

# ***Toxic Scandal, Toxic Threat and Environmental Racism***

**Sun Energy Group, LLC's  
“Louisiana Gasification Facility”  
Plasma Arc Garbage Incinerator in Disguise  
Proposed for New Orleans**



**Greenaction for Health and Environmental Justice  
June 16, 2011**

**[www.greenaction.org](http://www.greenaction.org)**



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### **Sun Energy Group, LLC's "Louisiana Gasification Facility" Plasma Arc Garbage Incinerator in Disguise Proposed for New Orleans**

Greenaction for Health and Environmental Justice researched and produced this report as a public service to educate and alert residents, the general public, government officials and regulatory agencies to the health, environmental and economic threat posed by the plasma arc gasification facility proposed by Sun Energy Group, LLC in New Orleans, Louisiana for the processing of municipal solid waste and other undisclosed wastes.

On November 2, 2010, Sun Energy Group, LLC submitted a "Proposal for the Louisiana Gasification Facility" to the City of New Orleans. In partnership with Air Products, Sun Energy, through a joint venture company, Louisiana Gasification Facility LLC (LGF), proposes to build, own and operate what they call an "Energy From Waste" ("EfW") facility" at 3900 Jourdan Road, New Orleans, Louisiana in the New Orleans Regional Business Park.

The LGF would use "Plasma Arc Gasification" technology supplied by Westinghouse Plasma Corporation, a wholly-owned subsidiary of Alter NRG. Sun Energy and other companies promoting plasma arc and gasification all claim that the technology is not incineration. If you relied on company websites, diagrams and process descriptions, you might not realize that these are indeed two-stage incinerators disguised as "renewable energy" technologies.

While there are differences with traditional incineration technologies, the plasma arc technology proposed by Sun Energy involves incineration/combustion as an essential component. One difference is that while traditional incinerators burn the waste directly, plasma arc heats the waste in the gasification stage, creating a synthetic gas ("syngas"). Key to the process and technology proposed by Sun Energy is the burning of the syngas in a turbine or boiler. This combustion process is the incineration that results in emissions of toxic and criteria pollutants into the air. These emissions would include dioxins and furans, highly toxic chemicals linked to a wide range of profound illnesses including cancer, reproductive, developmental and immunological diseases.

Without offering real proof, Sun Energy claims they can generate large amounts of electricity (114 megawatts per day) by treating large amounts of garbage (2,500 tons per day) using plasma arc gasification technology and the burning of the syngas.<sup>1</sup>

All the neighborhoods near the proposed waste plant are low-income, people of color communities, continuing the decades-long national practice of environmental racism that targets such communities for waste disposal facilities and other polluting industries.

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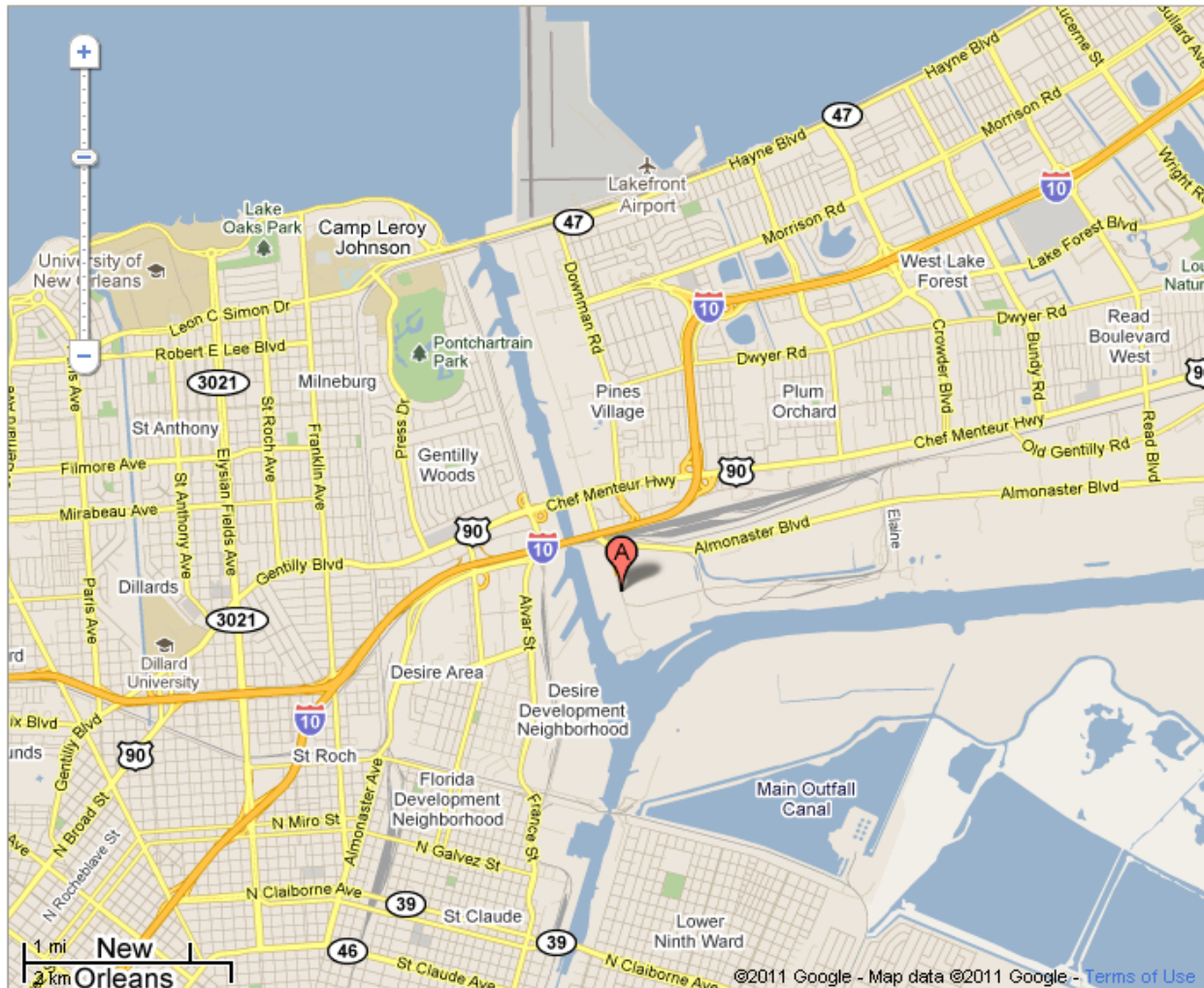
<sup>1</sup> Sun Energy Group, LLC, Air Products, "Proposal for The Louisiana Gasification Facility Presented to The City of New Orleans," November 2, 2010, page 7.

