



WAUKESHA COUNTY ENVIRONMENTAL ACTION LEAGUE

Protecting Waukesha County's natural resources since 1978

The FACTS ON GASIFICATION

WEAL composed this document upon learning [Global Environmental Infrastructure Technology Solutions \(GEITS\)](#) had been in discussions with Village of Mukwonago to site a gasification staged incinerator at a new industrial park on STH 83 south of I43. (See Village of Mukwonago section below)

The City of Adams, Wisconsin had already signed a multifaceted agreement with GEITS that included gasification. Adams ultimately paid GEITS **\$301,050** to terminate the agreement. (See Adams section below)

What is Gasification?

Traditional incinerators burn waste directly. Gasification, plasma arc and pyrolysis utilize a two-stage process of heating waste materials at high temperatures in a separate chamber. The heating process produces a synthetic gas (syngas) which is combusted in a secondary process. This two-stage process is also referred to as staged incineration. The combustion of syngas in the second stage creates ultra-fine polluting particulates that are emitted into the air. Depending on the type of gasification, the resulting contaminated ash, char or slag will need to be landfilled.

Although the EPA defines the combustion stage of gasification as incineration, proponents of gasification object to this term because the public associates incineration with burning garbage and air emissions. In an attempt to disguise incinerators, and appear more appealing, proponents use terms like waste-to-energy; energy-from-waste, conversion technologies, "renewable energy," and even the "**ultimate in recycling.**"

The U.S. Environmental Agency's legal definition states: Municipal waste combustor, MWC, or municipal waste combustor unit: (1) Means any setting or equipment that combusts solid, liquid, or **gasified [municipal solid waste]** including, but not limited to, field-erected incinerators (with or without heat recovery), modular incinerators (starved-air or excess-air), boilers (i.e., steam-generating units), furnaces (whether suspension-fired, grate-fired, mass-fired, air curtain incinerators, or fluidized bed-fired), and **pyrolysis/combustion units.** (1)

U.S. EPA 40.CFR 260 "*Incinerator* means any enclosed device that:Meets the definition of infrared *incinerator* or **plasma arc incinerator**.... (2)

Is Gasification a New Technology?

Gasification is **not** a new technology. Over the past several decades attempts to gasify municipal solid waste (MSW) have repeatedly failed.

The only thing “**new**” is the potential to take advantage of grants, state and federal subsidies, low interest loans and renewable energy credits.

Although a multitude of gasification plans have been proposed in the U.S. in recent years, with a few going as far as receiving local and/or state permits --- **there are no commercial scale gasification incinerators in the United States that use municipal solid waste (MSW) as a feedstock.**

Failed Gasification Projects Planned for Wisconsin

In 2010, without an opportunity for public comment, a “last minute” amendment was added to SB 273 giving renewable energy status to gasification. The bill passed. (3) Groups across the state, including WEAL, appealed to Gov. Doyle to veto the bill without success. 2009 Wisconsin Act 406 was signed on 5/19/2010. (4)

Two proposed gasification projects were immediate beneficiaries of WI Act 406, Alliance Federated Energy (AFE) – Plasma Arc Gasification and The Oneida Seven Generations Corp. (OSGC) – Pyrolysis.

Alliance Federated Energy Milwaukee County

Alliance Federated Energy was proposing “Project Apollo” a 1200 tpd (tons per day), \$225 million plasma arc gasification staged incinerator planned for Milwaukee County. On 2/02/10, months before a gasification became “renewable energy” in WI, the *Milwaukee Journal Sentinel* quoted Gov. Doyle as saying in a statement: “We are pleased that AFE has selected Wisconsin for their first **renewable energy** project.” (5)

WEAL attended an AFE presentation at Carroll University in Waukesha entitled “**Plasma Gasification Technology Ultimate Recycling for the 21st Century**” and another presentation at UW in Madison. During both presentations AFE stated there would be no emissions, and gasifying waste was the “**ultimate in recycling.**”

During both presentations AFE produced a map showing “Current Projects” around the world. The projects included Project Magellan (Jamaica), Project Heartland (Illinois), Project Coral Bay (Mauritius), Project Good Hope (Johannesburg, South Africa), Project North Sea (United Kingdom) and others. Frequently changing project information was also available on the AFE website.

