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To the members of the New York State Energy Planning Board:

Please accept these comments by Energy Justice Network on the Draft New York State Energy Plan. Energy Justice Network exists to build, support and network grassroots community organizations fighting dirty energy and waste industry facilities, primarily in the coal, gas and incineration sectors. We have been supporting the work of New York residents against incinerators and power plants for the last 15 years.

A proper energy plan needs to outline a hierarchy of solutions and be clear about which technologies and fuels are problems, not solutions. Let's be clear that these are problems, not solutions:

- Nuclear power
- Fossil fuels: coal, oil and gas
- Biomass and waste incineration
- Biofuels

Here's what the solutions look like, in a nutshell, in priority order:

Electricity	**Heating**	**Transportation**
• Conservation • Efficiency • Solar • Wind • Ocean/Tidal • Energy storage	• Conservation • Efficiency • Passive solar • Solar hot water • Ground-source (geothermal) heat pumps • Air-source heat pumps	• Conservation o Mass Transit o Buy/Work Local o Carpooling / Car Sharing o Telecommuting o Reduce Sprawl o Trails-to-Rails o Bicycling o Walking • Efficiency o Hybrid and efficient cars • Wind/Solar-Powered Electric Vehicles

Note that there is no such thing as transition fuels. For example, building new natural gas power plants, like that proposed in Wawayanda, NY, is not a solution and does not get the state closer to clean energy, even if it means Indian Point closing (which is a must).

Natural gas, nuclear power, biomass, ethanol, hydrogen and other false solutions have been promoted as transition fuels or technologies. It is our assertion that there is no such thing.

A transition is something that gets us from A to C by going through B. When economic resources (public or private) are invested in infrastructure for natural gas, biomass incineration, biofuels or the like, this doesn't bring us closer to the goal of meeting our energy needs with conservation, efficiency, wind, solar and ocean power. It actually makes it harder to get to our goal. This is because:

1. **The economic resources can be better spent by investing directly in conservation, efficiency, wind and solar.** There is no need to wait for these. Ocean power and some special wind and solar applications aren't ready to commercialized on a mass scale yet, but they're close and deserve investment dollars to bring them to market as soon as possible.
2. **They are an investment dead-end.** Building natural gas power plants, "gasification" trash incinerators, cellulosic ethanol production plants or other capital-intensive false solutions do not help get us to our goal. These projects take money that could be spent on real solutions and waste them on projects that need to be paid off over 10 to 30 years. No project owner is going to run such a plant for 5-10 years, tear it down, then build a concentrated solar power facility in its place.
3. **They create a new constituency of investors opposed to the move to clean energy.** Those who invest in "transition" projects will have an economic incentive to keep their plants running for decades, seeking their own subsidies and generally preventing the transition from "B to C."

Economic resources shouldn't be spent on investments in technologies that aren't the best we can do. Natural gas, biofuels and the like aren't genuine transition strategies. Building an ethanol or biodiesel plant doesn't get us closer to wind and solar, to better mass transit, to electric vehicles... it just uses resources that could be used TODAY to go directly to these solutions.

A good example of a genuine transition strategy is the transition from internal combustion engine vehicles to hybrid cars to plug-in hybrids to full electric vehicles. We can (and should) go directly to full electric vehicles where possible, but hybrid technology has helped make the transition to more efficient vehicles. Plug-in hybrids will be a decent solution for those who need to go beyond the commuting range of full electric vehicles.

These vehicle technologies flow into each other, and can therefore be considered transitional in nature. The "transition" arguments applied to natural gas and biofuels are NOT transition, however. If the technology goal is something available today (if we invest in it), there's no need for investment in "transition" technologies that don't directly build that goal.

As we build the new energy economy, it's better to continue using the existing dirty infrastructure to build the new clean one than to try building NEW expensive infrastructure that we'll be trying to get away from in the coming years. Having that new infrastructure requires that there will be more entities with economic imperatives that will want to keep their plants operating as long as possible, making it even harder to shift reliance once more -- onto the clean technologies we're ultimately aiming for.

