

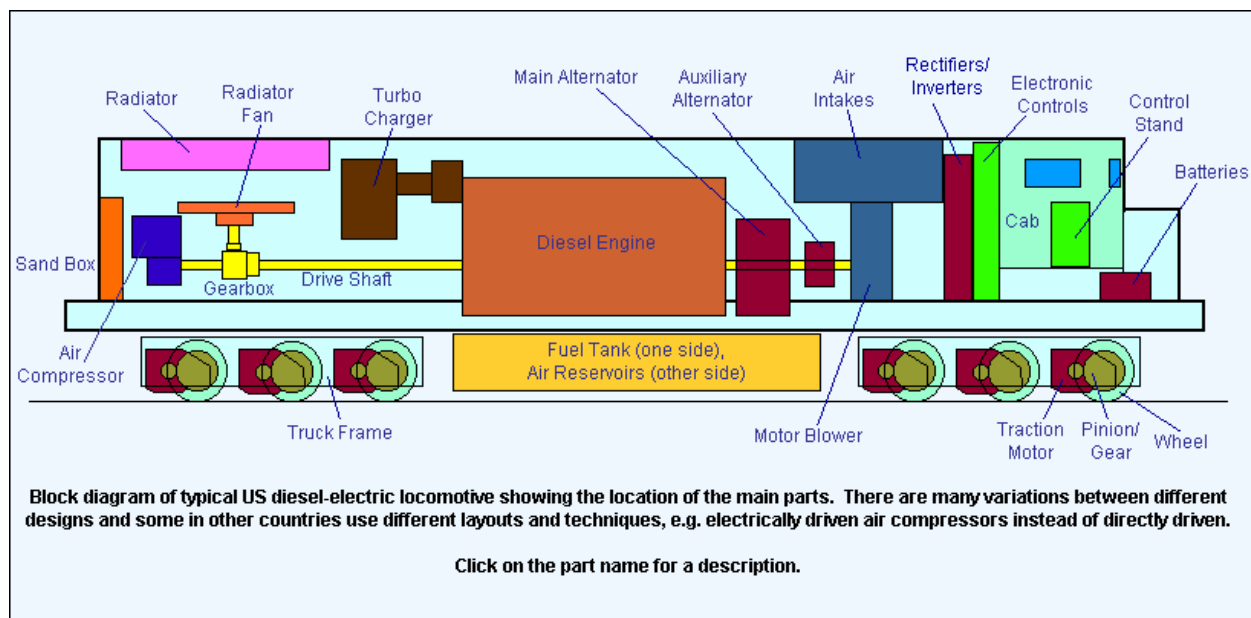
## Press Release

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For Immediate Release  
Date: April 10, 2007

### Subject: **Self-BioFueled™ Trains & Locomotives**

**WaterSmart Environmental, Inc.** announces its intention to provide **SuperGreen™ Self-Biofueled™ Trains and Locomotives**. The trains and locomotives will be fitted with a Dual-Biofuel™ propulsion system that uses both biodiesel and compressed natural gas (CNG) bio-fuels. The trains and locomotives will exhibit zero greenhouse gas (GHG) emissions since all propulsion and electricity generation combustion products will be beneficially recycled to produce Spirulina microalgae within an enclosed photobioreactor. The microalgae will, in turn, be converted into biodiesel—a technology that has already been proved (Aquatic Species Program) by the National Renewable Energy Laboratory (NREL) operated by the U.S. Department of Energy.



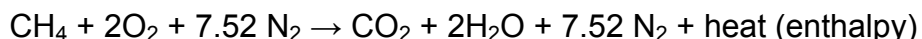
All of the wastes associated with biodiesel production will be anaerobically digested to produce methane gas. Both biodiesel and compressed natural gas (CNG) biofuels will be used to power the trains and locomotives. The production of these two biofuels will always be sufficient to completely satisfy the power requirements of the trains and locomotives while en route to their next destination or while idling during freight or passenger transfer operations. While at a destination the trains and locomotives will continue to produce biofuels while idling. The technology will support locomotive idling equipment now being implemented to automatically reduce idling during rail yard activities. The technology also produces **BioLubricants™** that are used to enhance locomotive crankcase lubrication and power transmission requirements.

thereby improving fuel economy. The technology also produces oxygen during microalgae photosynthesis. This oxygen is added to the locomotive combustion air to increase the oxygen content from 20.95% to 28.71% thereby improving power output while reducing particulate matter (soot). Please refer to attached WSE Drawing No. 1598-1 for additional details.