As there has never been a commercial plasma arc or gasification facility in the U.S. that processes garbage, since there are only a few in the world, and in light of the problems experienced by existing and closed plasma arc waste treatment plants, it is vital that the public and government become aware of the facts that demonstrate the problems and dangers of this technology.

Greenaction has researched the proposal and claims made by Sun Energy and their project partner Air Products who are hoping to build and operate a plasma arc facility in New Orleans. We have also researched the claims and experience of the proposed technology provider, Alter NRG/Westinghouse Plasma. We have researched existing, closed and proposed plasma arc and gasification facilities in the U.S. and worldwide, and we have evaluated the implications on health, the environment, climate, and the economy.

This report answers the question: “Is plasma arc a proven technology or an incinerator in disguise that threatens the health, environment and economy of the people and the City of New Orleans?”

Despite the rosy and bold claims of Sun Energy, the reality is that many of the company’s key claims do not hold up to scrutiny. The facts are clear: a plasma arc waste treatment facility would be an incinerator in disguise that would pollute the air, likely generate little or no electricity, compete with renewable energy, recycling and zero waste programs, and potentially be a financial disaster for residents and the City of New Orleans.



# **Claims Versus Reality: Sun Energy’s “Louisiana Gasification Facility” Proposal**

## **I. Sun Energy’s Proposed “Recycling” Proposal Is Inadequate and Now Irrelevant:**

### **Claim: Sun Energy Would Initiate a “Full Scale” Recycling Program**

A key part of Sun Energy’s proposal to the City is that they would initiate “...a full scale recycling program”<sup>2</sup> and bring back curbside recycling to New Orleans.<sup>3</sup>

### **Reality: Sun Energy’s Recycling Proposal Is Inadequate and Flawed, and is Now Irrelevant**

Not only has the recycling part of the proposal become irrelevant because New Orleans reinstated curbside recycling on May 2, 2011,<sup>4</sup> but their so-called “full scale” program was minimal and would have been completely inadequate.

In the Sun Energy proposal, recycling pickups only would have occurred every other week.<sup>5</sup> Currently, New Orleans schedules recycling pickups once every week.<sup>6</sup> Sun Energy proposed to service approximately 130,000 homes in New Orleans with only six (6) trucks.<sup>7</sup> The proposed recycling services (possibly limited by location) for Municipal buildings would not collect plastics, glass, or metal products such as aluminum or tin cans.<sup>8</sup> In addition, Sun Energy’s proposal did not offer a composting program<sup>9</sup> which should be an important component of any serious Zero Waste effort.

### **Reality: Sun Energy’s Project Would Undermine Zero Waste & Recycling Efforts**

As Sun Energy would require the City to commit to a 20 year contractual commitment to send waste to the LGF plant, the City would likely be unable to increase their recycling rates as they would have to keep sending Sun Energy an agreed-upon amount of waste.

## **II. Lack of Relevant Experience of Sun Energy’s Project Team**

### **Claim: Sun Energy Project Team Has Relevant Experience**

### **Reality: Project Partners Lack Any Experience With This Technology for Solid Waste:**

Neither Sun Energy nor their project partner Air Products has any experience whatsoever operating or owning a plasma arc or other type of gasification plant for waste treatment. Sun Energy formed to pursue this business venture without any experience in the waste industry at all.

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<sup>2</sup> Sun Energy Group, LLC, Proposal, page 9.

<sup>3</sup> Sun Energy Group, LLC, Proposal, pages 2, 9, 12-14.

<sup>4</sup> Curbside Recycling Registration, The City of New Orleans, visited 10 June 2011  
<<http://www.nola.gov/en/RESIDENTS/Department-Of-Sanitation/Curbside-Recycling>>.

<sup>5</sup> Sun Energy Group, LLC, Proposal, page 12.

<sup>6</sup> "Curbside Recycling Registration," visited 10 June 2011.

<sup>7</sup> Sun Energy Group, LLC, Proposal, page 12.

<sup>8</sup> Sun Energy Group, LLC, Proposal, page 13.

<sup>9</sup> Sun Energy Group, LLC, Proposal, pages 12-17.

Despite Sun Energy's claim that Air Products "has many years of experience, the truth is that Air Products has no commercial experience treating waste materials in a plasma or other type of gasification plant.

It is also interesting that Sun Energy portrays themselves as an alternative to incinerators which they admit are "problematic."<sup>10</sup> This criticism of incineration is curious (although accurate) as Sun Energy's partner Air Products "actively managed the [waste-to-energy] facilities dedicated to its 50% joint venture interest in American Ref-Fuel."<sup>11</sup> American Ref-fuel, now Covanta Energy, is a long time operator of mass burn incineration plants that emit a wide range of toxic and criteria pollutants into the air.<sup>12</sup>

### **III. Commitment of Public Funds and Risk to the Public:**

#### **Claim: Sun Energy Claims No Need for Public Funds or Risk to Public**

Sun Energy claims that their facility and project can be "...accomplished with private capital and little to no risk for the City."<sup>13</sup>

#### **Reality: Sun Energy Wants 20 Year Commitment of Public Funds, and there is a Risk:**

The reality is that substantial public funds and risk would be involved. As the City would have to agree that the Sun Energy facility would be the "sole source disposal site"<sup>14</sup> and sign a contract to send the City's garbage to this proposed facility for twenty years,<sup>15</sup> the City and taxpayers would indeed commit to spending millions of dollars and incur a tremendous financial risk. Asking the City to commit by a binding contract to send all their waste to a facility using a problem-plagued and at best unproven technology is a risky gamble with public funds.

Also, despite the claims of "no risk" to the public, the public should know that due to problems with plasma arc technology, the only two known commercial plasma arc waste treatment plants that had operated in the United States both closed down and had major problems with leaving stockpiles of untreated wastes. The Hawaii Medical Vitrification Facility left stockpiles of untreated medical waste when their plasma arc equipment had major problems, and the Allied Technology Group facility in Richland, Washington went bankrupt and left stockpiles of mixed radioactive/hazardous wastes.<sup>16</sup>

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<sup>10</sup> Sun Energy Group, LLC, Proposal, page 15.

<sup>11</sup> Sun Energy Group, LLC, Proposal, page 40.

<sup>12</sup> Covanta Facilities, Covanta Energy, visited 14 June 2011 <<http://www.covantaenergy.com/en/list-of-facilities/covanta-facilities.aspx>>; Global Alliance for Incinerator Alternatives (GAIA), "Incinerators: Myths vs. Facts," 2010, found at <[http://www.no-burn.org/downloads/Incinerator\\_Myths\\_vs\\_Facts%20December%202010.pdf](http://www.no-burn.org/downloads/Incinerator_Myths_vs_Facts%20December%202010.pdf)>.