Not one of the projects, including Milwaukee’s Project Apollo, was ever constructed. For a while the AFE website continued to display a “Current Projects” tab. That tab was later replaced with a box asking viewers of the site to check back for the latest project information. (6)

Update: No projects were ever developed and the AFE website is no longer active.

Oneida Seven Generations Corp. (OSGC) Pyrolysis plan for Green Bay

WEAL submitted public comments opposing the OSGC pyrolysis staged incinerator in Green Bay during every phase of the permitting process.

OSGC stated there would be no emission stacks because the process would not generate emissions. The DNR permit application revealed 10 emission stacks and **3 were 60 feet high.** (7)

The DNR permit also identified **cadmium; arsenic, chromium, Dixon/furans, fluoride, lead, mercury, selenium, copper, nickel, iron, tin, antimony, zinc, phosphorus, siloxanes, potassium, hydrogen and sulfide** as probable emissions. (Wisconsin Court of Appeals Dist. III - 7/15/2013 - Appeal # 2013AP000591- page 32)

When the Green Bay City Council learned OSGC misrepresented critical details regarding emissions and emission release stacks, the City Council revoked the permit. Green Bay's decision was upheld by Brown County Circuit Court.

The OSGC pyrolysis staged incinerator project received millions in loans and grants including funding from the Wisconsin Economic Development Corporation.

In December 2013, the Oneida General Tribal Council voted to dissolve OSGC. An article in the Oneida newspaper states: "According to Chief Financial Officer Larry Barton a minimal impact of **\$7.8 million will be felt by the tribe immediately to pay down eight loan agreements.** The agreements allow the lenders to immediately call for the debts to be paid. OSGC's **five other loan agreements total \$17.6 million.**" (8)

Although the OSGC was dissolved, the legal and financial problems associated with the pyrolysis staged incinerator continued and a former business partner of OSGC filed a lawsuit in Chicago seeking **nearly \$400 million in damages due to a breach in contract.** (9)

The Oneida Tribe and the City of Green Bay will also have incurred additional legal expenses because an appeal of a recent Court of Appeals decision was heard at the State Supreme Court. (10)

Update: Although there was one dissenting vote, the Wisconsin Supreme Court ruled in favor of OSGC and stated: "None of the statements on which the City relies can be reasonably interpreted as a promise that the facility would have no stacks or vents. Again, **no reasonable person could believe that a gas-burning engine would not produce exhaust, which must be expelled from the facility.**"

In February, 2018 Green Bay agreed to a settlement with OSGC for **2.5 million dollars** with neither party admitting wrongdoing.

Note: Clearly, those who understand the process know there will be emissions but that is not what you hear from companies wanting to site gasification staged incinerators. WEAL has been to several presentations and heard gasification proponents state emphatically to the public “there are no emissions.” Additionally, the artist’s rendition of the OSGC facility given to the City of Green Bay and the public did not have any emission stacks.

GEITS Gasification proposal for the City of Adams (Adams County)

The City of Adams (Adams County) approved a multifaceted agreement with GEITS that included a gasification staged incinerator. After signing the agreement and residents raising concerns, the City of Adams hired an attorney to attempt to alter the agreement. (11)

Initially, government leaders were excited about the agreement with GEITS and the Mayor began working for GEITS. The City Administrator stated on WI Public Radio: “The city of Adams is going to be center stage to the Midwest if not the nation for this **new innovative technology**. This is their introduction into North America, and I've got to say, I think **this Australian invasion into America I think is bigger than the Beatles.**” (12)

When the terms of the Adams/GEITS agreement became available, a number of residents began voicing concerns and asking questions. The residents asked an attorney to review the agreement. (13)

Details surrounding the gasification incinerator plan were vague. A question was asked during a 2/05/14 public meeting in reference to **an open letter written by the GEITS Executive VP** that appeared in a local newspaper and stated: “Our Bio-Energy plant design, while state-of-the-art, in [*sic*] not without precedent as **there are 87 other facilities in the country doing the same thing.**” (14)

Note: The 87 facilities represented mass burn and refuse derived incinerators that were built decades ago. Not one of the 87 facilities utilized any form of gasification.