**FAQ Information:** An average locomotive uses about 0.4 gallons of diesel fuel per minute of operation. This usage translates into 200,000 gallons of diesel fuel per year. The fuel is used for train propulsion as well as for electricity generation. During operation a locomotive uses full propulsion power about 50% of the time with the remainder spent idling. Idling consists of working idle (31%) while coasting downhill and parked idle (19%) during rail yard freight and passenger unloading and loading activities. During working and parked idling a locomotive uses about 17% of the fuel used during full propulsion power operation. A **Self-Biofueled™** locomotive will use about 25% CNG and 75% biodiesel. Running under full propulsion power a 3,000 horsepower **Self-Biofueled™** train will produce the gasoline gallon equivalent of 8 gallons of biodiesel fuel per minute. A 6,000 horsepower **Self-Biofueled™** train will produce twice as much as gasoline gallon equivalent biodiesel is proportional to propulsion power applied as well as to total greenhouse gas emissions produced. **The technology produces more biofuel than it uses at both full propulsion and during all idling conditions.** The Altronic fuel control system (see <http://www.gti-aci.com/>) will be set up to use 100% of the methane produced while accumulating excess biodiesel. The excess and fully certified **SuperBiodiesel™** B100 can be used to fuel other trains or for other surface transportation equipment. The exact amount of excess biodiesel produced depends entirely on propulsion power usage considerations of each locomotive.

**Another Feature** of the technology is the complete elimination of unburnt hydrocarbons (HC) and the Polycyclic and Polynuclear Aromatic compounds (PAHs) that soot contains. This is achieved by the automatic addition of acetone to the biodiesel fuel at the dosage rate of 2 fluid ounces/10 gallons (1,750 ppm). At this dosage acetone acts as a 100% effective emulsifier that totally eliminates the surface tension of biodiesel thereby permitting its complete, rather than but partial, oxidation. In bulk, Acetone costs about \$0.35/lb (\$2.29/gallon). The associated increase in fuel mileage is a whopping 20%. At a diesel fuel price of \$2.50/gallon, a 20% increase in mileage translates into a fuel price of 80% x \$2.50 or \$2.00/gallon at an investment of 1,750 ppm (mg/L) of Acetone. The actual Acetone dosage translates into a bulk cost of \$0.000613.00/gallon of diesel fuel. **For each 100 gallons of Acetone (an investment of 100 x \$2.29 or \$229.00) a total of 100 ÷ 0.000613 or 163,132 gallons of diesel fuel can be saved at a marketplace value of 163,132 x \$2.50/gallon or a whopping \$407,830.00.** The increased oxygen content plus complete fuel combustion results in greater propulsion power at very little increase in cost (the purchase of Acetone). The technology comes with a 100 gallon Acetone (a two-year supply with an average locomotive) fuel tank and an associated Acetone delivery pump that will automatically deliver a 1,750 ppm dosage of Acetone to the biodiesel biofuel with provisions for external boxcar Acetone tank refill capabilities. If the Acetone tank is not refilled when empty the combustion soot formed during incomplete combustion will again occur. Combustion soot is automatically collected in a bag filter that must be disposed of as required. The associated benefits of increased mileage are lost until the Acetone tank is again refilled.

#### **Science Information Chemical Equations:**



3,000 HP Diesel Engine → 21,802 lbs CO<sub>2</sub> if 100% efficient

@ 45% efficiency CO<sub>2</sub> output becomes  $100 \div 45 \times 21,802 = 48,449$  lbs CO<sub>2</sub>

$48,449 \div 2,000$  lbs/Ton = 24.22 Tons CO<sub>2</sub>

Since 1 Ton CO<sub>2</sub> produces 10.9 gallons of biodiesel per day through the photosynthesis of Spirulina microalgae, 24.22 Tons CO<sub>2</sub>/Day produces  $10.9 \times 24.22$  or 264 GPD = 0.183 GPM

Transesterification is 6% efficient due to lipid (glucose carbohydrates) content of Spirulina microalgae. Each Ton CO<sub>2</sub> produces  $0.68 \times 0.06 = 0.04$  Tons Biodiesel and  $1.0 - 0.04 = 0.96$  Tons waste volatile solids byproducts. 24.22 Tons CO<sub>2</sub> therefore produces  $24.22 \times 0.96$  Tons Volatile Solids = 23.25 Tons Volatile Solids/Day

