



ClearValue® Hydrogen Energy Economy - Clean Energy, Food & Water - HHarmony®

HHarmony® – A harmonious system of organic waste utilization that incorporates Sunlight to produce clean energy (no oxides of carbon “COx”, oxides of nitrogen “NyOx” or oxides of sulfur “SOx”) that further provides pure water, organic nutrients and/or nutritious food. God and nature intended for recycle of water and organic waste, e.g. recycle of wastewater and nutrients as organic waste, all powered by Sunlight. After causing great harm, humanity is only now learning to manage in the same way. Waste gases (COx, NOx and SOx) from energy generation are polluting our atmosphere, causing great harm to all life. Untreated wastewater is polluting our waterways and oceans causing great harm to all aquatic life. Current treatment processes for drinking water either leave pathogens in



the water or place in the water at least one of toxins, carcinogens and teratogens. And our food tends to be deplete of micro-nutrients (iron, manganese, calcium, magnesium, etc.), yet containing macro-nutrients added from chemical fertilizers (nitrogen, phosphorous and potassium). What is truly ironic is that rather than recycle nutrients, as does nature, humanity tends to place its organic waste, e.g. wastewater bio-solids and trash, into a landfill and then add chemical fertilizers to grow food, while we take vitamins (micro-nutrients). All the while, nature is constantly recycling before our eyes, recycling both macro and micro nutrients. Further, all the while, nature obtains its energy from Sunlight, incorporating organic waste as fertilizer. Humanity needs to be more like nature. Humanity needs to be more harmonious. Humanity needs **HHarmony®**.



HHarmony® is an application of the **ClearValue H₂ Energy Economy®**. **HHarmony®** is an extension of **Eenergy®** (“**ClearValue’s Negative/Zero Carbon Energy®**”), which takes in methane (“CH₄” that is preferably bio-gas, yet can be natural gas or cracked oil) and Sunlight to produce electricity (“e-”), hydrogen (“H₂”), oxygen (“O₂”), pure water (“H₂O”) and organic nutrients (ClearValue terms **Negative/Zero Carbon Eenergy®** as **Negative Carbon Eenergy®** if the CH₄ is bio-gas and **Zero Carbon Energy®** if the CH₄ is natural gas or cracked oil). **Eenergy®** and therefore **HHarmony®** is clean efficacious power generation which is scalable from 100 kilo-Watt (“kW”) to 1 Giga-Watt (“GW”). Cost of power is \$0.02 to \$0.04 per kilo-Watt-hour (“kWhr”) and dependent on the cost of methane (“CH₄”) or methanol (“COH₄”). Installation, capital, cost is location dependent, yet can be planned from \$1.50/Watt (“W”) to \$3.00/W. Raw materials are CH₄ or COH₄ and Sunlight; byproducts are pure water and organic nutrients that are preferably used in protein food production. Power generated per unit area is near 10 to 15 X that of solar, photo-voltaic (“PV”), producing 10 to 15 Mega-Watt (MW) per acre of light collection, depending on latitude. Therefore, if light collection area is limited, **Eenergy®** and/or **HHarmony®** is the solution.

ClearValue® clean energy innovations are based upon hydrogen (“H₂”) energy, most importantly on the combustion of pure H₂ and pure oxygen (“O₂”), e.g. HyOx® Combustion, the fuel of NASA rockets. HyOx® Combustion provides powerful engines that, with ClearValue’s Innovations, are efficient as well. Internal combustion engines (“ICE”) are near fifty percent (50%) and turbines are near seventy percent (70%) efficient, a stark contrast to hydrocarbon systems that are 15-20 and 30-35 %, respectively. A HyOx® three (3) Liter V-6 can easily produce 1000 horsepower (“HP”) and foot-pound (“ft-lb”) of torque. Further, a HyOx® turbine produces in excess of forty percent (40%) more electricity per mcf of natural gas than the best natural gas turbines available.



