

Incineration does not make sense in the Twenty First Century

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OUTLINE

- 1) Personal introduction
- 2) Summary of the arguments against incineration
- 3) Details of key arguments: The Global Picture and the Local Picture
- 4) The Better Alternative: the Ten Steps to Zero Waste

A personal introduction

I first got involved in waste management in 1985 over a local incinerator battle in St. Lawrence County in NY

Over the last 32 years this issue has taken me to 49 states in the USA and 66 other countries. It has involved delivering approximately 2500 **pro bono** talks

Between 1985 and 1995 -as director of **Work on Waste, USA** -and editor of **Waste Not** – my wife and I helped citizens defeat approx. 300 incinerator projects

- Only ONE trash incinerator has been built in the USA since 1997
- I first heard about ZERO WASTE at a California Resource Recovery Association conference in San Francisco in 1999
- I shot a video at that conference :
- "Zero Waste: An Idealistic Dream or Realistic Goal?" (www.AmericanHealthStudies.org) and
- have promoted Zero Waste ever since
- Particularly in Italy, which I have now visited 77 times and spoken in over 290 communities!

THE ZERO



Untrashing the Planet One Community at a Time

WASTE

How cities and towns around the world are saying no to incinerators and wasteful product design

SOLUTION

and yes to radical recycling, reuse entrepreneurs, and the jobs they create

PAUL CONNETT

**Published
by Chelsea
Green, 2013**

The Zero Waste Solution: **Untrashing the Planet One** **Community at a Time.**

Foreword written by

Jeremy Irons

BLENNHEIM FILMS PRESENTS

JEREMY IRONS

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...THINK AGAIN

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The Arguments Against Incineration

Incineration is bad for the local, regional and global economy

Incineration is the most expensive way of handling waste
Incineration is the most expensive way of making electricity

This project is not designed to solve a local waste problem but to make you a very junior partner in the waste business. Incineration will make Romulus a “dump town”

Incineration is not in the community interest

Incineration creates very few permanent local jobs

Incineration is a threat to agriculture, tourism and desirable industries

Incineration is a threat to property values

Incineration is a threat to health and the intellectual development of children

The Arguments Against Incineration

10. Incineration produces toxic air emissions
11. Incineration produces a toxic ash. Incineration does not get rid of landfills
12. Incineration is a waste of energy
13. Incineration is a wasted opportunity to fight global warming
14. Incineration does not move us towards a sustainable society (i.e. circular economy)
15. There are far better alternative ways of handling our discarded materials which are better for the local economy; pose little threat to health; create far more jobs; are compatible with tourism and agriculture; and move us towards a sustainable future.

The Global Picture

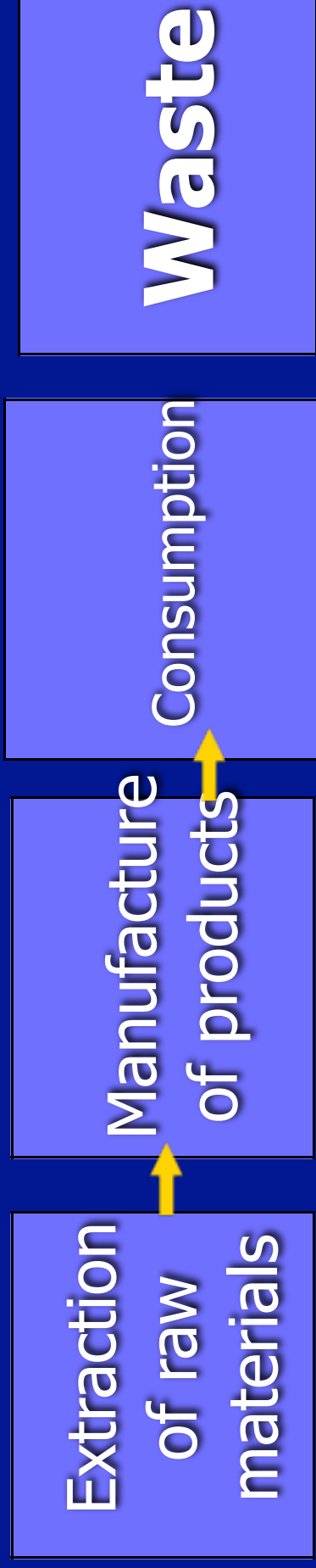
Sustainability

- We would need **FIVE** planets if every one consumed as much as the average American
- Meanwhile, **India, China etc.** are copying our consumption patterns
- Something has got to change and **the best place to start that change is with waste**