23.25 Tons Volatile Solids/Day x 12 cu. ft. = 558,000 lbs CH<sub>4</sub>/Day and 1,534,500 lbs CO<sub>2</sub>/Day, respectively.  $1,534,000$  lbs CO<sub>2</sub>  $\div 2,000$  lbs/Ton = 767 Tons. Each Ton CO<sub>2</sub> x 10.9 Gallons of biodiesel per day = additional biodiesel production or  $767 \times 10.9$  GPD = 8,363 GPD = 5.81 GPM

Total biodiesel production from 3,000 HP diesel engine = 0.18 GPM + 5.81 GPM = 5.99 GPM

23.25 Tons Volatile Solids/Day x 2000 lbs/Ton = 46,500 lbs Volatile Solids/Day. 46,500 lbs x 12 cu. ft./lb = 558,000 cu. ft. methane/Day. 558,000 cu. ft./Day less 15% parasitic use = 418,500 cu. ft./Day.

One Gasoline Gallon Equivalent of B100 Biodiesel = 0.88 gallons\*

At 128,000 Btu/Gallon, 0.88 gallons B100 = 112,640 Btu

One Gasoline Gallon Equivalent of CNG = 126.67 cu. ft. methane gas

At 900 Btu/cu. ft., 126.67 cu. ft. CNG = 114,003 Btu

5.99 GPM B100 x 1440 = 8,626 GPD x 128,000 Btu/Gallon = 1,104,076,800 Btu/Day

418,500 cu. ft. methane gas x 900 Btu/cu. ft. = 376,650,000 Btu/Day

Ratio of CNG to B100 = 25% to 75%

The produced **BioLubricants™** are fully equivalent to synthetic lubricants and therefore likely better than the lubricants now being used for both crankcase and transmission lubrication. **Biofuels** and **BioLubricants** production are entirely automatic requiring but intermittent monitoring. Better lubrication translates into better mileage and significantly longer equipment life. A self-biofueled 3,000 horsepower locomotive will produce an average of 4,200 gallons of **BioLubricants** per year. At \$20/gallon the annual savings total  $\$20 \times 4,200$  or \$84,000/Year. A self-biofueled 6,000 horsepower locomotive will produce an average of 8,400 gallons of **BioLubricants** per year as **BioLubricants** production is also proportional to propulsion power applied as well as total greenhouse gas emissions produced. Time required to fully hook up a self-biofueled locomotive is estimated at 30 days only as the 3-boxcar components are factory assembled and tested prior to the arrival of the connecting locomotive.

The rail transportation industry is under considerable pressure to reduce its discharge of greenhouse gas emissions, especially in California. **The concepts of zero greenhouse gas locomotive emissions and self-biofueled trains are entirely new to the marketplace.** The self-biofueled trains will produce average certified emission reduction (CER) credits of US\$12,200 per year per locomotive with the strong likelihood of increased future values. The technology also saves 200,000 gallons of diesel fuel per year (more with Acetone addition) for each locomotive. At a sell price of US\$3.5 million per locomotive the technology produces a splendid Internal Rate of Return (IRR) and an enhanced Net Positive Value (NPV). The technology can be applied to both new and existing locomotives.

There are widespread reports that rail transportation companies have been imposing excessive surcharges according to the following Glenn Hess report:

January 29, 2007

## **Chemical Freight – Transport Board Limits Rail Fuel Surcharges**

### **Federal regulators agree with chemical shippers' claim that current surcharge practices are unfair**

The chemical industry says it welcomes a decision by federal regulators banning excessive fuel surcharges by freight railroads and imposing strict rules on the extra fees rail carriers have been collecting in recent years to offset rising fuel costs.

"We are pleased that the Surface Transportation Board (STB) affirmed our position about the need for fairness in rail fuel surcharge practices," says Thomas E. Schick, the American Chemistry Council's (ACC) senior director for distribution. "We and other petitioners argued that current surcharge practices were unreasonable, and the STB agreed."

On Jan. 26, STB issued a final rule declaring it an unreasonable practice for railroads to compute fuel surcharges in a manner that does not directly correlate with actual fuel costs for specific rail shipments. The rule prohibits the assessment of fuel surcharges according to a percentage calculation of the base rate charged to shippers.