<sup>13</sup> Sun Energy Group, LLC, Proposal, page 2.

<sup>14</sup> Sun Energy Group, LLC, Proposal, page 9.

<sup>15</sup> Sun Energy Group, LLC, Proposal, page 21.

<sup>16</sup> Greenaction for Health and Environmental Justice, Global Alliance for Incinerator Alternatives (GAIA), "Incinerators in Disguise Case Studies of Gasification, Pyrolysis, and Plasma in Europe, Asia, and the United States," 2006, found at <<http://greenaction.org/incinerators/documents/IncineratorsInDisguiseReportJune2006.pdf>>.

## **IV. What Energy Generation?**

### **Claim: Sun Energy can generate 114 megawatts of electricity**

Sun Energy claims that “The Energy from Waste (EfW) facility proposed by Sun Energy is designed to process approximately 2500 tons per day of municipal solid waste to make 114 MW of power. This is about 50% more efficient than today’s mass burn plants.”<sup>17</sup>

### **Reality: What Electricity? Where is the proof?**

There is no evidence of any similar plant in the world generating even 5% of this amount of power. Sun Energy provides absolutely no documentation based on actual experience of a similar plant for their claim that they can generate 114 MW or even 5 MW. They provide absolutely no proof of their claim about the technology they would use being 50% more efficient than mass burn plants.

There is no evidence submitted by Sun Energy, Air Products, AlterNRG/Westinghouse Plasma or any other plasma arc company in the world that any significant amount of energy can actually be generated at a facility treating wastes with this technology.

Plasma arc facilities are normally generated in a high-energy electrical discharge or arc, and as such require considerable amounts of electrical energy to operate. It is yet to be proven that a full-scale plasma incineration can generate more electricity from the gas stream generated, than is put into the process to treat the waste.

As a 2006 Nature Magazine article says, “...despite its promise [plasma arc] has not yet turned trash to gold.”<sup>18</sup>

In February 2008, a SMUD (Sacramento Municipal Utility District) official publicly questioned claims that Westinghouse Plasma’s technology could generate more electricity than it would use. “It takes a lot of electricity,” Jim Shetler, the SMUD’s assistant general manager for energy supply, said in an interview. “Do you use more electricity in the process than you gain from the gas stream that you use to burn and generate electricity?”<sup>19</sup> The City of Sacramento, California’s confirmation that the Alter NRG/Westinghouse Plasma had not been able to generate much if any electricity at the Hitachi Metals plant in Utashinai, Japan was a key reason the City of Sacramento rejected a similar proposal in 2008.

## **V. Would this be a Renewable Energy Facility as Sun Energy Claims?**

### **Claim: The LGF Would be a Renewable Energy Project**

In their cover letter to the Mayor accompanying the proposal, Sun Energy President D’Juan M. Hernandez refers to their project as a “Recycling and Renewable Energy Proposal” that will benefit the City of New Orleans.<sup>20</sup>

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<sup>17</sup> Sun Energy Group, LLC, Proposal, page 14.

<sup>18</sup> David Cyranoski, "One Man’s Trash...," *Nature*, Volume 444, November 16, 2006, visited February 27, 2008 <<http://www.nature.com/nature/journal/v444/n7117/full/444262a.html>>.

<sup>19</sup> Terry Hardy and Chris Bowman, "City Sees Green in Garbage Proposal," *Sacramento Bee*, February 27, 2008.

<sup>20</sup> Sun Energy Group, LLC, Proposal, page 2.

**Reality: The Gasification process would use Met Coke, a dirty fossil fuel derived from coal**

The Alter NRG Plasma Gasifier System (APGS) process utilizes a “coke bed” inside the gasifier.<sup>21</sup> “The APGS reactor will be designed to operate using Met Coke.”<sup>22</sup> Metallurgical Coke is a polluting fossil fuel derived from coal and is dirty, non-renewable energy.

**Reality: Garbage is Not a Renewable Energy Source**

Contrary to Sun Energy’s claims that gasification and incineration of garbage makes renewable energy, the truth is that garbage is not and should never be considered a renewable energy source. The sun and wind are renewable energy sources, not garbage. Garbage should be reduced, recycled, reused and prevented from being generated where possible in the first place – not considered a “renewable resource” that we should continue making more and more of.

**VI. What types of Waste Would be Handled at the LGF?**

**Claim: MSW/garbage only?**

In the proposal’s “Project Background” Sun Energy writes that the facility will “effectively and economically manage solid waste....”<sup>23</sup> They refer to the technology as a “MSW Plasma Arc Gasifier,” in their “Description of Major Systems and Emissions Units” section and solely discuss its use for MSW.<sup>24</sup>

**Reality: The proposal mentions wastes in addition to MSW/garbage without identifying them**

Sun Energy’s proposal is contradictory and vague regarding what types of waste would be handled at their facility. The Sun Energy proposal overall emphasizes that they would treat Municipal Solid Waste – garbage.

However, there are troubling indications in their proposal about other waste streams that could open the door to even more problematic and dangerous wastes.

In their proposal to the City, Sun Energy states that “post-recycled waste” is a “key component” of its feedstock but they fail to say what the other waste feedstock(s) could or would be used.<sup>25</sup> In their Proposal Summary they write that their project “...contemplates....the Sun Energy EfW facility as a sole source disposal site for its Municipal Solid Waste *and other forms of waste under terms agreed upon* (emphasis added).”<sup>26</sup> Nowhere in their proposal do they mention what these other wastes could be, an ominous omission.

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<sup>21</sup> Sun Energy Group, LLC, Proposal, page 45.

<sup>22</sup> Sun Energy Group, LLC, Proposal, page 48.

<sup>23</sup> Sun Energy Group, LLC, Proposal, page 17.

<sup>24</sup> Sun Energy Group, LLC, Proposal, page 44.

<sup>25</sup> Sun Energy Group, LLC, Proposal, page 7.

<sup>26</sup> Sun Energy Group, LLC, Proposal, page 9.

## VII. Not an Incinerator - or an Incinerator in Disguise?

**Claim: The proposed process and technology does not include incineration of wastes**

Sun Energy claims the waste treatment process they would use is not incineration.

**Reality: The project would involve incineration, and Sun Energy admits combustion is a part of their process.**

Sun Energy says they will use the plasma arc gasification technology of Westinghouse Plasma/Alter NRG. This technology involves heating the waste but then in a mandatory second stage of the process they would combust/incinerate the gases, called syngas.

Sun Energy admits that their process involves combustion of gases containing pollutants and contaminants in their "Gasification Process" discussion:

*"The product gases can be combusted in conventional boiler systems....or can be combusted in a gas turbine (emphasis added)."*<sup>27</sup>

Sun Energy and other gasification companies claim that gasification differs from incineration "...since it occurs in an oxygen deficient environment..."<sup>28</sup> However, the reality is that oxygen is already present in the MSW, resulting in the conditions that lead to the formation and emissions of highly toxic dioxin during the combustion of syngas.