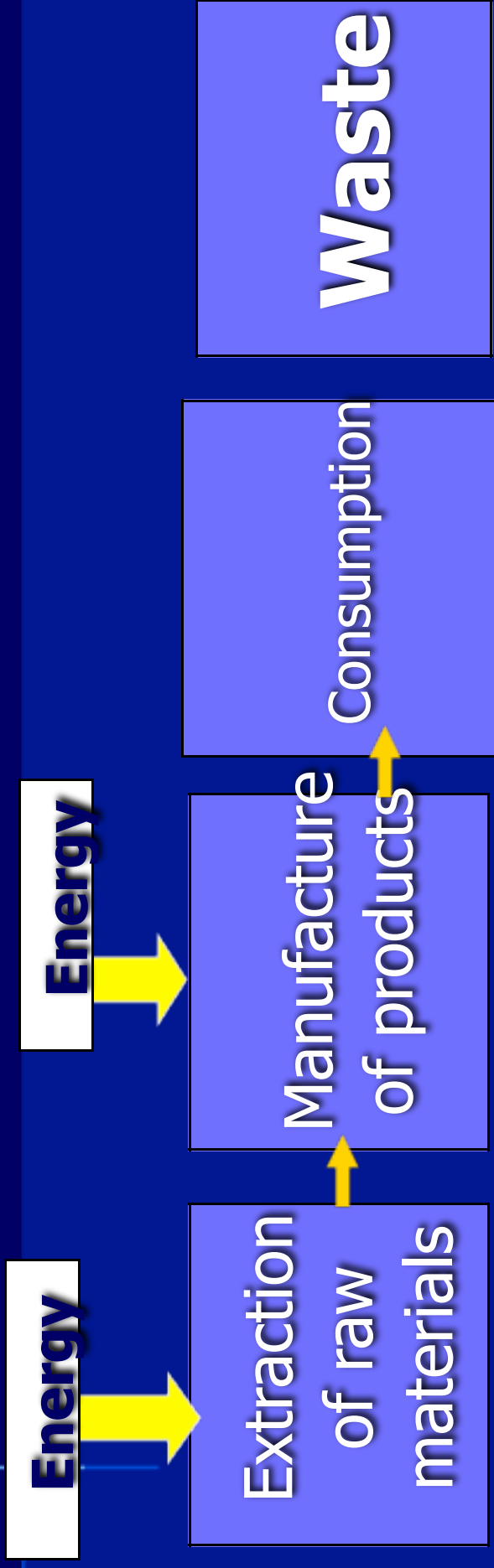
**We have to move from
from a
throwaway society
to a
sustainable society**