It also prohibits "double-dipping," which is the practice of applying to the same traffic both a fuel surcharge and a rate increase based on a cost index that includes a fuel component.

"Our decision brings common sense and fairness to the railroads' implementation of fuel surcharges," says STB Chairman Charles D. Nottingham. "This new rule will preclude them from selectively imposing surcharges in a manner that bears little relationship to actual fuel use."

At a hearing convened by STB in May 2006, ACC released the results of an economic analysis it commissioned that concluded the revenue generated by the rail fuel surcharges "greatly exceeds" actual fuel costs because of flaws in the methodologies used to calculate the surcharges.

The analysis, prepared by the economic consulting firm Snavely King Majoros O'Connor & Lee, estimated that rail fuel surcharges cost shippers—including the chemistry sector—roughly \$1 billion in overcharges during 2005.

"Unfortunately, fuel surcharges are just the tip of the iceberg when it comes to unfair railroad business practices," Schick contends. "We will continue to press Congress and all appropriate regulatory agencies for fairness in every aspect of our relationship with the railroads."

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The surcharges have increased rail company profits but many have decided to reinvest these profits to enhance their intermodal services and delivery capacity rather than distributing the profits to shareholders. The self-biofueled capability should entirely eliminate the surcharge controversy as well as all efforts to regulate greenhouse gas emissions. The self-biofueled product will quickly sell as its internal rate of return is optimal. The attractive sell price is intended to quickly move the product into the marketplace where it can achieve immediate benefits for climate change. The emergence of self-fueled trains and locomotives should prove highly popular with regulators, users, freight customers, and the environment.

WaterSmart Environmental is marketing its Kyoto Protocol compliant wastes-to-energy technology on an economic development platform to concentrated animal feeding operators and to municipalities. Animal farmers benefit by purchasing biodiesel, electricity, and natural gas (methane) at a 20% discount from retail. Municipalities also benefit by making biodiesel, electricity, natural gas, and potable water available to its citizens and businesses at a 20% discount from existing prices. The technology is marketed on a build-own-operate basis thereby eliminating the necessity for local sales and property tax increases since project financing is entirely secured from the financial marketplace. Municipalities that embrace the waste-to-energy technology automatically become zero waste-to-landfill communities. The waste-to-renewable energy technology has been slowly developed over the last 10 years. It is just now being introduced to the international marketplace. The technology has the clear potential for making every single city throughout the world energy and fuels independent while reducing oil and natural gas imports. The technology will also permit every single city throughout the world to improve water and wastewater treatment infrastructure while creating jobs and investment opportunities. The waste-to-energy technology can also be applied to Sugar Cane Mills as well as Pulp & Paper Mills with equal success. Both types of mills become energy, food, fuels, and water independent while significantly increasing profits from routine operations. In the case of Sugar Cane Mills temporary and seasonal jobs turn into full time better paying jobs.

**Widespread use of the waste-to-renewable energy technologies carries with it the potential for reversing global warming.**

**WaterSmart Environmental, Inc.** is a provider of waste-to-energy, food independence, water independence, and energy independence technologies and a manufacturer of highly engineered water purification components and systems. The company designs and builds a wide variety of water treatment equipment including packaged water and wastewater treatment plants, UltraPac™ aerobic package plants, OAT™ Process anaerobic digesters with associated energy production, aerators, filters, PuriSep™ and SmartWater™ oil/water and solids/liquids separators, RainDrain™ perimeter trench sand filters for stormwater runoff, dissolved air flotation separators, air strippers, complete skid assembled aqueous waste treatment plants, FilterFresh™ skid mounted potable water production plants, skid mounted wastewater treatment systems for laundromats, commercial laundries, and car/truck wash facilities with water reclamation and reuse, softeners, demineralizers, activated carbon treatment equipment, and water purifiers for domestic and international markets.