**Reality: Sun Energy admits their LGF would need a Title V permit under the Clean Air Act's "Section 129 Rules for Solid Waste Combustion"**<sup>29</sup>

Despite their claim that their process does not include incineration, the fact is that Sun Energy admits their facility is categorized under Section 129 of the Clean Air Act. According to the United States Environmental Protection Agency, Congress added Section 129 to the Clean Air Act in 1990 specifically to address emissions from solid waste combustion.<sup>30</sup>

## VIII. Emissions:

**Claim: Low Emissions of Pollutants**

Sun Energy's proposal claims that "The potential emissions from the proposed LGF have been determined based on syngas and natural gas combustion in the boiler and emissions from other ancillary operations."<sup>31</sup>

**Reality: The emissions data is a guess, as there are no similar plants.**

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<sup>27</sup> Sun Energy Group, LLC, Proposal, page 44.

<sup>28</sup> Sun Energy Group, LLC, Proposal, page 44.

<sup>29</sup> Sun Energy Group, LLC, Proposal, page 51.

<sup>30</sup> "Section 129 Rules for Solid Waste Combustion," U.S. Environmental Protection Agency, visited 13 June 2011 <<http://www.epa.gov/ttn/atw/129/gil2.pdf>>.

<sup>31</sup> Sun Energy Group, LLC, Proposal, page 51.



Sun Energy failed to provide any documentation of their claim of low emissions. There are no citations about where they derived their emissions projections from, nor are there any similar plants in the world that such data could be based on.

Table 2-2 on page 52 of Sun Energy’s proposal to the City describing the alleged “Potential Annual Emissions” states that the source and detailed calculations for these claims can be found in Appendix D. However, Appendix D has no information at all about emissions.

**Reality: Sun Energy proposes no emissions limits for hazardous air pollutants even though they admit there will be some emissions of hazardous air pollutants**

Sun Energy’s proposal says they propose emissions limits for NOx (nitrogen oxide), CO (carbon monoxide), VOCs (Volatile Organic Compounds) and Ammonia but they omit hazardous air pollutants which they admit would be emitted.<sup>32</sup>

**Reality: Sun Energy’s Statement of “Potential Annual Emissions” omits any mention of the hazardous air pollutants they acknowledge elsewhere would be emitted**

“Table 2-2 Potential Annual Emissions” completely omits any mention of hazardous air pollutants which they admit are emitted just one page earlier in their proposal.<sup>33</sup>

## **IX. Truck Traffic, Diesel Emissions, and Threats to Public Health**

**Claim: “A total of 280 trucks per day of MSW will be delivered to the site during normal conditions.”<sup>34</sup>**

On page 46 of their proposal to the City, Sun Energy says 280 trucks per day will bring MSW to the facility. On page 69 they say it will be 273 trucks per day.

**Reality: 280 trucks going to the site per day will result in increased traffic and toxic emissions**  
280 trucks going to the site per day, and likely 280 trucks leaving the site each day, will result in traffic and increased diesel emissions.

**Reality: Diesel trucks emit dangerous pollutants and threaten public health**

According to the U.S. EPA, emissions from diesel exhaust can lead to serious health conditions like asthma and allergies, and can worsen heart and lung disease, especially in vulnerable populations such as children and the elderly. Diesel engines emit particulate matter (soot); nitrogen oxides which contribute to the production of ground-level ozone (smog) and acid rain; hydrocarbons; air toxics; and black carbon. These emissions can also damage plants, animals, crops, and water resources. Health, the environment, and the global climate are all impacted by diesel emissions.<sup>35</sup>

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<sup>32</sup> Sun Energy Group, LLC, Proposal, page 51.

<sup>33</sup> Sun Energy Group, LLC, Proposal, pages 51-52.

<sup>34</sup> Sun Energy Group, LLC, Proposal, page 46.

<sup>35</sup> Basic Information, U.S. Environmental Protection Agency, visited 10 June 2011

<<http://www.epa.gov/cleandiesel/basicinfo.htm>>.

## Evaluation of Sun Energy Group's Website Claims: June 2, 2011

**Claim:** Sun Energy's website, [www.sunenergygrp.com](http://www.sunenergygrp.com), claims they can generate enough electricity for 60,000 homes.<sup>36</sup>

**Reality:** Sun Energy offers no proof for this claim, and there is no model anywhere in the world to back up the claim. There is no plant using this technology that generates any significant electricity, if any at all. The City of Sacramento, California sent staff to the Hitachi Metals facility in Utashinai, Japan – the facility that Sun Energy's technology provider Alter NRG uses as a model – and they reported that no energy whatsoever was being sent to the grid.<sup>37</sup>

**Claim:** "Sun Energy is a renewable waste-to-energy company headquartered in New Orleans."<sup>38</sup>

**Reality:** Garbage is not renewable energy and should be reduced. Sun and wind are renewable energy, not garbage.

**Claim:** "This will be done in an enclosed, controlled facility that will be unrecognizable as a waste facility to the public."<sup>39</sup>

**Reality:** Sun Energy's permit application submitted to the State Department of Environmental Protection in 2009 stated that "A stack will be provided to discharge the flue gas to the atmosphere...." and in their equipment list they state that there would be a 200 foot "chimney." Their proposal submitted to the City of New Orleans in November, 2010 also has a "stack" as part of the facility. This stack would not be in an enclosed facility as the stack would emit pollutants into the air, not into an enclosed facility.

**Claim:** "Since gasification occurs in an oxygen starved environment, the waste is gasified versus incineration."<sup>40</sup>

**Reality:** Garbage contains oxygen, so there is oxygen present in the gasification process. In addition, Sun Energy's permit application has many references to the "combustion" of the syngas, which is the incineration stage in the plasma arc gasification process.

**Claim:** "The gasification component of this facility is a closed loop, combustion free process which produces no emissions. The facility will produce low emissions from its power plant component, but those emissions are well below established EPA standards for power plants. In fact, these emissions are comparable to natural gas fired generators. Sun Energy also plans to utilize an air monitoring process to measure any emissions."<sup>41</sup>

**Reality:** Gasification is not closed loop, as syngas created by heating garbage is directly vented to the combustion process. Sun Energy has provided no comprehensive emissions data, yet limited

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<sup>36</sup> Sun Energy Group, LLC, visited 2 June 2011 <<http://www.sunenergygrp.com>>.

<sup>37</sup> Phone conversation between Jim Rinehart, City of Sacramento, CA and Bradley Angel/Greenaction, July 28, 2008

<sup>38</sup> About Us, Sun Energy Group, LLC, visited 2 June 2011 <<http://www.sunenergygrp.com/about.shtml>>.