We have to move from
from a
linear economy
to a
circular economy

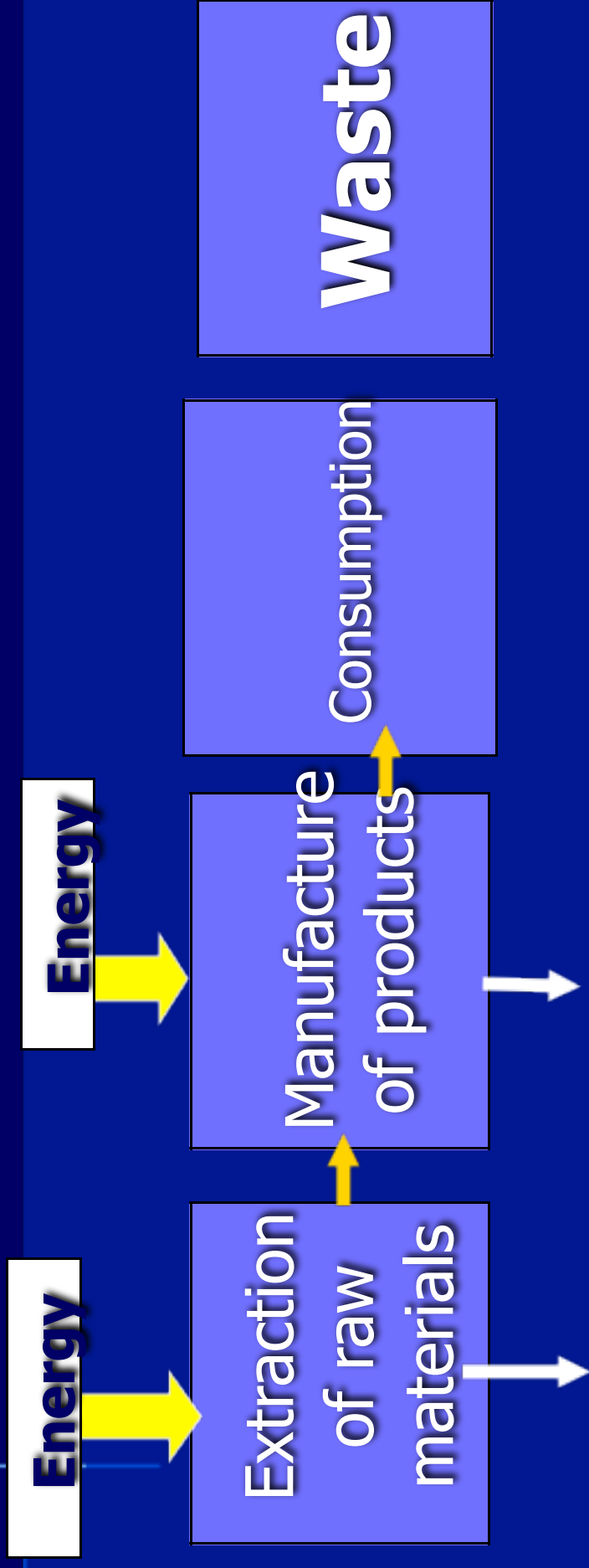
The Linear Economy



Global Impacts of the Linear Economy