Policies needed to get to clean solutions:

- Renewable Portfolio Standard:
  - Must increase it to 100% by 2030.
  - Must remove all combustion technologies from eligibility (notably biomass incineration and landfill gas burning for energy)[1]
  - Give reduced credit for wind turbines using neodymium rare earth magnets, due to their environmental and human rights impacts, to spur domestic use of the neodymium-free turbines[2]
- Need a corresponding energy conservation and efficiency mandate with clear timetables and goals, as well as incentives. Should aim to cut energy demand in half by 2030.
- Feed-in Tariffs
- Ban fracking
- Immediately close Indian Point and all nuclear reactors
- Close the state's 10 trash incinerators, which release more mercury than the state's 8 (much larger) coal power plants, and 14 times more mercury per unit of energy produced.[3]
- Adopt a statewide Zero Waste plan[4]
- Close LEED loopholes: no coal ash recycling into cement, or pelletizing waste to burn as fuel
- Public power – utilities cannot act in the public interest if they have obligations to shareholders and must profit from selling more energy. Private control of utilities has been the main barrier to conservation and efficiency.
- Incentives to ensure that solutions are kept small-scale, decentralized, community-owned and controlled
- Develop a plan to implement the Solutions Project's aims[5], and analyze a plan to meet New York's electricity needs with just wind, solar and energy storage, as the University of Delaware study did for the PJM grid.[6]
- Make transit in NYC fareless[7]

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[1] For more information on the hazards of biomass incineration, see http://www.energyjustice.net/biomass and on the climate impacts, see http://www.energyjustice.net/biomass/climate. On landfill gas, see http://www.energyjustice.net/lfg

[2] See the articles on rare earth metals in wind turbines at http://www.energyjustice.net/solutions/wind

[3] To make the same amount of energy as a coal power plant, trash incinerators release 28 times as much dioxin than coal, 2.5 times as much carbon dioxide (CO2), twice as much carbon monoxide, three times as much nitrogen oxides (NOx), 6-14 times as much mercury, nearly six times as much lead and 70% more sulfur dioxides. See: http://www.energyjustice.net/incineration/worsethancoal

[4] Model it on our suggestions to Maryland on their Zero Waste Plan. Their plan is here http://www.mde.state.md.us/programs/Marylander/Pages/ZeroWastePlan.aspx. Our comments are here: http://www.energyjustice.net/files/md/ZeroWastePlanComments.pdf

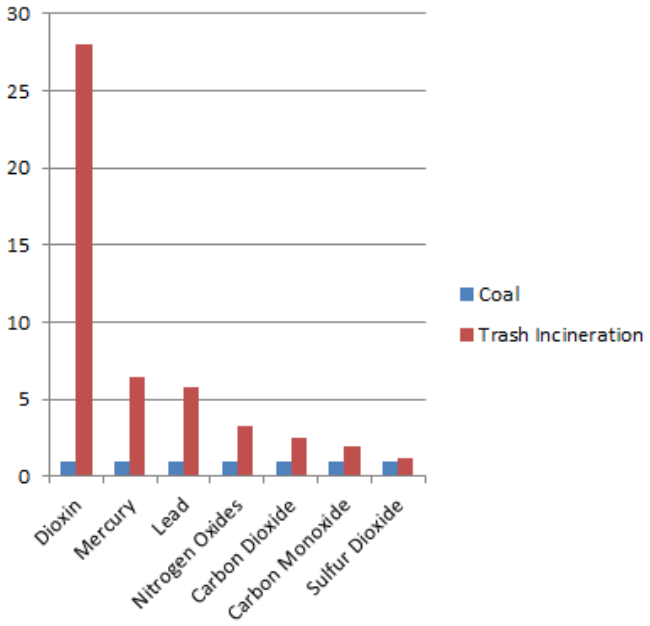
[5] Stanford University researchers project that New York can meet its energy needs by 2050 with 6.5% rooftop photovoltaic (PV) solar, 14% commercial/government rooftop PV, 15% solar PV plants, 10% onshore wind, 40% offshore wind, 1% wave, 5% geothermal, 7.5% hydroelectric and 1% tidal, while reducing demand by 36%, saving money and creating many jobs. See: http://thesolutionsproject.org/infographic/#ny