<sup>39</sup> About Us, Sun Energy Group, LLC.

<sup>40</sup> Technology, Sun Energy Group, LLC, visited 2 June 2011 <<http://www.sunenergygrp.com/process.shtml>>.

<sup>41</sup> FAQs, Sun Energy Group, LLC, visited 2 June 2011 <<http://www.sunenergygrp.com/faq.shtml>>.

data from other plasma arc plants including the Hitachi Metals plant in Utashinai, Japan documents emissions of dioxin and other toxic pollutants.<sup>42</sup>

There is no waste treatment facility anywhere in the U.S. that measures all emissions on an ongoing basis. We are unaware of any plasma arc facility in the world that measures all emissions on an ongoing basis. Usually there is a test burn every year on a day the company knows they are being tested. At best, only a few criteria pollutants are continuously monitored. There would not be continuous emissions monitoring for toxic air contaminants.

**Claim:** “Sun Energy will derive its feedstock from locally generated MSW (Municipal Solid Waste). The technology used by Sun Energy can accept other forms of waste, such as industrial and hazardous waste.”<sup>43</sup>

**Reality:** Sun Energy’s permit application states that “[t]he feedstock will consist of 100% MSW, with added metcoke (100 tons/day) and limestone (35 tons/day).” They also would use natural gas to “supplement the syngas for proper combustion.” Also, the fact that Sun Energy mentions the possibility of industrial and hazardous waste should be a danger signal to the public that even more dangerous wastes could eventually be treated if the facility is built.

**Reality:** Under the Interstate Commerce Clause, Sun Energy would be allowed to import waste from across the nation.

**Claim:** “Sun Energy advocates recycling, and as part of its sorting process, will cull some recyclables from its waste stream. This culling process allows Sun to significantly increase the number of homes participating in recycling efforts. By bringing household trash (MSW) into its facility, Sun Energy can help New Orleans become one of the nation’s highest percentage recycling cities.”<sup>44</sup>

**Reality:** Sun Energy’s proposed recycling program was very modest and incomplete. The permit application submitted in 2009 showed they would recycle only a small fraction of the waste brought to the plant, recycling about 300 tons per day while processing 2500 tons per day. That is a terrible recycling rate, not one of the nation’s highest rates.

If the City commits to send garbage to this proposed plant, New Orleans will never achieve good recycling rates because they will be committed to this facility and the continued generation of large amounts of garbage. The Sun Energy project would therefore undermine any real attempts by the City to develop a strong recycling program. Instead, New Orleans should pursue a comprehensive zero waste program including widespread recycling, reuse and composting.

**Claim:** “The primary by-products of plasma gasification are steam, synthetic gas and a solid recyclable product.”<sup>45</sup>

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<sup>42</sup> Dioxin Measurement Results Report From Echo Valley Utashinai Inc. to Governor of Hokkaido, Publication No. MA-02938-03 (Reference No. MA-02913), Representative Director Yasuji Ozaki, 6 Apr. 2006; Certificate From Shimadzu Techno-Research Inc. to Echo Valley Utashinai Inc., Order No. 125240, Shimadzu Techno-Research Inc., 19 Dec. 2005.

<sup>43</sup> FAQs, Sun Energy Group, LLC.

<sup>44</sup> FAQs, Sun Energy Group, LLC.

<sup>45</sup> FAQs, Sun Energy Group, LLC.

**Reality:** Toxic contaminants will be emitted into the air, and there would be contaminated wastewater.

**Claim:** There would be no City financial support for a plasma arc facility.<sup>46</sup>

**Reality:** The 20 year City contract Sun Energy is asking for would be direct financial support.

## **Alter NRG, Westinghouse Plasma Technology and Claims:**

### **Even the Plasma Technology’s Manufacturer Warns Not to Rely on Their Information**

Claims that the Alter NRG/Westinghouse Plasma technology is proven are followed by a disclaimer saying these are only “forward-looking statements” and that actual results might differ from what is claimed:

Alter NRG expressly disclaims any liability for errors or omissions in the material contained in this website...Your use of this website is at your own risk...the projections, estimates and beliefs contained in such forward-looking information necessarily involve known and unknown risks, uncertainties and other factors which may cause Alter Nrg's actual results, performance or achievements in future periods to differ materially from any estimates or projections of future results, performance or achievements expressed or implied by such forward-looking information.<sup>47</sup>

Should the protection of the health and environment of New Orleans rely on a company and technology that disclaims responsibility for their information and performance of their technology?

### **Are the Hitachi Metals Facilities in Japan the Model of a “Proven Technology” and Are the Claims about This Facility True?**

Alter NRG boasts about their Westinghouse Plasma technology used at the Hitachi Metals plants in Utashinai and Yoshi, Japan and claims it is a proven technology. The reality is that these Japanese plants are a fraction of the size of the proposed Sun Energy LGF facility, use a different waste stream than is proposed in New Orleans, and generate little or no electricity to the grid.

### **Small Size of “Models” and Different Waste Streams:**

When officials from the City of Sacramento, California traveled to the Utashinai plant, they were informed by Hitachi Metals that only 50% MSW was being treated at that plant.<sup>48</sup> According to Mr. Rinehart, he was told on his tour of the plant that the facility has two 85 tons per day lines, one for municipal solid waste and one for automobile shredder waste.

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<sup>46</sup> FAQs, Sun Energy Group, LLC.

<sup>47</sup> Legal, Alter NRG, visited 1 June 2011 <<http://alternrg.com/legal/>>.

<sup>48</sup> Phone conversation between Jim Rinehart, City of Sacramento, CA and Bradley Angel/Greenaction, July 28, 2008