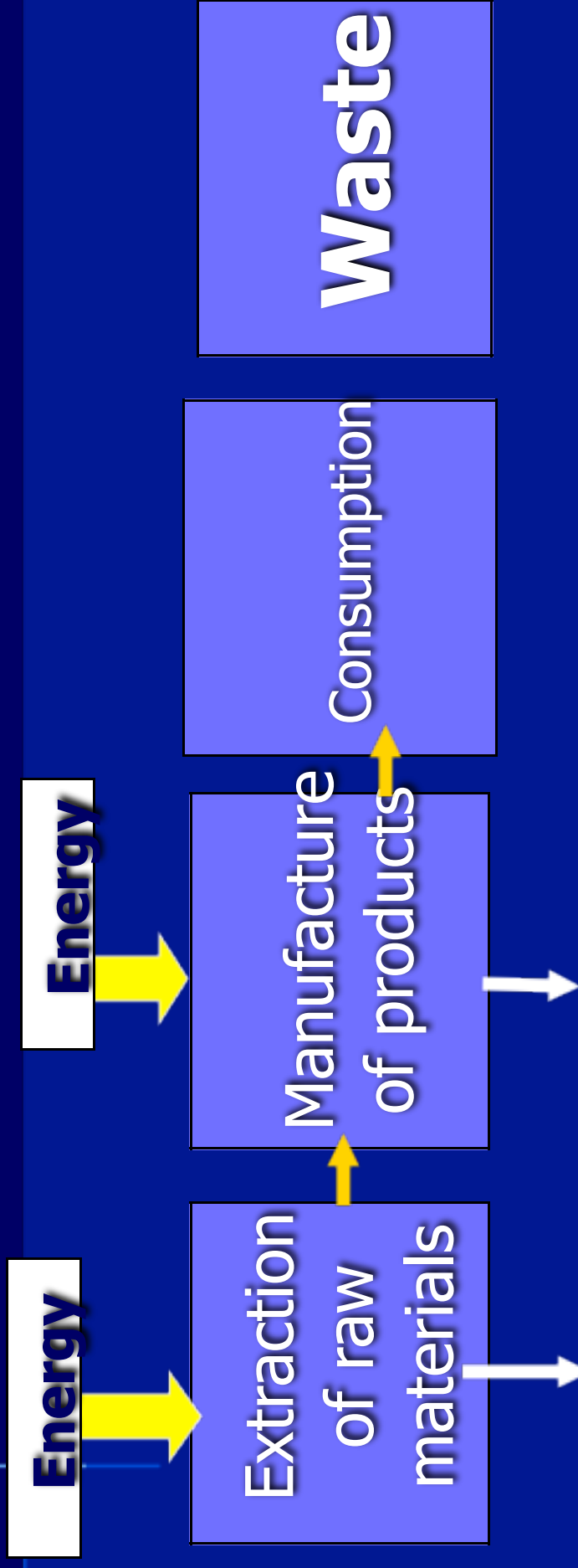


Global Impacts



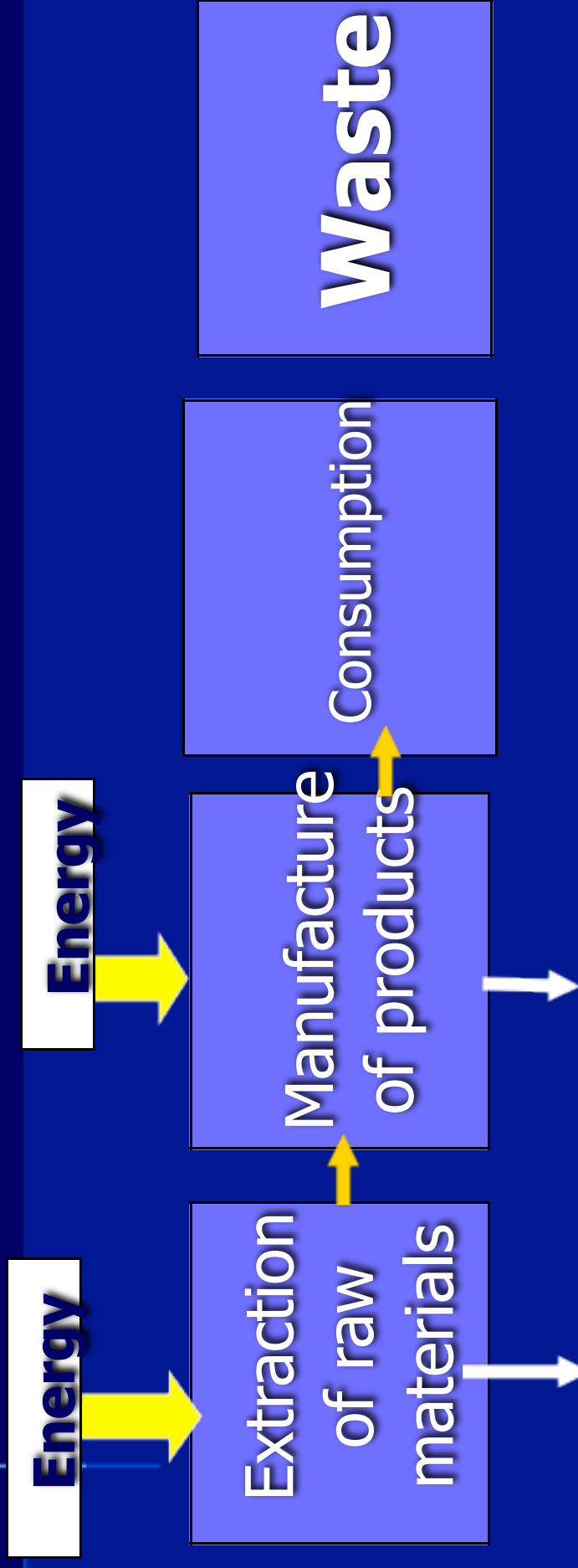
Ripping down rain forests

Global Impacts



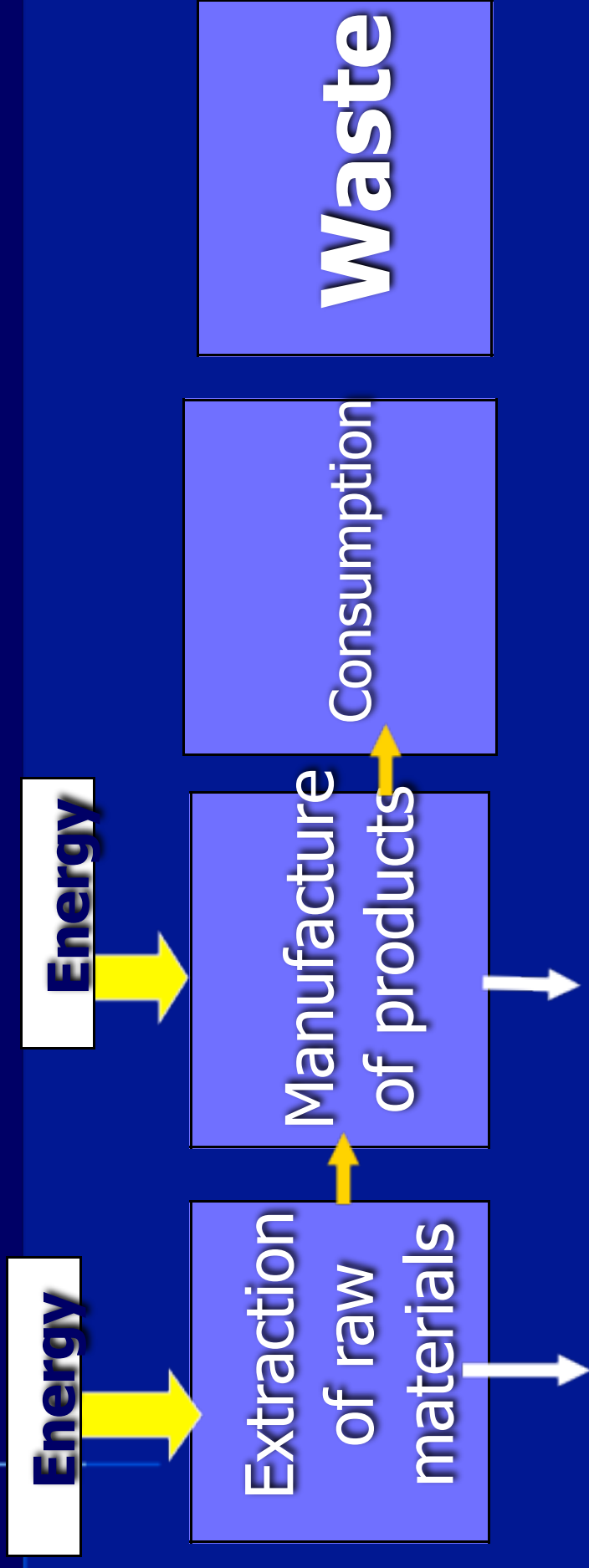
