as it allows the energy from the waste to be reclaimed and used directly to power and heat (or cool) the home. Recycling trash in this way will create additional savings for the homeowner as waste removal costs will be lower. More importantly, it will lessen the flow of waste into our overcrowded landfills and reduce the fossil fuels used for waste transport.

Unlike the increasingly regulated (or banned) outdoor wood boilers that have become popular in northern climates, the Eden Energy System does not burn its fuel in the energy generation process. Compared to wood boilers, the Eden system will use half of the fuel to produce the same amount of heat as the current wood boilers *plus* meet the home’s need for electricity and cooling. All of this while easily meeting state and federal low emissions requirements.

The Eden Energy System



Examples of Carbon-Based Fuels

- | | |
|--------------------|---------------------|
| Wood | BioBricks |
| Paper/Cardboard | Construction debris |
| Grasses | Food scraps |
| Corn | Yard trimmings |
| Wood pellets | Clothing |
| Sewage pellets | Shoes |
| Agricultural waste | and more... |



Fact Sheet

Excerpts from our Technical Analysis

In an effort to remain conservative in presenting our calculations, we have tried to use easily referenced and verifiable values throughout. We are constantly gaining more data from our daily use of the prototype truck and are striving to find ever-better ways of communicating the many benefits of this technology to homeowners.

How Much Solid Fuel Does it Take?

As a combined heat and power (CHP) appliance, the Eden Energy System is able to produce both heat and electricity simultaneously from the same load of solid carbon-based fuel. This makes it extremely efficient compared to other energy solutions.

For comparison purposes, homeowners in the northeast who presently heat a typical 1200 square foot home with wood generally need to load their wood burning appliance with at least three 40-50 lb loads of wood per day. That's 120-150 plus pounds of wood per day.

With a conservatively estimated total CHP efficiency of over 81%¹ -- which is much higher than either a common wood stove or even most outdoor wood boilers -- the Eden Energy System can potentially supply *all* energy needs (heat, hot water, and electricity) to the home using *less* wood or other solid fuel than would be required by a wood burning appliance that provides heat and hot water alone.

For example, an Eden Energy System is estimated to require approximately 100 pounds of wood per day to meet the heat and electricity requirements of the typical 1200 square foot home. For those who are not accustomed to handling wood, 100 pounds of wood is roughly 7 to 10 pieces of oak cord wood (8" x 7" x 24"). This amount of wood when processed in an Eden Energy System can potentially provide up to 270,000 BTUs of heat and 40 kWh of electricity. Compare this to the 120-150 plus pounds required by wood burning appliances that can only provide heat and hot water.

Additionally, the Eden Energy System offers the potential to convert trash-based fuels into energy, creating many more fuel source options.

For maximum efficiency, we recommend that a battery storage system be used to capture excess electrical energy not immediately needed in the home while unit operates in the optimum fuel use range.

I. Value Comparison

Using an average of \$155 per cord² (2011 cost of oak firewood in New England), one cord of wood in a properly configured Eden Energy System could potentially supply up to 33 days of heat (270,000 BTU/day) *and* electricity (40 kWh/day) at a cost of approximately \$4.70/ per day. (To allow for the possibility of charging an electric car, we have added an additional 10 kWh/day to the 30 kWh/day the EPA says is used by the typical 1200 square foot home.)

¹ Calculated as sum of efficiencies for gasification process, generator, and genset engine for combined heat and electric energy production. Heat is recycled by the system to maximize efficiency of operation and output. Detailed calculations provided in appendix.

² A cord is approximately 3300 lbs as per http://www.engineeringtoolbox.com/weight-wood-d_821.html



Fact Sheet

If the Eden Energy System was used year round, the estimated annual energy costs for heat, electricity (with excess capacity for electric car) and cooling (if desired) for this typical 1200 square foot home could be as low as \$1700/year with a ZERO carbon footprint.

Compare this to an average 1200 square foot New England home's 2010 energy costs:

- Electric bill for 40 kWh = \$180/per month³ or \$2160/year
- Fuel Oil bill = 2.5 tanks of oil (688 gallons) @ \$3.50/gallon = \$2406/year
- Total current energy cost = at least \$4566/year

Using an Eden Energy System with an annual cost of \$1700:

Potential Annual Savings = \$2866/year (for a 1200 sq. ft. home if 100% of wood is purchased)

³ Online at http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_a.html Used 15 cents per kWh.