## Commercially Proven?

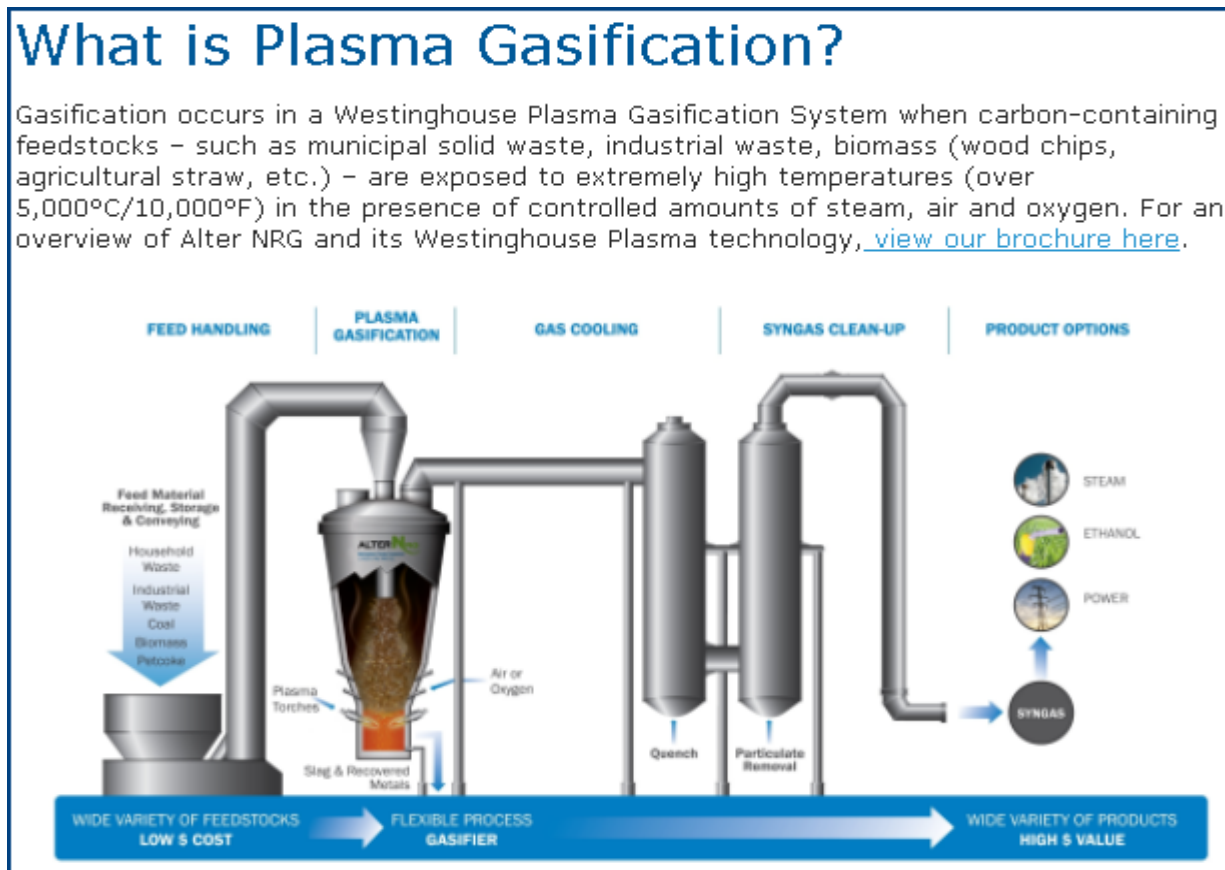
In 2008, The City Council of Sacramento, California reversed their support and rejected a plasma arc proposal that would have used the Alter NRG/Westinghouse Plasma technology after visiting the Utashinai plant and reviewing all available data.

The City and County of Honolulu also rejected plasma arc and critiqued the Utashinai, Japan facility. In 2004, they reviewed information about the Hitachi Metals plant in Utashinai and plasma arc, ultimately rejecting a proposed plasma arc facility to process garbage. Their research found:

Plasma arc technology applied to solid waste is still in a research and development stage, raising significant questions of reliability. The current state of the technology poses potential high risks of interrupted service operations due to technical complications. The Eco Valley facility in Utashinai is the largest and has a design capacity of 166 tons per day. The facility is presently running at half capacity and has not produced power for sale on a consistent basis.<sup>49</sup>

## Nice Pictures, But Where's the Stack?

Westinghouse Plasma's website contains the following description and diagram:<sup>50</sup>



<sup>49</sup> City to Brief Council on Plasma Arc Recommendations for Landfill, City and County of Honolulu, 30 Mar. 2004, visited 13 June 2011 <<http://www1.honolulu.gov/refs/csd/publiccom/honnews04/plasmaarcrecommendations.htm>>.

<sup>50</sup> What is Plasma Gasification, Westinghouse Plasma, visited 13 June 2011 <<http://www.westinghouse-plasma.com/technology/what-is-plasma-gasification>>.

Whether intentional or negligent, the diagram above provided by Westinghouse Plasma omits the combustion equipment (a boiler or turbine) and omits any picture or mention of the stack that will emit the pollutants after the syngas is burned. This omission is very serious as the diagram gives the impression there is no stack when in fact there would be a stack.

The photo of the Hitachi Metals plasma arc plant in Utashinai, Japan curiously omits the stack associated with the facility, and toxic pollutants are emitted from that stack.

Despite the photo of part of the Utashinai facility that does not show any stack, Sacramento City official Jim Rinehart confirmed upon his return from a tour of the plant that there is a stack.<sup>51</sup>



Photo of Hitachi, Metals plasma arc plant in Utashinai, Japan

The next photo is of the Hitachi Metals plasma arc plant in Yoshi, Japan as shown on the front page of the Hitachi Metals publication “Hitachi Metals Reports, No. E-321.”

