# *Facts Rule Out Trash Gasification**

** Including pyrolysis, plasma arc, and other variations of staged incineration*

**Since WW II attempts to gasify municipal solid waste (MSW) have failed repeatedly. Processing trash with high heat is (1) polluting; (2) expensive; (3) energy inefficient; (4) destroys resources that could be reused, recycled, or composted; and (5) generates slag and other "by-products" that have to be landfilled.**

## 1. Gasification is a polluting technology

*Gasification pollutants—and the record of unsafe emissions—are similar to those of "traditional" mass-burn incineration.[1] Some examples:*

- Scotland's Dumfries plant, commissioned to gasify more than 20,000 tons, produced **200 breaches of emissions limits**, two of which involved dioxins, and also had 100 "short-term" exceedances. It was shut down in April 2011 and is now operating on a restricted basis.[2]
- In the UK a waste gasification plant on the Isle of Wight was shut down in 2010 because it **failed dioxin emissions tests.** "Thankfully the public health effects are thought to be minimal."[3]
- Plasco Energy's gasification pilot in Ottawa had **29 "emissions incidents," plus 13 "spills,"** in their 3-year history (2009-11), during which they were able to operate only 25% of the time;[4] and a pilot pyrolysis plant in Romoland, CA emitted significantly greater concentrations of **dioxins, NOx, volatile organic compounds, and particulate matter (PM10)** than the two aging mass-burn incinerators in the Los Angeles area.[5]

## 2. Garbage gasification attempts are characterized by economic and operational failures

*No commercial facilities in the US have succeeded in using gasification, plasma, or pyrolysis to generate energy from MSW. Pilots and plants worldwide have been plagued with problems. Examples:*

- ***MA:*** Ze-Gen's pilot project in New Bedford opened in 2007 with the publicized goal of gasifying MSW for electricity. Ze-Gen **abandoned that goal** after multiple operational problems, and shifted to gasifying specific, homogeneous waste streams such as rubber, plastics, railroad ties and wood pellets for fuel.[6] In 2009 their CEO characterized gasification of MSW as "folly."[7]
- ***UK:*** Compact Power shut down in 2008, finding costs too high and calorific (energy) value too low;[8] ***Germany:*** Swartz Pumpe stopped taking waste in 2007;[9] ***Germany***: Karlsruhe, the Thermoselect plant (dubbed in the press as "Thermodefect") was only able to burn half the contractually agreed upon garbage, and ceased operations in 2004 due to multiple operational problems;[10] ***WA****:* Allied Technology Group (ATG) attempted waste gasification using InEnTec technology that failed to perform, and declared bankruptcy in 2001.[11]

## 3. Gasification undercuts goal of meeting energy needs with renewables

*Gasification produces little energy, and garbage is not a renewable resource—most of it is either made of non-renewable resources or produced with large expenditures of fossil fuel.*

- The Natural Resources Defense Council estimates that 80% of MSW is **non-renewable**.[12]
- Gasification captures even less energy than mass-burn incineration with energy recovery—less than **1/5th of the calories (energy units) in garbage.**[13] >>>

## 4. Gasification utilizes recyclables and industrial waste

*Records from gasification plants and pilots overseas and in North America indicate that industrial waste, plastics, or other materials are added to MSW to make fuel or electricity.*

- There is **not enough high-carbon material in MSW** to gasify for energy or fuel, especially if all paper, cardboard and plastic have been removed for recycling.[14]
- Europe is turning away from incineration because it **competes with recycling** for these materials.[15]
- Incineration already competes with recycling in MA.[16]

## 5. Developing disposal facilities uses public money

*Whether or not facilities get built, both state and local funds are spent for their development. All waste disposal facilities entail the costs of regulation, monitoring, and sometimes clean up.*

- By 2010 Taunton, MA reportedly had spent at least **5 million dollars** on land, consultants, and lawyers to develop a gasification plant that three years later has not been designed or built.[17]
- If garbage gasification plants are allowed in MA, MassDEP will have to develop regulations for facility performance; organize and hold public hearings and respond to comments; review proposals and draft permits; hire consultants; and monitor facilities for compliance, including waste ban compliance. DEP resources would be better spent on **waste reduction** programs.