Question: **“Where in the United States is there a gasification facility similar to the waste to energy facility & two years of feedstock before it’s built?”**

Answer: **“Dr. Nellore of GEITS stated that you can google that. They will be different with each manufacturer but technology is the same, just the same as a car has with a different manufacturer. Some companies are different while some the same and some will have four years of feedstock.”** Quote from 2/05/14, Adams City Council Committee Report. (15)

Repeat of Answer: Dr. Nellore, GEITS President and CEO, stated --- **“you can google that”**

The Mayor of Adams stopped working for GEITS and the City Administrator resigned, effective 6/03/2014.

A 5/07/14 City Council Notice of Closed Session mentions **potential litigation with GEITS.** (16)

On 6/16/2014 a Settlement Agreement which terminated all agreements and contracts between the City of Adams and GEITS was unanimously approved by the Adams City Council. The Settlement Agreement included the City of Adams paying a termination fee of **\$301,050** to GEITS and contained a number of stipulations, including a confidentiality clause. (The Full Settlement Agreement can be viewed at www.weal.org.)

Update: The GEITS website was taken down after the agreement and the company appears to no longer exist.

GEITS Approached the Village of Mukwonago (Waukesha County)

A presentation was given by GEITS during a 4/08/14 Village Planning Commission. (17) A week later the Village Board minutes state: **“the Plan Commission was in favor of allowing GEITS to proceed with further approvals of a proposed gasification waste-to-energy plant.....”** (18)

A 4/28/14 article in the Mukwonago Chief states: "As the village planner, the proposal presents a **tremendous opportunity** to have a **technologically advanced industry** located within the village, which is **unique to the United States**, providing a sustainable strategy for green growth. The use will benefit local and regional energy users and add tremendous value to the local tax base." And ".....preliminary **research done by the company** indicates that it is a clean industry and does not have odor issues." (19)

Proposed Gasification Projects and Failures in the United States and Across the Globe

Wilton, Connecticut – Startech Environmental - An unsuccessful plasma converter systems business since 1993 and years later filed for bankruptcy. Assets were sold at a **federal-approved bankruptcy auction in 2013**. (20)

Romoland, California - In **2010** a pyrolysis pilot project was operating without a permit. The South Coast Air Quality Management District fined the pilot project and it was decommissioned. (21)

Taunton MA – Interstate Waste Technologies (IWT) - Taunton reportedly spent **\$5 million** on land, lawyers and consultants attempting to develop an **\$800 million fuel cell gasification incinerator** only to learn the project would not be eligible for the state's Renewable Energy Portfolio Standards Class I program. (22) In **2014** "The state's Department of Environmental Protection/Executive Office of Energy and Environmental Affairs rejected IWT's bid to produce electricity as a by-product of trash gasification, on the basis that **it violated a moratorium on incineration of municipal solid waste.**" (23)

Washington State - Green Power Inc. 2014 – Green Power claimed the company had developed a new technology that would turn household trash into diesel fuel. Ultimately, the CEO was taken into federal custody. "The indictment in December alleges that the CEO received **millions of dollars in deposits from investors to build and operate plants in Slovenia, India and Canada**. Instead, the indictment alleges, **he spent that money using \$1 million for a home in Kennewick and \$65,000 for furnishings and other personal expenses.**" (24)

St. Lucie, Florida – Geoplasma 2009 - “Plans to pioneer plasma gasification technology through a trash-zapping facility at the county landfill are dead, said the county commissioner who spearheaded the project five years ago.” (25)