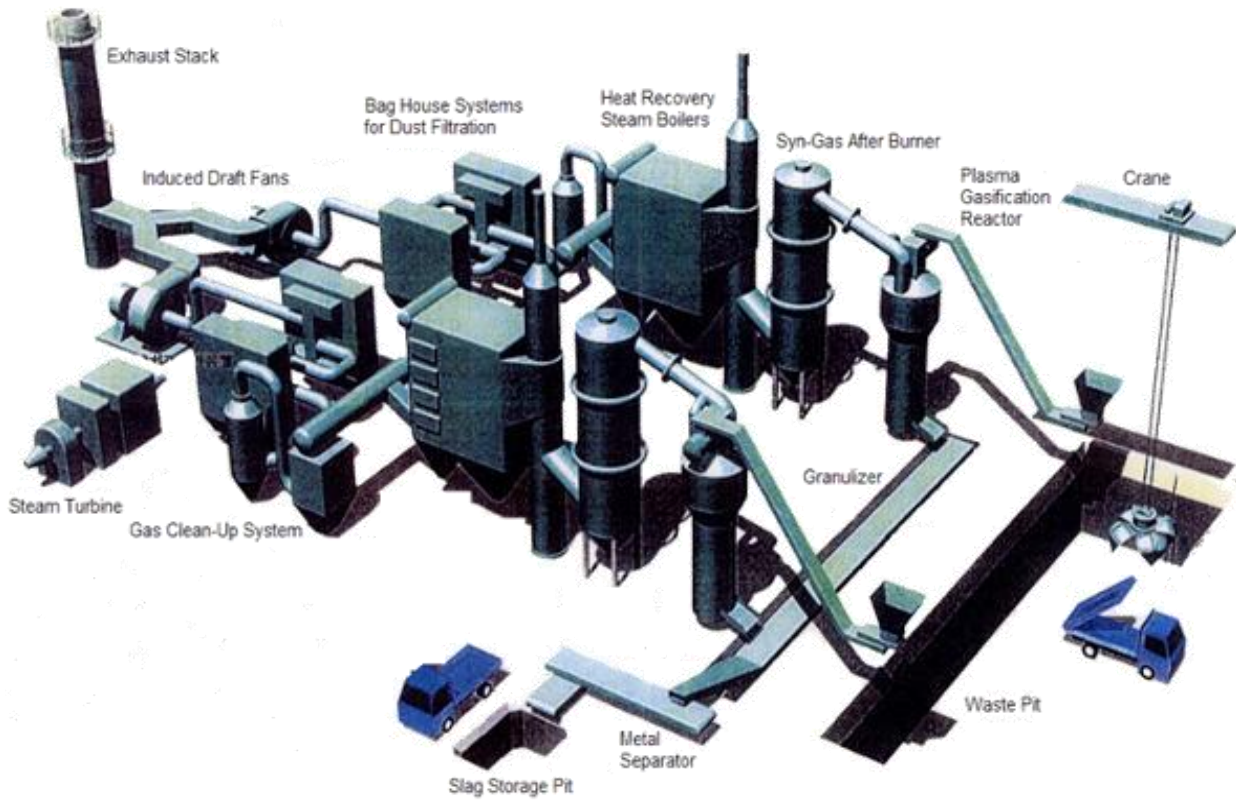


<sup>51</sup> Jim Rinehart, Phone conversation with Bradley, Angel, Greenaction, July 28, 2009.

On the inside of this same Hitachi Metals publication is a photo, below, of a similar (or the same) Japanese facility that clearly shows a very large stack.



The diagram below, also from Westinghouse Plasma's website, is of the Hitachi Metals plasma arc plant in Utashinai, Japan and clearly shows a large stack.<sup>52</sup>



<sup>52</sup> Japan, Westinghouse Plasma, visited 13 June 2011 <[www.westinghouse-plasma.com/projects/japan](http://www.westinghouse-plasma.com/projects/japan)>.

## Westinghouse Plasma's Support of Green Power System's Proposal

One of the projects supposedly under development that would use Westinghouse Plasma technology is the Green Power Systems project in Tallahassee, Florida. Westinghouse Plasma says on their website that: "Renewable Fuels of Tallahassee LLC, a subsidiary of Jacksonville-based Green Power Systems LLC will install a system in Tallahassee to convert municipal solid waste into clean energy, including electricity."<sup>53</sup>

The first problem with this claim is that Westinghouse Plasma states that this company "will install" the system. However, the company has not yet received permits and to our knowledge has not applied for permits.

A bigger problem is that Westinghouse Plasma promotes the Green Power Systems proposal in Florida despite the fact that Green Power made boldly false claims on their website, claiming there would be no emissions and therefore no stack would be needed. In 2008, Green Power Systems' website claimed "[T]he reactor has no need for a stack as there are no emissions from the gasification process."

Greenaction challenged the claim that there would be no stack or emissions after a January 22, 2008 phone conversation with Ingo Krieg, President of Green Power Systems, in which he admitted there would be a 90 or 100 foot stack and that there would be emissions. After being challenged by Greenaction, on February 10, 2008, Ingo Krieg of Green Power Systems finally admitted in an email to Greenaction that their claim of no stack could be misleading.<sup>54</sup>

### The Poor Track Record of Plasma Arc Facilities in the U.S.:

There has never been a commercial facility in the U.S. using plasma arc technology for municipal solid waste. But there have been two commercial plasma arc facilities processing other wastes, and both were disasters and shut down after major operating and financial problems.

- **Allied Technology Group, Richland, Washington: Closed and Failed**

The Allied Technology Group facility in Richland, Washington shut in 2001 after chronic operational problems, triggering severe financial problems, stockpiles of untreated mixed radioactive and hazardous waste and laid-off workers.<sup>55</sup>

- **Hawaii Medical Vitrification, Oahu, Hawaii: Breakdowns, Violations & Closure**

The Hawaii Medical Vitrification facility run by Asian Pacific Environmental Technologies near Honolulu closed in 2007<sup>56</sup> after years of problems including damage to the refractory in the kiln that forced the plant to close for months and resulted in serious violations including illegal stockpiling of medical wastes.<sup>57</sup>

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<sup>53</sup> Projects Under Development, Westinghouse Plasma, visited 13 June 2011 <<http://www.westinghouse-plasma.com/projects/projects-under-development>>.

<sup>54</sup> Ingo Krieg, Green Power Systems, Email to Bradley Angel, Greenaction, 10 Feb. 2008.

<sup>55</sup> Greenaction & GAIA, Incinerators in Disguise, Case Studies of Gasification, Pyrolysis and Plasma in Europe, Asia and the United States, 2006, <http://greenaction.org/incinerators/documents/IncineratorsInDisguiseReportJune2006.pdf>

<sup>56</sup> PEM Facilities, InEnTec, visited 13 June 2011 <<http://inentec.com/pem-facilities.html>>.

<sup>57</sup> Greenaction & GAIA, Incinerators in Disguise Case Studies report.



## **Risks to Public Safety and Health Consequences for New Orleans Residents:**

Dioxin is the common name for 75 toxic chemicals that are unwanted by-products of manufacturing and combustion processes when chlorine and carbon-containing materials are combined. Garbage and medical incinerators were identified as the largest sources of dioxins in the United States Environmental Protection Agency's reassessment report on dioxin in 1994/2004. According to the EPA, dioxin travels long distances in the atmosphere and is found on plants, in water, soil, grazing animals and humans. Dioxin particles are stored in fatty tissue and will accumulate to create "buildup" when low-level exposure is continual.

In 1997, the International Agency for Research on Cancer concluded that dioxin is a human carcinogen. Non-Hodgkin's lymphoma and cancers of the liver, lung, stomach, soft and connective tissue have been associated with dioxin. Even at very low levels of exposure, at levels of parts per trillion, dioxin can cause immune system damage, hormone disruption, and reproductive and development effects.

There is no safe level of additional exposure to dioxins. This is because the average daily dioxin intake is already 200 times higher for Americans than what the EPA defines as a safe dose for adults.<sup>58</sup>

Those most at risk of receiving the highest concentrations are babies.<sup>59</sup> Studies also show elevated levels of dioxin in the blood of people living near municipal solid waste incinerators when compared to the general population.<sup>60</sup>

## **Environmental Racism Against Low-Income Communities of Color:**

Continuing the long history of environmental racism where low-income, communities of color are disproportionately targeted for polluting facilities (and particularly waste treatment and disposal facilities), Sun Energy is proposing to locate their plasma arc facility at 3900 Jourdan Road, New Orleans, Louisiana, 70126.