Extinction of species

Global Impacts



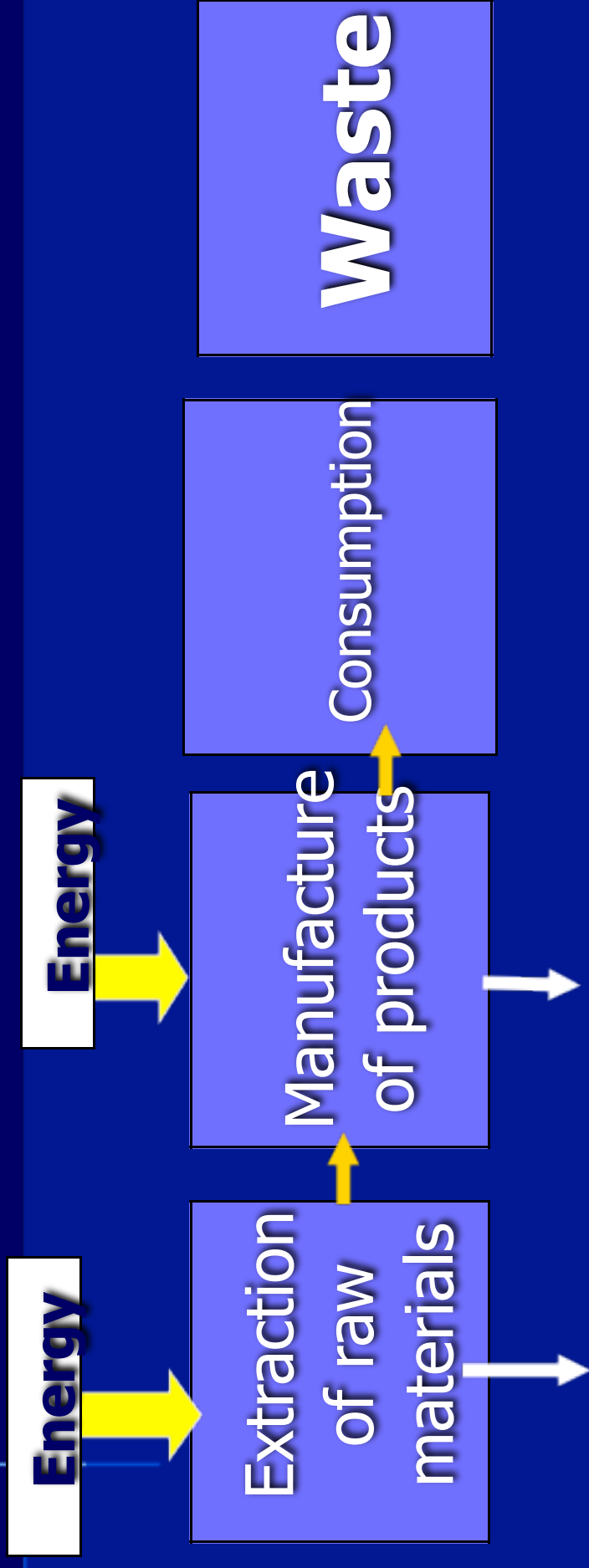
**Production of solid waste
(70 times more than we see
in our trash bins)**