Japan - Hitachi Metals – The Alter NRG EcoValley gasification incinerator in Utashinai, Japan was often referred to as “proof” a gasification incinerator was operating using MSW. In 2009 a delegation from Sacramento, CA traveled to Japan and concluded the facility would not meet California renewable energy standards, the company proposing the project would lose \$70 million if a gasification incinerator was built in Sacramento and a positive cash flow would not exist until the 11th year of operation. (26) Additionally, this gasification incinerator produced little or no energy back to the grid; had operational malfunctions and emitted excessive amounts of particulates. (27) (28)

According to the Alter NRG website the official reason for closing the nearly one-decade old gasification staged incinerator in 2013 was: **“the plant was closed due to lack of feedstock (loss of long term feed contracts).” (29)**

Australia – Brightstar a MSW gasification staged Incinerator located in Wollongong, Australia began operating in 2001 and was shutdown in 2004 due to financial and technical problems. Investors reportedly lost \$134 million. (27) (28)

Germany -- Thermoselect – MSW gasification staged Incinerator in Karlsruhe, Germany operated from 1998-2004. Investors reportedly lost \$500 million. (27) (28)

Scotland -- Scotgen’s Dumfries gasification staged incinerator began operating in 2009. The feedstock was MSW and Hazardous Waste. The incinerator had numerous operational problems and emission limit breaches.

“Before the plant was shut down in April 2011, it suffered some 200 breaches of emissions limits, two of which were because of Dioxins.” (30)

After a fire at the gasification incinerator the Scottish Environmental Protection Agency (SEPA) took the following action: **“A revocation notice was issued by SEPA to the operators of the Dargavel plant, Scotgen (Dumfries) Limited, on Friday (August 23) after the facility “consistently failed to meet any reasonable expectation of environmental performance.”**

“SEPA also said the predicted level of energy recovery at the plant of approximately 3% was “particularly disappointing and unsatisfactory.”

“As well as revoking the permit, the notice requires that certain steps are taken to avoid pollution and to return the site to a ‘satisfactory state’. This includes a requirement for an estimated 800 tonnes of waste left at the site after the fire to be removed.” (31)

Ottawa, Canada – Plasco Energy Group – A \$27-million gasification demonstration project began operating in 2008. The project was repeatedly down for operational problems and the project was often called “the Plasco Fiasco.”

Although the Plasco project had numerous malfunctions, the city of Ottawa approved a 400 tpd (tons per day), \$125- million full scale gasification facility. Plasco raised more than \$300-million over the years but was not able to meet several Ottawa imposed financing deadlines. In 2015 Plasco filed for creditor protection. (32)

Numerous investors were hurt when Plasco filed for creditor protection, but none more than the Town of Blind River with a population of 3200 in Ontario. Blind River had to renegotiate a loan, and will be paying \$1.1 million a year for the next 22 years, with an additional lump sum payment of \$22.5 million due in 2037. The town has a yearly revenue of approximately \$8.8 million. (33)

Gasification Summary

As demonstrated within this document, **gasification is not a new technology**. Gasification is a staged incineration process that heats waste materials at high temperatures in the first stage and the resulting gasses are combusted in the second stage. Gasification is actually a **waste-of-energy** since recycling and composting the same discarded materials can save three to five times more energy. The few full-scale gasification incinerators that were operational for any length of time (outside the U.S.) couldn't meet projections for energy production and were proven to be environmental and economic disasters.

A number of failed gasification and pyrolysis staged incinerators raised millions more than their projects needed but still ended up filing for bankruptcy.

Gasification staged incinerators create air emissions, are extremely expensive and are energy inefficient. They destroy resources that should be reused, recycled or composted and create by-products (ash, char or slag) that will have to be landfilled.

Many cities are pursuing plans for **Zero Waste** since this approach to reducing waste will increase recycling, save energy, reduce costs and create jobs. The City of San Francisco is achieving an 80% recycling rate by following a Zero Waste plan. (34) (35)

About Waukesha Environmental Action League (WEAL)

WEAL is an all-volunteer, nonprofit environmental advocacy group established in 1978. WEAL works on a number of issues, including environmentally beneficial methods to reduce waste.

WEAL has supported numerous initiatives to reduce waste through expanded recycling, composting, extended producer responsibility (EPR) and Pay-As-You-Throw (PAYT) residential trash collection. WEAL is also an advocate for Zero Waste.