Answering Critical Market Needs – Humanity is challenged for pure water, safe nutritious food and clean energy. **ClearValue®** energy innovations are instrumental to solving these challenges. **ClearValue®** energy innovations are designed to provide significant value-in-use, thereby, obtaining success with via traditional business, marketing and sales techniques.

Providing Value via Benefits – The **ClearValue[®] H₂ Energy Economy[®]** brings a value-add to the clean energy marketplace. As **Eenergy[®]** generates e- at \$0.02 to \$0.04 per kWhr, effectively competing with coal, natural gas, solar and wind, and H₂ at less than \$3/kilogram (“kg”), along with byproducts of pure water and organic nutrients (animal and fish protein supplement). Critically, **Negative Carbon Eenergy[®]** and therefore **HHarmony[®]** makes waste-to-energy projects an economic practicality, having a return on investment (“ROI”) of greater than sixty percent (60%); this is critical, as, bio-gas, CH₄, is the most egregious green-house gas (“GHG”), having fifty (50) times the climate impact of carbon dioxide (“CO₂”), as stated by the United Nations. Further, **Zero Carbon Eenergy[®]** and therefore **HHarmony[®]** provides the existing hydrocarbon industries a clean energy bridge to the future; to solve climate change, we simply cannot halt or significantly disrupt the worldwide flow and trade of crude oil and natural gas. If we do, people will starve, thereby creating war. **Zero Carbon Eenergy[®]** and thereby **HHarmony[®]** provides humanity an ability to bridge a clean energy future without significant economic, human impact.

Water - Pure H₂O is a byproduct of **Eenergy[®]**, where, hydrocarbons are converted into electricity and H₂/O₂, along with pure water (“H₂O”) and organic nutrients. All life needs mineralized H₂O; therefore, the H₂O from **Eenergy[®]** is enhanced with minerals to support life. Otherwise, **Eenergy[®]** produces a pure demineralized H₂O. In the **ClearValue[®] H₂ Energy Economy[®]** every MW of power generated produces about 190 gallons/day of pure H₂O. Yes, from natural gas (preferred bio-gas, methane) and Sunlight is obtained clean power, clean H₂ fuel (if needed), pure water and nutritious food.



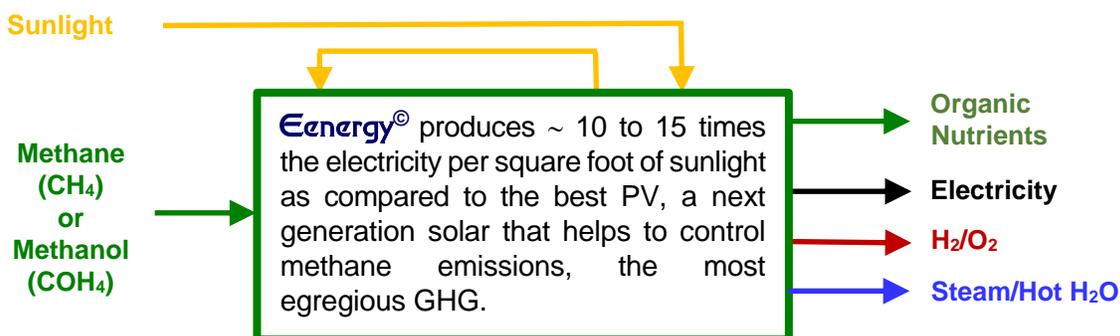
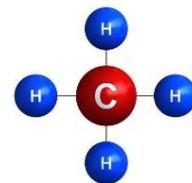
Nutrients – Organic nutrients are a by-product of **Eenergy[®]**. All life needs nutrients; while, organic nutrients are a by-product of **Eenergy[®]**. Every MW of power generated produces about 23 pounds/day of organic nutrients. Further, ClearValue’s proprietary anaerobic bio-solids digester process provides both CH₄ for **Eenergy[®]** and safe organic nutrients for food production. Safe and clean means to naturally recycle nutrients is how God and nature intended life on Earth to proceed. ClearValue’s proprietary anaerobic bio-solids digester process is planned in combination with **Eenergy[®]** in the **ClearValue[®] H₂ Energy Economy[®]**.