Global Impacts



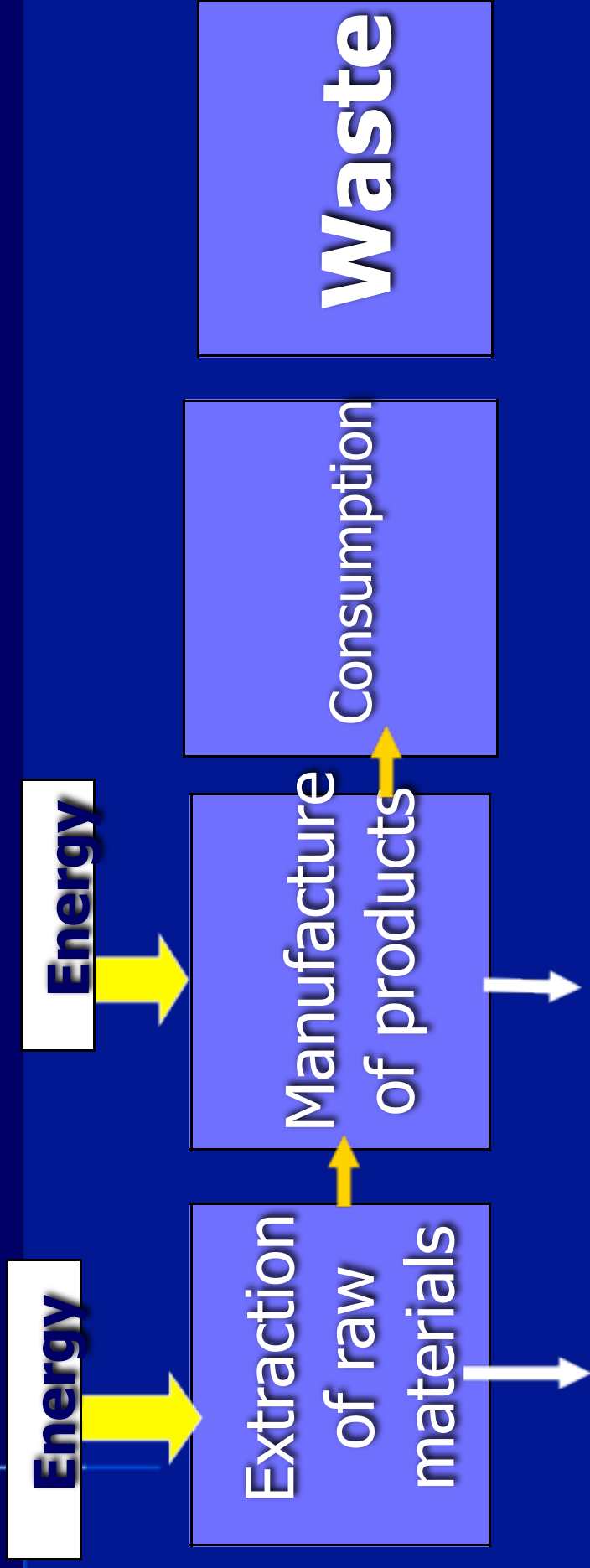
Air pollution

Global Impacts



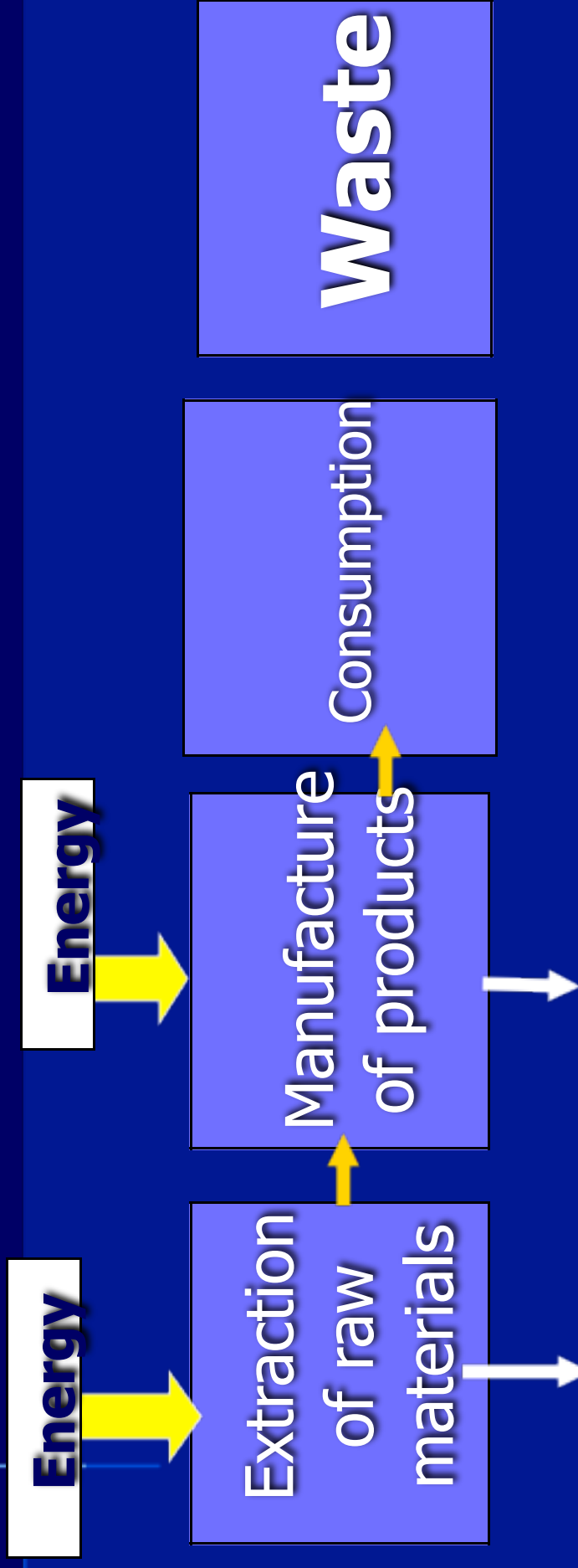
Water pollution

Global Impacts