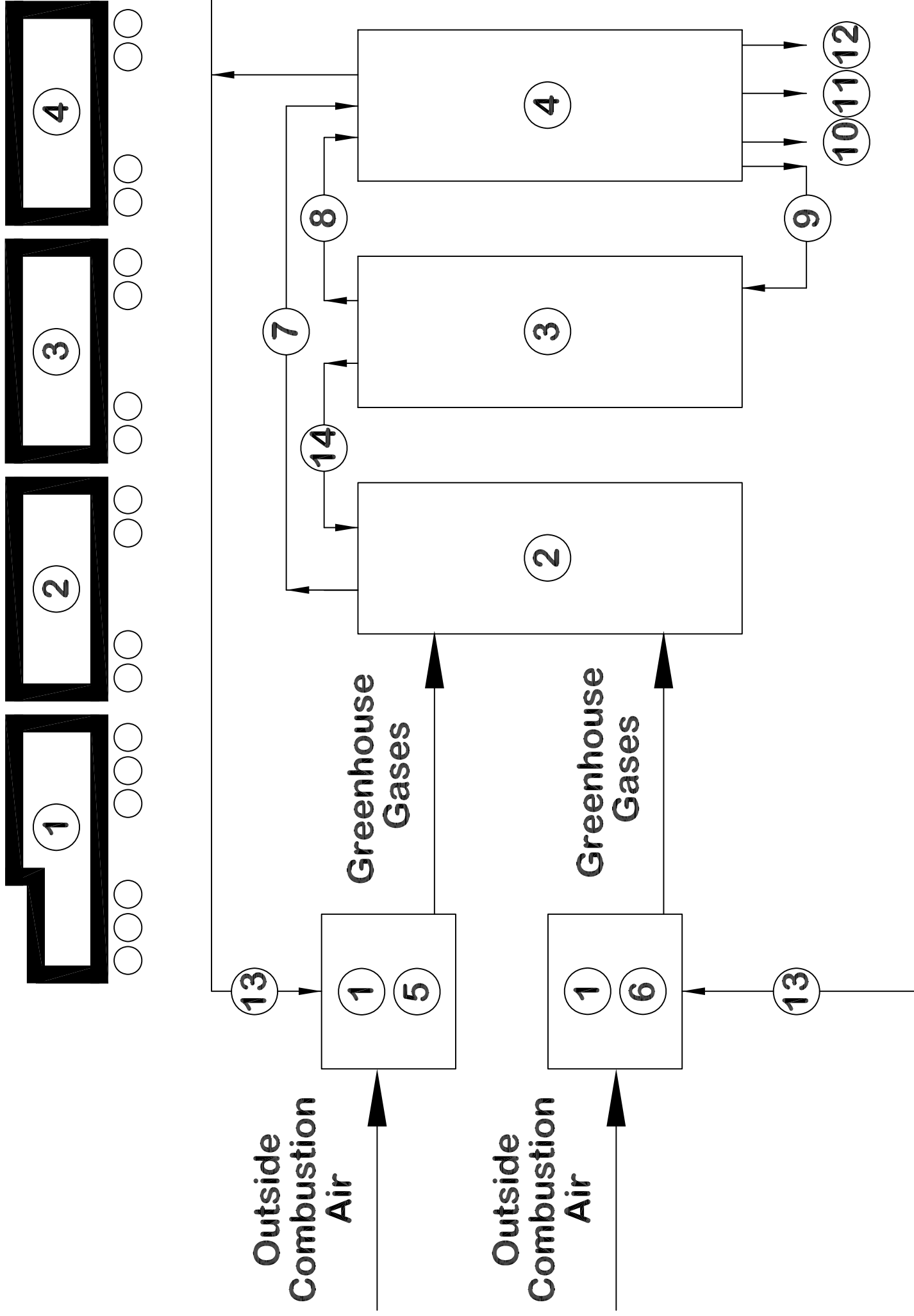
\* National Association of Fleet Administrators, Inc., see: <http://www.nafa.org/>

*Specialists in Water and Wastewater Treatment Featuring  
Next Generation Wastes-To-**Renewable Energy** Technologies*



# Legend

- ① Existing Locomotive
- ② New Precast Concrete Boxcar Photobioreactor
- ③ New Precast Concrete Boxcar Anaerobic Digester
- ④ New Precast Concrete Boxcar Process Equipment
- ⑤ Locomotive Generator
- ⑥ Locomotive Diesel Engine
- ⑦ Spirulina Microalgae
- ⑧ Methane Gas
- ⑨ Biodiesel Production Wastes
- ⑩ BioLubricants™
- ⑪ SuperBiodiesel™ Fuel
- ⑫ CNG Fuel
- ⑬ Oxygen Gas
- ⑭ Carbon Dioxide Gas



# Simplified Process Flow Schematic

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 Shawnee Mission, Kansas

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TITLE: Self Biofuelled SuperGreen™ Trains & Locomotives

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