[6] Budischak , et. al., "Cost-minimized combinations of wind power, solar power and electrochemical storage, powering the grid up to 99.9% of the time," Journal of Power Sources, March 2013. http://www.sciencedirect.com/science/article/pii/S0378775312014759

[7] This isn't a crazy idea. In fact Paris is doing it and Mayor Bloomberg was exploring it. See: "Paris bans cars, makes transit free to fight air pollution," Grist, March 2014. http://grist.org/news/paris-bans-cars-makes-transit-free-to-fight-air-pollution/ On New York City, see: "Mayor Says Free Mass Transit in the Public's Best Interest," March 2007. http://www.ny1.com/content/news/67541/mayor-says-free-mass-transit-in-the-public-s-best-interest and "The Ultimate System: Free Mass Transit and Congestion Pricing," April 2007. http://www.streetsblog.org/2007/04/20/the-ultimate-

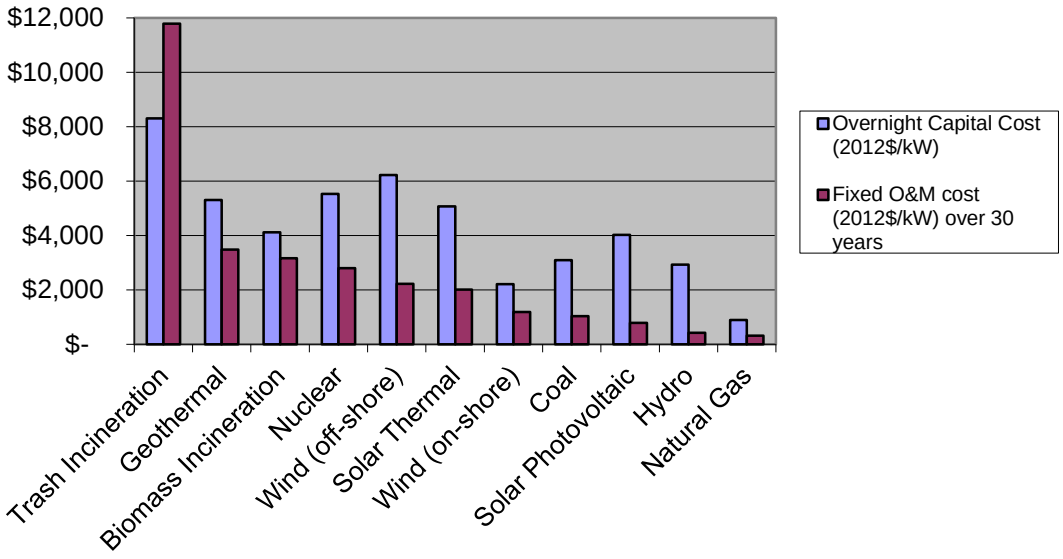
Ratios of pollution levels emitted per unit of energy produced by U.S. coal power plants and trash incinerators

Regarding the point on trash incinerators, please recognize that their very minor role in electricity production is outweighed by their enormous pollution toll, which was outlined in the NY Department of Environmental Conservation's analysis showing that mercury emissions are worse from incinerators than from coal power plants in the state.[8]



The clean solutions are becoming affordable. While gas prices are temporarily cheap, the long-term answers will be wind and solar as these fuel-free options keep becoming cheaper while fuel-reliant technologies rise in cost over time as resources are depleted.

Cost to build and operate new electric power plants



Source: "Updated Capital Cost Estimates for Utility Scale Electricity Generating Plants," Energy Information Administration, April 2013, p.6, Table 1. http://www.eia.gov/forecasts/capitalcost/; Full report here: http://www.eia.gov/forecasts/capitalcost/pdf/updated_capcost.pdf

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system-free-mass-transit-and-congestion-pricing/ and "Bloomberg Tests Free-Transit Waters," Aug. 2009. http://www.streetsblog.org/2009/08/04/bloomberg-tests-free-transit-waters/

[8] New York State Department of Environmental Conservation, "Matter of the Application of Covanta Energy Corporation for Inclusion of Energy from Waste Facilities as an Eligible Technology in the Main Tier of the Renewable Portfolio Standard Program. Case No. 03-E-0188," Aug. 19, 2011. http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={DEEA097E-A9A6-4E53-898C-0BC2F4C60CC4}

In response to specific points in the plan…

Page 14 mentions environmental justice.