## 6. Nothing has changed to warrant modifying the MA moratorium on more incinerators

- A report by the Tellus Institute, commissioned by MassDEP, advised that Massachusetts **should not pursue gasification** in the Solid Waste Master Plan, 2010-20.[18]
- While the Patrick Administration claims that allowing more combustion will address a "shortfall" in disposal capacity in MA, the same tonnage could be kept out of landfills by enforcing existing waste disposal bans**.** Since 2009, DEP has issued only three penalties for waste ban violations.[19]

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[1] Theodore S. Pytlar, Jr., Vice President, Dvirka and Bartilucci Consulting Engineers, ppt. presented to the Federation of New
[2] http://www.heraldscotland.com/mobile/news/environment/cancer-fears-threaten-incinerator-plan.18210277?_=40e1cb2028cd0e9d896c25d22f83cbc57fe712ba
[3] http://www.letsrecycle.com/news/latest-news/waste-management/gasification-plant-remains-closed-after-re-testing
[4] http://www.zerowasteottawa.com/docs/141-RT-3557_RevA_PTR%20Final%20Assessment%20Report%20FINAL.pdf
[5] Chen, J. (2006, April 17). "IES Romoland Emission Tests, status update." South Coast Air Quality Management District, Emerging Technologies Forum.
[6] http://www.ze-gen.com/#projects
[7] Phone conference, January 29, 2009 with Bill Davis (CEO, Ze-gen), Lynne Pledger (Clean Water Action), Shanna Cleveland (Conservation Law Foundation), Sylvia Broude (Toxics Action Center).
[8] http://gasifiers.bioenergylists.org/files/Compact_power.pdf
[9] http://www.niederlausitz-aktuell.de/artikel_847_7296.php
[10] Bernhard Baldas, "The End of the Karlsruhe Garbage Miracle *Die Tageszeitung* [Germany] 11 Mar. 2004.
[11] Stang, J. "Union Says ATG Owes Severance Pay." *Tri-City Herald*, November 21 2001.
[12] http://switchboard.nrdc.org/blogs/ahershkowitz/municipal_waste_is_not_renewab.html
[13] Fichtner Consulting Engineers Ltd,"The Viability of Advanced Thermal Treatment of MSW in the UK," ESTET, 3/2004, 8.4.
[14] http://www.zerowasteottawa.com/docs/141-RT-3557_RevA_PTR%20Final%20Assessment%20Report%20FINAL.pdf, 3.1.1; Also, the Thermoselect plant in Karlsruhe added industrial waste. See http://www.ieabioenergytask36.org/Publications/2001-2003/Case_Studies/Case_Study_on_the_Thermoselect_Facility.pdf, at p.20.
[15] "…it is also important to switch from energy recovery to increased recycling. Plastic recycling rates are far too low across Europe," says European Commissioner for the Environment, Janez Potočnik. http://ukwin.org.uk/2013/01/25/european-environment-commissioner-calls-for-incineration-limits/
[16] Covanta offered Cape Cod towns a deal if they would contract to send 50% of their trash to the SEMASS incinerator, thereby undercutting the goal of the Cape Cod Planning Commission of a 60% recycling rate by 2012 as laid out in their Regional Policy Plan. See "SouthCoast towns face trash fee increase," by Charis Anderson, *The New Bedford Standard-Times*, March 1, 2009.
[17] http://www.tauntongazette.com/news/x794468351/Sen-Marc-Pacheco-proposes-public-forum-on-stalled-Taunton-gasification-project?zc_p=0
[18] www.**mass**.gov/dep/recycle/priorities/**tellus**mmr.pdf, p1.
[19] http://cleanwater.org/press/state-backs-away-garbage-reduction-policy