Patent Summary - The **ClearValue[®]** team has diligently innovated proprietary, viable and value-added solutions in H₂O purification, safe nutrient recycling and clean sustainable H₂ energy. The team has been very successful to develop solutions in H₂O purification, macro and micro nutrient recycling, manufacture of H₂O purification chemistries, noxious odor control, H₂ engines, algal sequestration/conversion of point source emissions, power generation and H₂ production, along with, H₂ management in Space Travel (NASA). ClearValue Technologies owns over 120 nationally issued and/or pending patents worldwide. All are resourced at uspto.gov and wipo.int.



Eenergy[®] comprises four (4) pieces of equipment: 1) solar collection, that defines system capacity, yet provides near 15 times the power per square foot as compared to PV; 2) reforming of CH₄ or COH₄ into H₂ and CO₂, 3) CONOX[®] algae conversion of CO₂ into O₂; and 4) a HyOx[®] steam turbine/generator system that combusts the pure H₂ and O₂, making pure H₂O, and generating e-. The HyOx[®] steam turbine/generator system can be a source of high temperature water or steam for combined heat and power (“CHP”) systems.

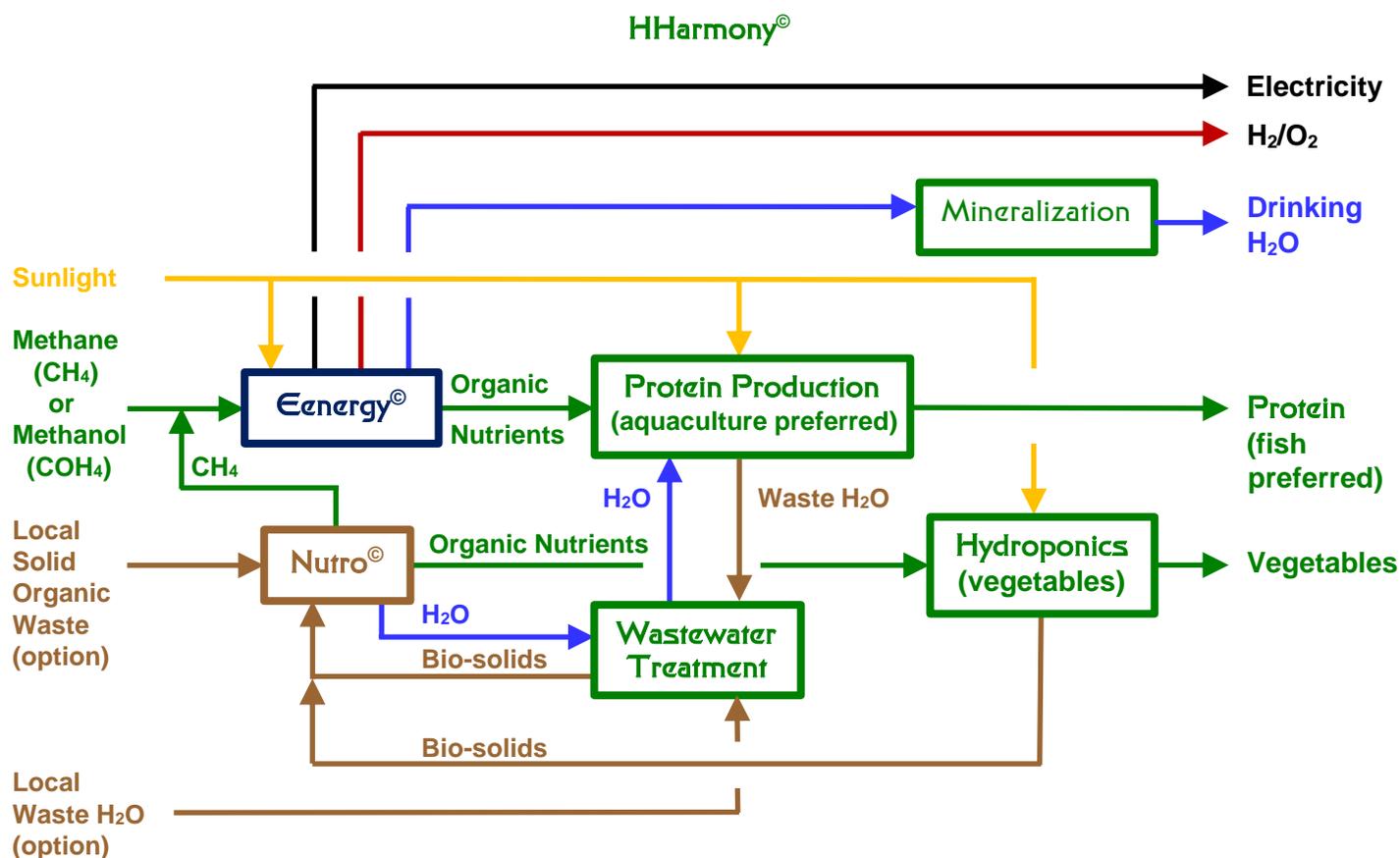


Eenergy® makes clean economical distributive power a practicality.

Eenergy® via either **Negative Carbon Eenergy**® or **Zero Carbon Eenergy**® puts you in control of your power generation needs, while providing a significant ROI. And, where remuneration for power generation is possible, **Eenergy**® can further provide significant cash flow to your business. Licensing contracts with technology flow provisions are planned on a global basis. All international sales will be performed within a local JV, having a license.