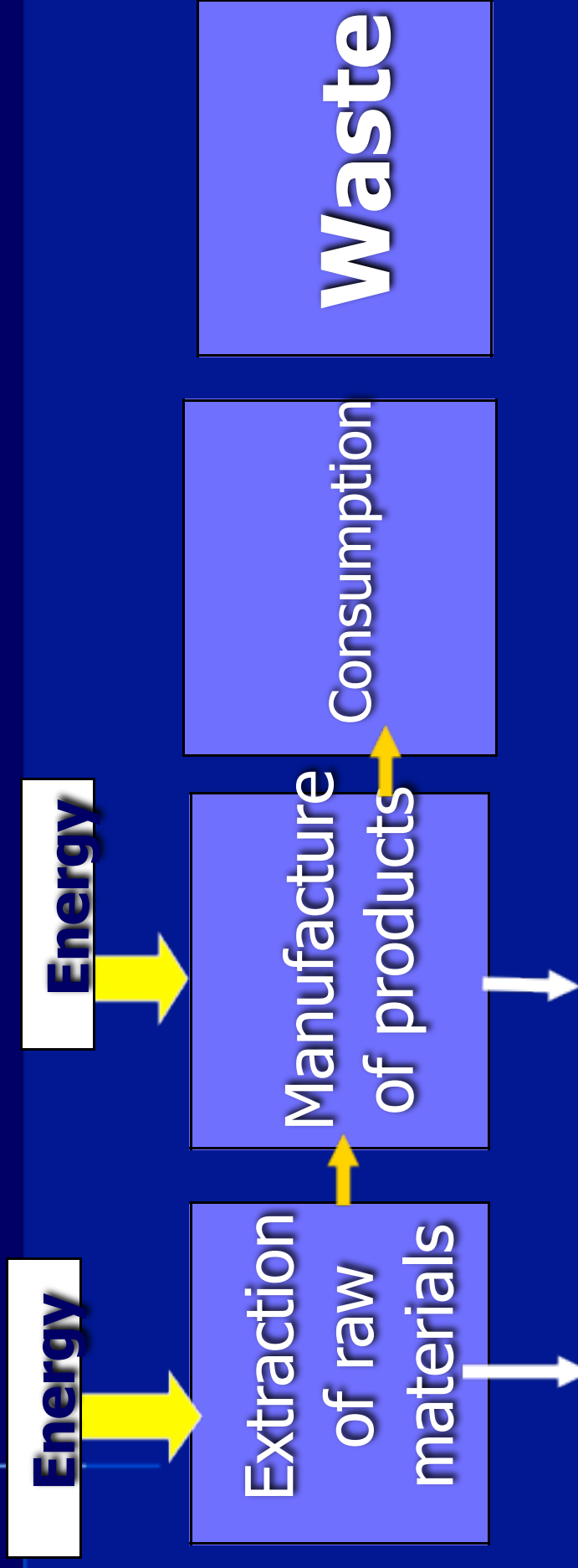
Plastic Pollution of the oceans

Global Impacts



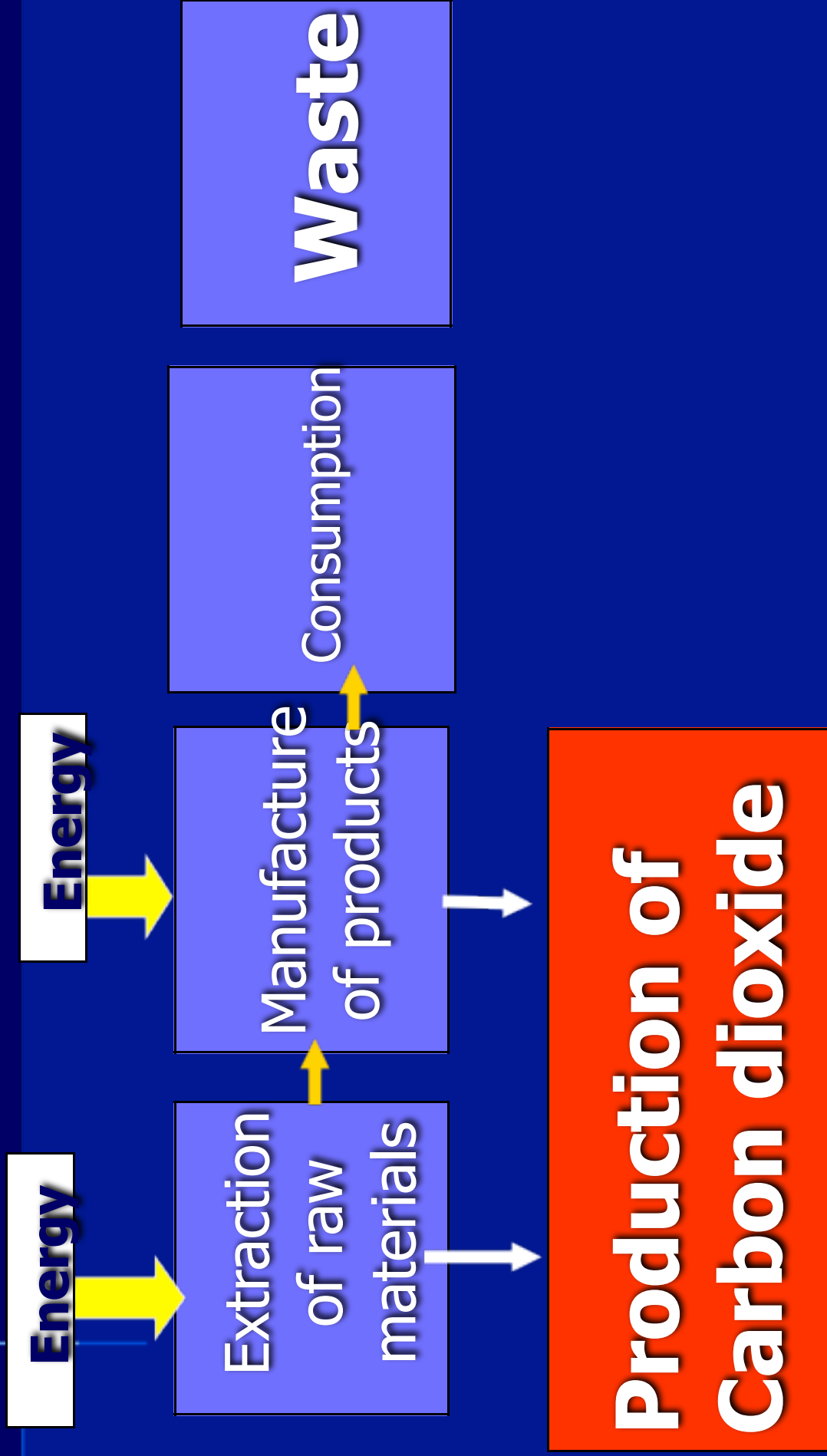
**Reduction in availability
of clean water**