On environmental justice… please don't dare talk about environmental justice while New York City is sending 20-30 years of its trash to be burned in incinerators in Niagara Falls, NY and in Chester, PA. Chester, PA is one of the nation's worse cases of environmental racism. Among many other polluters, they host the nation's largest trash incinerator which has among the fewest pollution controls. It's across the tracks from homes. This and so many other examples in New York must seriously be brought to a halt, no matter what contracts must be voided, permits suspended, enforcement taken, etc. This cannot be allowed to continue if we're to believe the state is taking environmental justice seriously.

Also, environmental justice concerns cannot be factored into "EJ siting and permitting review processes" without a needs assessment and an alternatives assessment and a vote of the impacted community after community education and deliberation over the results of those assessments.

It is important that any document and policy addressing environmental justice include the Principles of Environmental Justice[9], as defined by the environmental justice movement. The term was not legitimately redefined by U.S. EPA when they tried to boil the concept down to "fair treatment" and "meaningful involvement" – which is their "poison people equally" environmental "equity" doctrine. Please read the environmental justice law journal article I published and recognize the distinction between "justice" and "equity" approaches.[10]

Page 19 mentions nanotechnology.

Nanoscale materials might indeed revolutionize clean energy, but until it can be fully monitored and contained to prevent a new wave of undetectable and toxic pollution, nanoscale materials must not be commercialized.[11]

Page 19 lists these focus areas:

1. **Improving energy affordability**
2. **Unleashing the power of private sector energy financing**
3. **Providing a more resilient and flexible power grid**
4. **Giving customers more control over their energy use**
5. **Aligning energy innovation with market demand**

On #1, focus on subsidies for low-income residents, not cheap energy for all, which encourages wastefulness. As California and Japan have shown in their moments of crisis, deep conservation and efficiency, and innovation along those lines, come best with scarcity and higher energy prices. Low prices encourage more consumption. There must be a balance between price signals that encourage demand reduction, and ensuring that people have a minimum safety net so that no one is freezing in the dark, and that everyone can have a basic standard of living even if they are in poverty and unable to work.

#2 is fine, so long as you're not encouraging dirty false solutions like so-called waste-to-energy technologies.

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[9] Principles of Environmental Justice. http://www.ejnet.org/ej/principles.pdf

[10] Mike Ewall, Esq., "Legal Tools for Environmental Equity vs. Environmental Justice," Sustainable Development Law & Policy Journal, 2012-2013. http://www.ejnet.org/ej/SDLP_Ewall_Article.pdf

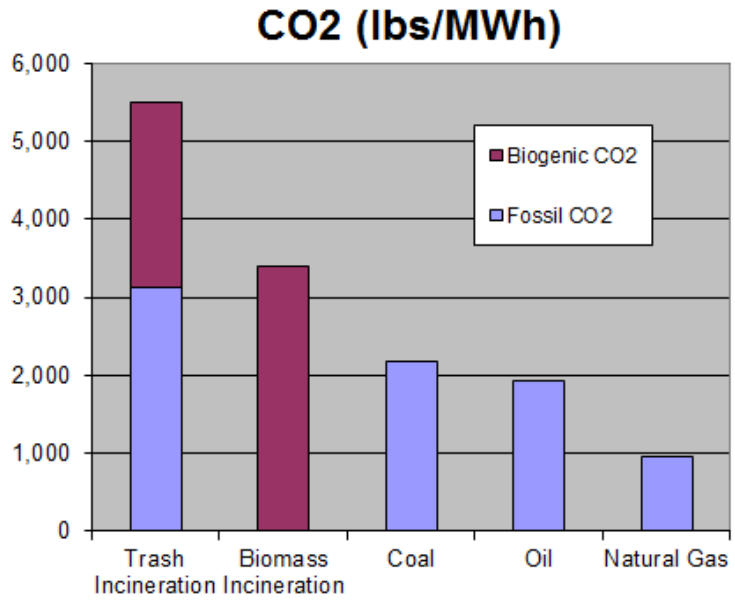
[11] Please review http://www.etcgroup.org/issues/nanotechnology and http://www.nrdc.org/health/science/nano/contents.asp

#3 will be aided by commercializing energy storage.