All the neighborhoods closest to the plant are overwhelmingly low-income people of color neighborhoods, heavily African-American in particular. Two communities near the proposed site are Pines Village and Desire Area. Residents of these neighborhoods already suffer from pollution and the legacy of Hurricane Katrina's massive flooding. Pines Village is a subdistrict of the New Orleans East area. Pines Village boundaries as defined by the City Planning Commission are: Downman Road and Interstate 10 to the east, Chef Menteur Highway to the south, Lake Pontchartrain and Morrison Road to the north, and the Industrial Canal to the west.

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<sup>58</sup> Arnold Schecter, "America's Choice Children's Health or Corporate Profit The American People's Dioxin Report Technical Support Document," Center for Health, Environment and Justice Falls Church, November 1999; U.S. Environmental Protection Agency (USEPA) EPA (1994a) Health Assessment Document for 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) and Related Compounds, Volume III of III, USEPA, Office of Research and Development, EPA/600/BP-92/001c, External Review Draft, Washington, D.C.

<sup>59</sup> Neil Tangri, "Waste Incineration: A Dying Technology," 2003, page 13.

<sup>60</sup> "Study reignites French incinerator health row," *Ends Europe Daily*, visited 8 Feb. 2008 <<http://www.endseuropedaily.com/articles/index.cfm?action=article&ref=22174&searchtext=incinerator%2Bcancer&searchtype=All>>; P. Elliott and others, "Cancer incidence near municipal solid waste incinerators in Great Britain," *BRITISH JOURNAL OF CANCER* Vol. 73 (1996), pgs. 702-710; Leem et al., 2006. Risk Factors Affecting Blood PCDDs and PCDFs in Residents Living near an Industrial Incinerator in Korea. *Arch. Environ. Contam. Toxicol.* 51:478-484.

Pines Village is approximately 95.4% Black or African American.<sup>61</sup> The average household income for households reporting less than \$200,000 was \$39,841.<sup>62</sup> 18.3% were people living in poverty.<sup>63</sup>

Pines Village contains one local park, several churches, and a notable amount of industrial/commercial developments. The area has many Department of Housing and Urban Development (HUD) Section 8 complexes, with residents being economically challenged. The abandonment of large land areas led to the development of 27 illegal dump sites.

The neighborhood was significantly impacted by Hurricane Katrina in 2005. Over 90% of residential properties and nearly all commercial properties in the neighborhood received flood damage, wind damage, or both. Nearly 90 percent of the homes in the area were damaged and needed to be rebuilt. The challenge of dealing with the debris and destruction from Katrina throughout New Orleans complicated redevelopment efforts. The use of the Chef Menteur landfill after Katrina added to the environmental challenges of the New Orleans East community (including the nearby Vietnamese community). The landfill had been closed for several years prior to Katrina because it was cited for the lack of a lining for the landfill. After Katrina, the city re-opened the landfill to receive storm debris. Because of the lack of a proper lining, material from the landfill seeped into the Bayou Sauvage National Wildlife Refuge area. While the community won the battle to close the landfill, the material still remains in the landfill and contributes to environmental concerns for the Bayou Sauvage.

The Desire Area is a subdistrict of the Bywater District Area. Desire Area borders the Industrial Canal on the east. Desire Area was 94.1% Black.<sup>64</sup> The average household income for households reporting less than \$200,000 was \$24,633.<sup>65</sup> In Desire Area, 35.7% were people living in poverty.<sup>66</sup>

As a recipient of federal funding, the City of New Orleans must not participate in a polluting facility project that would have a discriminatory and disproportionate impact on low-income and people of color, as this would violate Title VI of the United States Civil Rights Act of 1964.

## **Zero Waste: A Healthy and Sustainable Solution for Our Solid Waste Problem**

Despite several existing models in U.S. cities that prove otherwise, disposal of valuable natural resources in incinerators and landfills is all too often considered inevitable. Alternatively, we can choose to invest in community-based “Zero Waste” solutions such as waste-reduction, reuse, recycling, and composting as a vehicle for environmental, job and economic renewal.

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<sup>61</sup> U.S. Census Bureau. 2010 Redistricting Data SF (PL 94-171), Tract 17.20.

<sup>62</sup> U.S. Census Bureau. Census 2000 Sample Characteristics (SF3), found at <<http://www.gnocdc.org/orleans/9/50/income.html>>.

<sup>63</sup> U.S. Census Bureau. Census 2000 Sample Characteristics (SF3), found at <<http://www.gnocdc.org/orleans/9/50/income.html>>.

<sup>64</sup> U.S. Census Bureau. Census 2000 Full-count Characteristics (SF1), found at <<http://www.gnocdc.org/orleans/7/15/people.html>>.

<sup>65</sup> U.S. Census Bureau. Census 2000 Sample Characteristics (SF3), found at <<http://www.gnocdc.org/orleans/7/15/income.html>>.

<sup>66</sup> U.S. Census Bureau. Census 2000 Sample Characteristics (SF3), found at <<http://www.gnocdc.org/orleans/7/15/income.html>>.

Zero Waste means investing in the workforce, infrastructure and strategies needed to reduce what we trash in incinerators and landfills to zero. It means stopping even another dime of taxpayer money from subsidizing waste projects that contaminate environments and the people who live there. It means investing public money in innovative waste reduction, reuse and recycling programs, and requiring that products are made and handled in ways that are healthy for people and the planet.

Cities around the world including Buenos Aires, Canberra, Oakland, Nova Scotia, Seattle and San Francisco have passed groundbreaking Zero Waste measures. These cities are working towards Zero Waste by building state-of-art recycling and composting parks, implementing innovative collection systems, requiring products to be made in ways that are safe, and creating locally-based green-collar jobs. These cities have developed plans to invest in sound economic development and jobs that will benefit their residents, rather than pouring money into harmful waste disposal projects. They have specific and achievable plans to dramatically reduce waste disposal levels.

Leading the way, San Francisco and Oakland are on track to reuse 75% of discarded materials by the year 2010, and 100% by the year 2020. Already, 63% of San Francisco's discarded materials are reused, recycled, or composted, and the city has passed groundbreaking laws to shift the unjust and unsustainable ways in which products are made. Stopping polluting incinerators in communities and achieving critical greenhouse gas emission reductions depends on Zero Waste gaining increased support from decision-makers at the local, regional and federal level.

**For more information on plasma arc and gasification, and safe solutions, contact:**

**Greenaction for Health and Environmental Justice [www.greenaction.org](http://www.greenaction.org) (415) 284-5600  
703 Market St, Suite 501, San Francisco, CA 94103**

**Global Alliance for Incinerator Alternatives [www.no-burn.org](http://www.no-burn.org) (510) 883-9490 x 102**