WEAL adopted a position opposing incineration in 1990. In 2007 WEAL joined with the Global Alliance for Incinerator Alternatives (GAIA) and hundreds of national, state and local environmental groups opposing incentives for all types of incinerators, including gasification, pyrolysis and plasma arc.

(Bold Type in Text – WEAL’s Emphasis)

References:

- (1) 40 CFR 60.51a. <http://www.gpo.gov/fdsys/pkg/CFR-2012-title40-vol7/xml/CFR-2012-title40-vol7-part60.xml#seqnum60.51a> (paste link in browser)
- (2) U.S. EPA Electronic Code of Federal Regulations as of 5/01/2014 - <http://www.ecfr.gov/cgi-bin/text-idx?node=40:27.0.1.1.1.2.1.1&rgn=div8>
- (3) “Last-Minute Changes Made to State Energy’s Goals” – 5/26/201 – Shepherd Express - <http://expressmilwaukee.com/article-11039-last-minute-changes-made-to-the-staterss-clean-energy-goals.html>
- (4) 2009 Wisconsin Act 406 - <https://docs.legis.wisconsin.gov/2009/related/acts/406.pdf>
- (5) “Project Would Turn Milwaukee Trash into Energy” - 2/02/2010 – Milwaukee Journal Sentinel - <http://www.jsonline.com/business/83410837.html>
- (6) Alliance Federated Energy (AFE) website: <http://www.afeservices.com/>
- (7) “Waste-to-energy facility’s DNR permit calls for 60 ft. exhaust stacks, violating city code” 4/21/2012 – WATQ - <http://wtaq.com/news/articles/2012/apr/13/waste-to-energy-facilitys-dnr-permit-calls-for-60-ft-exhaust-stacks-violating-city-code/>
- (8) “GTC Dissolves Oneida Seven Generations Corporation” – Kalihwisaks (Oneida Newspaper) <http://www.oneidanation.org/newspaper/page.aspx?id=39487>
- (9) Green Bay – “Oneida Tribe targeted in \$400 million suit over failed energy deal” – 3/14/2014 – BizTimes.com - <http://www.biztimes.com/article/20140314/ENEWSLETTERS03/140319866&source=RSS>
- (10) “Oneida Plant Dispute Headed to Supreme Court” – 4/06/2014 – Green Bay Press Gazette <http://www.greenbaypressgazette.com/article/20140405/GPG0101/304050305/Oneida-plant-dispute-headed-state-Supreme-Court>
- (11) “Plans for a gasification incinerator surface in Adams, WI” – www.weal.org
- (12) “City of Adams Rolls Out Red Carpet for Green Energy Company” – 5/16/2013 – Wisconsin Public Radio - <http://www.wpr.org/city-adams-rolls-out-red-carpet-green-energy-company>
- (13) Analysis of the Adams/GEITS Agreement <http://www.wisconsinrapidstribune.com/assets/pdf/U0217800120.pdf> (paste link in browser)
- (14) “GEITS: We’re working together with city of Adams to solve problems” – 1/28/2014 - Wisconsin Rapids Tribune <http://www.wisconsinrapidstribune.com/article/20140128/WRT06/301280293/GEITS-We-re-working-together-city-Adams-solve-problems-column->
- (15) Adams City Council Minutes – **2/05/14** – <http://www.cityofadams-wi.gov/uploaded/2014,%2002-05%20Zoning%20Change-PUD%20Presentation-ComCtr.pdf>
- (16) Adams City Council Notice of Closed Session – 5/07/14 <http://www.cityofadams-wi.gov/uploaded/2014,%2005-07%20CLOSED%20SESSION.pdf>
- (17) Mukwonago Village Plan Commission presentation - 4/08/2014 <http://www.villageofmukwonago.com/20140408%20Plan%20Commission%20Minutes.pdf>
- (18) Mukwonago Village Board meeting – 4/15/2014 - <http://www.villageofmukwonago.com/20140415%20Village%20Board%20Minutes.pdf>
- (19) “Global company has local plan for Mukwonago” 4/28/2014 – Mukwonago Chief <http://www.livinglakecountry.com/mukwonagochief/news/global-company-geits-sets-sights-on-mukwonago-b99257644z1-257058561.html>
- (20) “Wilton’s environmental darling Startech on the block” – 12/31/2012 - Ctpost.com