For #4, it's important to protect consumer privacy and to use wired, not wireless, systems.

Page 22 states as an ambition: "The transportation sector has transitioned to greater fuel economy and lower carbon fuels, such as electricity, natural gas, hydrogen, and biofuels."

Electric vehicles and transit is a big part of the transportation solution, but until that electricity is wind and solar powered, it's misleading to call it "lower carbon" when much of the grid is powered by coal and natural gas. Due to excessive leakage in natural gas systems, and the global warming potential of methane, which is 86 to 105 worse than CO2 over a 20-year time frame,[12] natural gas is far worse than coal for the climate, and thus worse than oil. The biomass and trash incineration in the mix is also far worse. Biomass incineration is 50% worse for the climate than coal, and trash incineration is 2.5 times as bad as coal, according to EPA data.[13]



Hydrogen is not a fuel, but a way of storing energy. 95% of hydrogen is produced through steam reforming of natural gas, and thus has the same problems with natural gas, but additional ones due to inefficiencies in conversion and hazards in storage.[14]

Biofuels are also not a solution, as they require continuing growing or wasting for feedstocks, often involve genetically-modified organisms, have a poor net energy balance, and often can be worse for the climate than petroleum.[15]

[12] See studies compiled at http://www.energyjustice.net/naturalgas

[13] EPA eGRID v.9 Database (2010 data for U.S. electric generators). Analysis by Energy Justice Network. Charts and data tables documented at http://www.energyjustice.net/egrid

[14] http://www.energyjustice.net/hydrogen/

[15] See http://www.energyjustice.net/ethanol and http://www.energyjustice.net/ethanol/cellulosic and http://www.energyjustice.net/files/biodiesel/factsheet.pdf and http://www.energyjustice.net/biodiesel/algae. Studies on climate impacts of biofuels are here: http://www.energyjustice.net/ethanol/climate/

Page 22 also states that "Electric and natural gas delivery infrastructure is the secure backbone of the energy system, allowing consumers to easily connect to efficient, affordable, reliable, and increasingly clean energy sources."

Natural gas will not stay affordable,[16] nor is it clean or just to be poisoning Pennsylvania communities for your gas.

Page 28-29 states: "Working through innovative public-private partnerships, investments in clean energy strategies will help New York to reduce the intensity of its carbon emissions from the energy sector by 50 percent by 2030 (measured in CO2 emissions per Gross State Product from 2010 baseline), putting New York on a pathway to achieve an 80 percent reduction in total emissions by 2050."

Methane leakage from natural gas and from landfills is not easily measured, but needs to be avoided, whether counted or not, with policies to avoid natural gas use and landfill gas-to-energy (which releases more methane and CO2 than if the gas is simply flared) and to digest residuals before landfilling to avoid having gassy, stinky landfills. See attachment on zero waste for more references and solutions on landfills.

Page 31 states: "Realign energy efficiency policies to work with and through markets in order to accelerate the pace of energy efficiency deployment while fostering continued economic growth in New York State."

The plan needs to take an honest look at the peaking of resources – not just the peaking of oil, coal, gas and uranium which underpin the energy economy upon which material production relies, but the peaking of the production of materials that become waste, as well. Economic growth is not our future. Our future is one of economic contraction and reduced consumption. Plans like this need to see the blessing in that, recognize this reality, and plan accordingly.

Page 37 states: "Coordinate renewable energy policies to strategically harness the many resources that the State can provide to solar, wind (offshore and land-based), bioenergy..."

Bioenergy is not part of the solution. It's part of the problem. The sooner that is realized, the sooner you'll move to clean solutions without having more communities to fight over the false solutions the plan will spur.

Page 43 states: "Reduce reliance on petroleum products for heating buildings by supporting the use of clean alternatives to heating oil and expanding access to natural gas in the near term while pursuing strategies to reduce natural gas leakage.