HHarmony® - comprises **Eenergy**® plus 5 additional pieces of equipment: (5) an aquaculture tank and system to grow protein¹, (6) a wastewater treatment system that purifies waste from protein production, recycling the treated water back into protein production, (7) **Nutro**®, ClearValue's bio-solids thermophilic anaerobic digestion system to produce CH₄ for **Eenergy**® and safe odor-free organic fertilizer for vegetable production, both from organic waste of the citizenry or that produced in protein production, (8) a hydroponic vegetable garden, providing food, that is fertilized with organic fertilizer from **Nutro**®; and (9) a drinking water unit that adds nutrients to the pure water produced in **Eenergy**® to thereby provide a pure and nutritious drinking water for the citizenry.



HHarmony® Application (Bedford Union Armory, Brooklyn, NY) – Assuming a natural gas price/value (variable cost) of \$4/1000 SCF (current US industrial), 5.0% cost of capital (CoC) and 5.0% annual maintenance expense, along with ClearValue royalties, the total cost of power generation is near \$0.045/kWhr (\$0.019 (variable cost), \$0.070 (CoC), \$0.070 (maintenance) and \$0.012 (royalty)). Installation of **Eenergy**® is estimated \$2/W or \$2M/MW (\$1.5/W to \$3.0/W); this is very location dependent and requires estimation by a local architect/engineering firm.

The Brooklyn WWI Armory is a perfect application for **HHarmony**®. There needs be a community center, along with a community disaster/relief site. With **HHarmony**®, the one block structure is estimated to generate 10 MW of power. Given cost of construction in New York, the cost to construct **Eenergy**® prior to an engineering architecture firm estimate, is \$3/W; therefore, a 10 MW facility is estimated \$30M, making the cost of capital \$0.011/kWhr and

¹ The aquaculture tank can alternatively be a cattle or hog or chicken (etc.) operation, where the algae, organic protein nutrients, from CONOX® are dried and then fed for food production.