<http://www.ctpost.com/news/article/Wilton-s-environmental-darling-Startech-on-the-4158575.php>

(21) “ Analysis of the Oneida Seven Generations Corporation Proposal for a Pyrolysis Gasification at the Oneida Nation in Wisconsin” – 3/07/2011 - <http://greenaction.org/analysis-evaluation-of-the-oneida-seven-generations-corporation-proposal-for-a-pyrolysis-gasification-facility-at-the-oneida-nation-in-wisconsin/>

(22) “Sen. Marc Pacheco proposes public forum on stalled Taunton gasification project” – 11/18/2010 – Taunton Press Gazette - http://www.tauntongazette.com/x794468351/Sen-Marc-Pacheco-proposes-public-forum-on-stalled-Taunton-gasification-project?zc_p=0&refresh=true

(23) “Taunton City Council votes to end IWT landfill deal” 1/22/2014 – Taunton Press Gazette - <http://www.tauntongazette.com/article/20140122/NEWS/140128780>

(24) Waste-to-fuel project CEO accused of fraud; Cheyenne plant never materialized - 1/09/2014 Casper Star Tribune - http://trib.com/business/energy/waste-to-fuel-project-ceo-accused-of-fraud-cheyenne-plant/article_0e6ca24a-0d18-5175-affe-4a9626a3cd09.html?print=true&cid

(25) St. Lucie Officials Decide to Terminate Geoplasma Contract – 4/17/2012 – TCPalm Newspaper (Florida) - <http://www.tcpalm.com/news/2012/apr/17/st-lucie-officials-to-decide-today-whether-to/>

(26) “Plasma Gasification Plan Goes Up in Smoke in Sacramento, Calif.” – 1/13/2009 – Government Technology - <http://www.govtech.com/technology/Plasma-Gasification-Plan-Goes-Up-in.html>

(27) “Environmental Law and Policy Center Presentation” – Melvin Nickerson Staff Attorney - <http://www.ilcswma.org/pdf/09.28.10./PlasmaArcGasification-M.Nickerson.pdf>

(28) PowerPoint: Incinerators in Disguise [Gasification, Plasma Arc] – August 2012 - Greenaction for Health and Environmental Justice <http://greenaction.org/powerpoint-incinerators-in-disguise-august-2012/>

(29) Alter NRG – Hitachi Metals in Utashinai, Japan’s closing http://www.alternrg.com/waste_to_energy/projects/

(30) “Cancer Fears Threaten Incinerator Plan” – 7/22/2012 – heraldscotland - http://www.heraldscotland.com/mobile/news/environment/cancer-fears-threaten-incinerator-plan.18210277?_40e1cb2028cd0e9d896c25d22f83cbc57fe712b

(31) “SEPA revokes Scotgen gasification plant license” – 8/28/2013 – LetsRecycle.com - <http://www.letsrecycle.com/news/latest-news/energy/sepa-revokes-scotgen-gasification-plant-license>

(32) “Ottawa Severs Ties with Plasco as Company Files for Creditor Protection” – Ottawa Citizen <http://ottawacitizen.com/news/local-news/plasco-energy-group-files-for-creditor-protection>

(33) “Blind River Connected to Plasco Through Ottawa Consultant – Ottawa Citizen <http://ottawacitizen.com/news/local-news/blind-river-connected-to-plasco-through-ottawa-consultant>

(34) San Francisco Achieves 80% Recycling, Highest in US – 4/30/13 – SustainableBusiness.com <https://www.sustainablebusiness.com/index.cfm/go/news.display/id/24827>

(35) San Francisco Environment (A dept. of the City and County of San Francisco – ZERO WASTE <http://www.sfenvironment.org/zero-waste>