- **a. DPS to encourage and support oil-to-gas conversions by collaborating with other State agencies and regulated gas utilities to accelerate investments in natural gas distribution.**
- **b. DPS to reduce emissions from natural gas infrastructure by requiring gas utilities to identify and repair leaks of significant magnitude.**
- **c. DEC to evaluate regulations to limit methane emissions from natural gas compressor stations on intrastate pipelines.**
- **d. NYSERDA to support economic and efficient clean heat options as alternatives to fossil fuel consumption, including solar thermal, geothermal, and the use of sustainably harvested biomass and advanced heating systems."**

[16] See http://shalebubble.org and http://www.energyjustice.net/prices and recognize that as soon as hundreds of new, expanded and converted gas-fired power plants come online, and once chemical and fertilizer manufacturing demand more gas, and LNG exports start up, that gas prices will shoot through the roof at the same time that production starts declining again.

Natural gas is not a solution or transition, but a bridge to climate destruction and destroyed water resources. DPS should not encourage oil-to-gas conversion, which will exacerbate climate impacts, but should incentivize the heating solutions outlined on page 1 of these comments.

Reducing leakage in gas infrastructure is important, but no investment in *new* gas infrastructure is justified when those dollars need to go directly into non-burn solutions.

Compressor stations need to be electric-powered. Blow-downs and gas venting need to be banned.

There is no such thing as sustainably harvested biomass. Biomass incinerators require a constant supply of wood within a certain radius of a plant, and cutting trees to burn them is exactly the opposite of what must be done to protect the climate. Biomass is dirty and inherently inefficient.[17]

Page 47 states: "Department of Agriculture and Markets, NYSERDA, and DEC to support in-state, sustainable fuel production including agriculture and organic waste feedstocks, especially as a substitute for petroleum fuels."

See previous comments on biomass and biofuels.

Page 47 also states: "NYSERDA to assess and develop potential deployment strategies and infrastructure requirements for the commercialization of hydrogen fuel cell vehicles."

See previous comments on hydrogen.

Page 57 lists advantages of "Reducing Environmental Impacts Associated with Our Energy System"

This section says nothing about the benefits of reducing nuclear power use, of eliminating waste incineration or halting fracking?? That's absurd. Please revise this accordingly.

Sincerely,

Mike Ewall, Esq.
Founder & Director, Energy Justice Network

[17] See http://www.energyjustice.net/biomass and http://www.energyjustice.net/biomass/climate and http://www.energyjustice.net/egrid and http://www.pfpi.net/wp-content/uploads/2014/05/PFPI-DOE-letter-May-27-2014.pdf

Attachment A: Zero Waste Planning

Much energy and carbon emissions can be saved through a zero waste plan.[18]

A proper zero waste plan must follow the appropriate hierarchy. The hierarchy for municipal solid waste (MSW), in a nutshell, is as follows:

Reduce
Reuse
Source Separate:
-Clean Compostables → Aerobic Composting → Landscaping / gardening / ag uses
-Recycling → Material Recovery Facility (MRF):
-Recyclables to Highest-end, Most Local Markets Possible
-Residuals → Waste (below)
-Waste → "Dirty MRF" (a.k.a. Mechanical / Biological Treatment):
-Additional Recyclables captured and marketed
-Residuals → Anaerobic Digestion → Digestate to Landfill
-Special Collections → e-Waste, Household Hazardous Waste and other special/dangerous materials to proper recycling options

In more nuanced detail, there are two places to look:

1) The Zero Waste International Alliance's Zero Waste Hierarchy, which is based on a simpler, earlier hierarchy we developed. See: http://zwia.org/standards/zero-waste-hierarchy/
2) Energy Justice Network's zero waste hierarchy, which is nearly the same, but more detailed on the back-end landfill management aspects, as follows:

- Redesign
  - Make products durable, recycled and recyclable
  - Use materials which are more environmentally sustainable
- Reduce
  - Toxics Use Reduction
  - Reduce amounts of toxic chemicals in production
  - Replace toxic chemicals with less toxic or non-toxic alternatives
- Consumption Reduction
  - Use less
  - Buy less (reduce advertising)
  - Buy stuff with less packaging
  - Avoid disposables & non-recyclables
- Packaging Reduction
  - includes styrofoam bans and single-use paper/plastic bag bans and taxes
- Reuse/Repair
  - Thrift stores
  - Charity collections
  - Dumpster diving
  - Freecycle
  - Paint blending
  - Repair centers for bikes, computers/peripherals, furniture, appliances, etc.