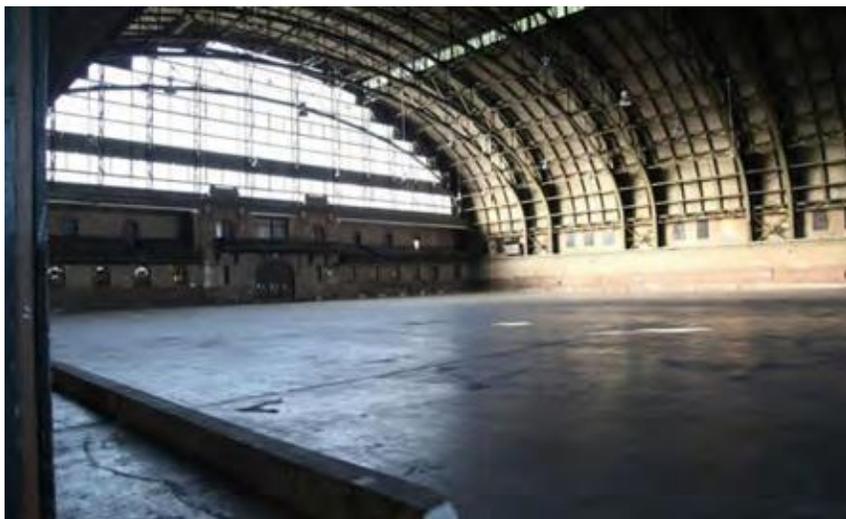
the total cost of power near \$0.048/kWhr (excluding clean energy subsidies). The grid price in the area is near \$0.15/kWhr; therefore, estimated annual earnings from power production is **\$9,408,000**.

In addition, a forty-thousand (40,000) square foot organic aquaculture pool and system is planned for the basement



that will produce near 2M annual pounds of fish at an estimated contribution of near \$2.00 per pound, thereby generating annual earnings of **\$4,000,000**. Further, a forty-thousand (40,000) sq. ft. hydroponic organic hydroponic greenhouse is planned that will produce 30 pounds of organic vegetables per sq. ft., a total of 1,200,000 pounds of organic vegetables per year. Estimating a wholesale contribution of \$1 per pound that equates to **\$1,200,000** annually. Further still and in conjunction with **ClearValue**[®], an architectural proposal by ARQURBIS plans for the three floors of the Galleria are planned for 64,546 sq. ft. of commercial space with a shopping arcade on the first floor and a co-working space on the second, if

not, third floor as well. Alternatively, the third floor would house a gymnasium, as well as an amphitheater for local events. The shopping arcade in the first floor of the Galleria would be prime commercial space. In accord with a \$100 cost per sq. ft. rate for prime commercial space in Crown Heights, the 27,000 sq. ft. of this floor would bring **\$2,700,000** annual contribution. Use of the 21,472 sq. ft. of the second floor in the Galleria for co-working office space would bring **\$2,127,345** annual contribution. And if the 37,546 sq. ft. of the second and third floors in the Galleria were used for co-working office space, that would bring an annual contribution of **\$3,719,881**. If all of the 64,546 sq. ft. of the three floors of the Galleria were dedicated to co-working office space, the annual contribution would be **\$6,394,914**. Total earnings for the new Crown Heights Community Center contributable to **HHarmony**[®] are **\$21,002,914**. In total 120 full time jobs are planned further adding **\$7,200,000** to the local community.



Eenergy[®] Application (urban buildings, commercial and multi-family residential) – Again, assuming a natural gas price/value (variable cost) of \$4/1000 SCF (current US industrial), 5.0% cost of capital (CoC) and 5.0% annual maintenance expense, along with ClearValue royalties, the total cost of power generation is near \$0.045/kWhr (\$0.019 (variable cost), \$0.070 (CoC), \$0.070 (maintenance) and \$0.012 (royalty)). Installation is estimated \$2/W or \$2M/MW (\$1.5/W to \$3.0/W); a very location dependent figure that requires estimation by a local architect/engineering firm.



It is of critical note that due to the efficaciousness of **Negative/Zero Carbon Eenergy**[®] all commercial/multi-family residential structures are off the grid (except those of industrial activity); and, those of ten (10) stories or less produce totally clean power (No CO_x, NO_x or SO_x emissions, only water, H₂O) and to the extent less than 10 stories is to the extent that clean power can be sold back to the grid (earnings are location/regulation dependent). Property owners obtain earnings from tenant power sales.