[18] http://www.no-burn.org/downloads/MoreJobsLessPollutionFinal.pdf

- Recycle
  - source-separation, not single stream
  - seek the highest end-use and avoid "downcycling"; segregate office paper from lower paper grades and other recyclables, to keep quality high
  - buy recycled; create market for glass so that glass collected for recycling is actually recycled, not dumped in landfills
  - adopt a bottle bill / wastepicking
- Compost
  - Curbside collection of organics (weekly), which can be done while decreasing the collection of trash and recyclables to biweekly (the smelly stuff in trash is the compostable stuff, so this encourages people to compost if they don't want trash smelling).
  - Ban clean organics (not sewage sludge!) from landfills. Sewage sludge, even after being digested, does not belong on farm fields or in urban gardens.
  - Clean compost from food scraps and yard waste can be used in gardening or landscaping.
- Research
  - on a regular basis, do a waste sort and see what remains in the waste and feed that into Extended Producer Responsibility campaigns, product bans and other measures to eliminate these residual materials from the waste stream, ensuring that they're dealt with further up in this hierarchy
- "Dirty" Materials Recovery Facility (MRF) for the remainder (a.k.a. the "Mechanical" part of Mechanical/Biological Treatment)
  - pull out additional recyclable and compostable material. It's important that this not be a replacement for source separation and upstream recycling, as it will get people out of their good recycling habits and will degrade the quality of recyclables, lowering their value and ensuring less will actually be recycled.
- Anaerobic digestion (a.k.a. the "Biological" part of Mechanical/Biological Treatment)
  - The remainder, if there is enough organic material in it, should be digested in order to reduce the methane generating potential, stabilizing the waste
- Monofill (landfill in separate landfill cells at existing landfills)
- Ensure proper landfill management (don't mismanage the landfill by managing it for energy production)
  - Minimize gas production: Do not manage the waste facility as an energy facility by stimulating gas production.
    - Keep out liquids
      - Cover the active face of the landfill to keep out rainwater, using a temporary structure
      - Do not recirculate leachate
    - Cap landfills with permanent synthetic covers and install gas collection systems in months, not years.
  - Maximize gas collection:
    - Segregate organics in landfills for best gas collection
    - Maintain high suction on collection wells; do not damp down wells or rotate off the wells to stimulate methane production
  - Clean the gas prior to use
    - Filter toxins in the gas into a solid medium like a carbon filter; containerized and store on-site.
      - Do not send to carbon "regeneration" or "recycling" facilities [they simply incinerate the captured chemicals, polluting the air]
  - The purified gas can be used:
    - for heating purposes (burned in a high efficiency boiler),
    - piped into gas lines,

        - used to make alternative vehicle fuel,
        - used in fuel cells,
        - burned for electricity in a high efficiency turbine (less preferable to uses for heating), or
        - the CO2 and methane can be segregated and sold as industrial chemical feedstocks (but not for food industry use).
- Landfill gas-to-energy should not be considered renewable (That allows it to undercut clean sources like wind and solar and puts source reduction, reuse, recycling and composting at a competitive disadvantage.)

The landfill management aspects are nuanced because it's critical to ensure that greenhouse gas emissions from landfills are avoided, unlike how landfills are commonly managed today. For a full appreciation of the need for this type of landfill management, please review the materials at http://www.energyjustice.net/lfg/

Find further resources on zero waste here: http://www.energyjustice.net/zerowaste

Note that incineration has no place in a zero waste hierarchy and that it contradicts the very definition of zero waste.

Common mistakes to avoid:

- The Houston model of ending source separation, letting everyone throw everything in one bin, and sending it all to a "dirty MRF" so that recyclables are degrade, compostables won't be clean, and the mess is a good recipe for feeding incinerators they won't be able to afford.
- Assuming that clean and dirty organics can be mixed together, digested, then used for agricultural applications instead of landfilling it. Clean organics need to be aerobically composted. Dirty organic residuals, including sewage sludge, should be digested and monofilled. The digestate will not be clean enough to be suitable to be in contact with farms or people.
- Assuming that landfills are worse than incinerators and that incinerators don't just necessitate smaller, more toxic, landfills. More on this below.