Global Impacts

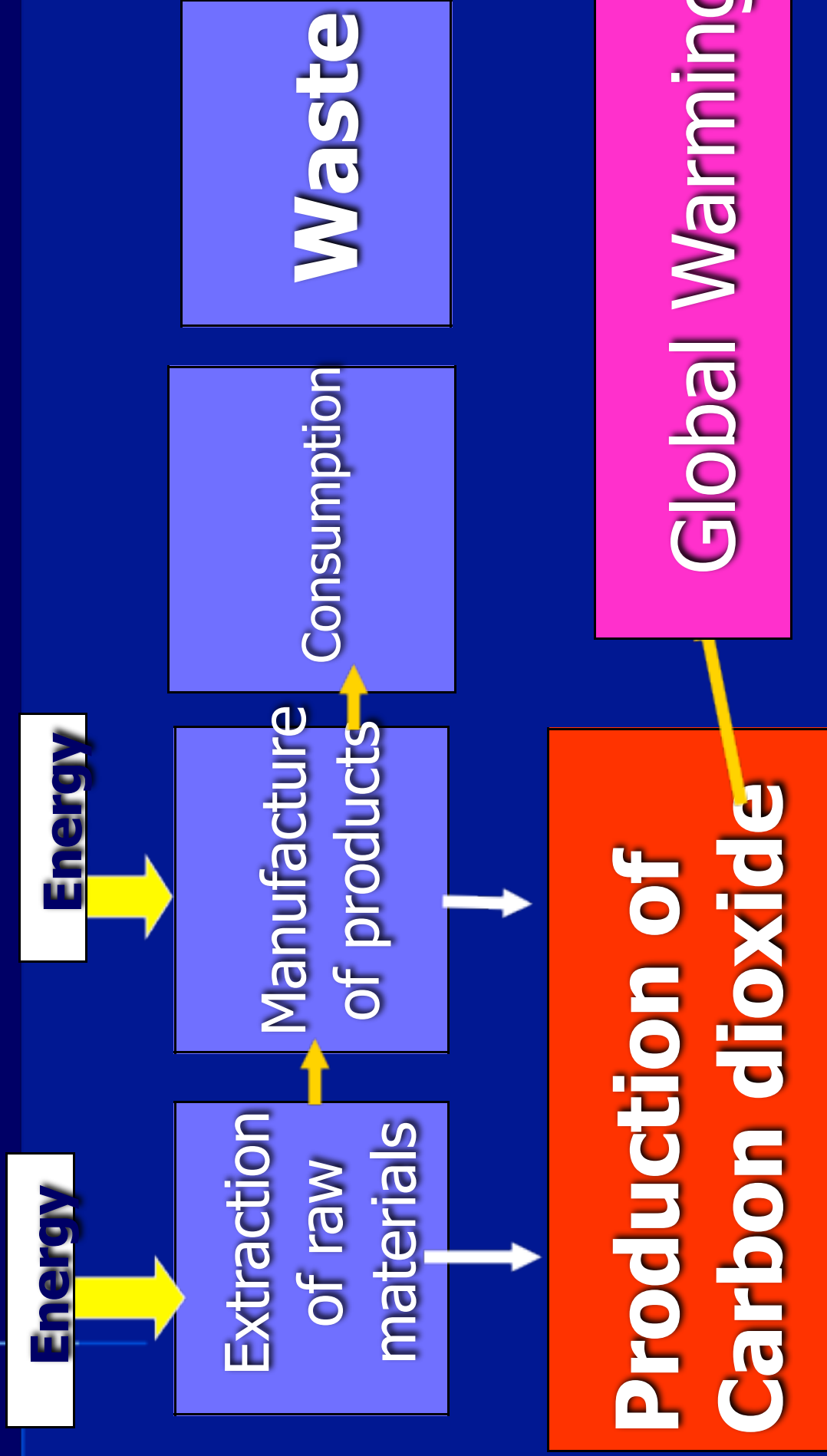


**Exhaustion of fossil fuels
and mineral resources**

Global Impacts

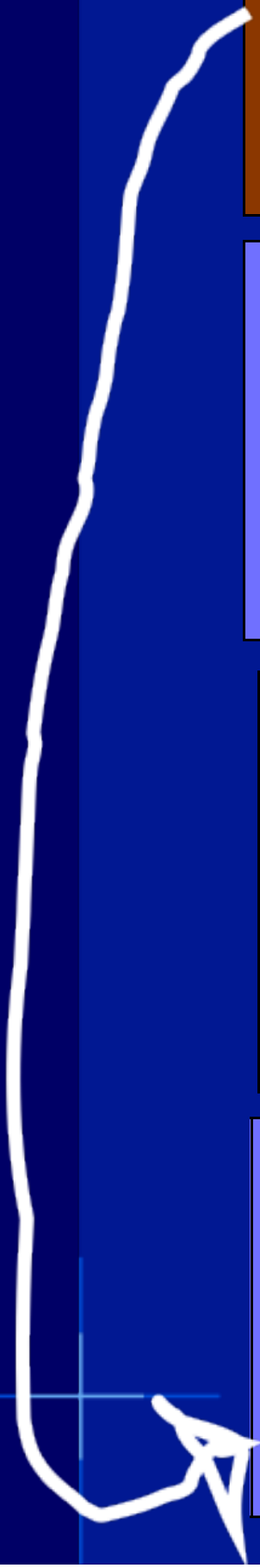


Global Impacts



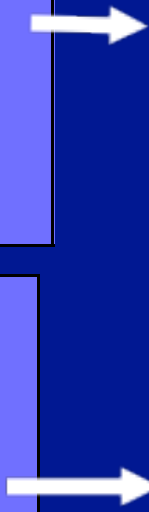
**How do different
waste handling
methods impact the
linear economy?**

LANDFILLING



**BURY
OUR
WASTE**

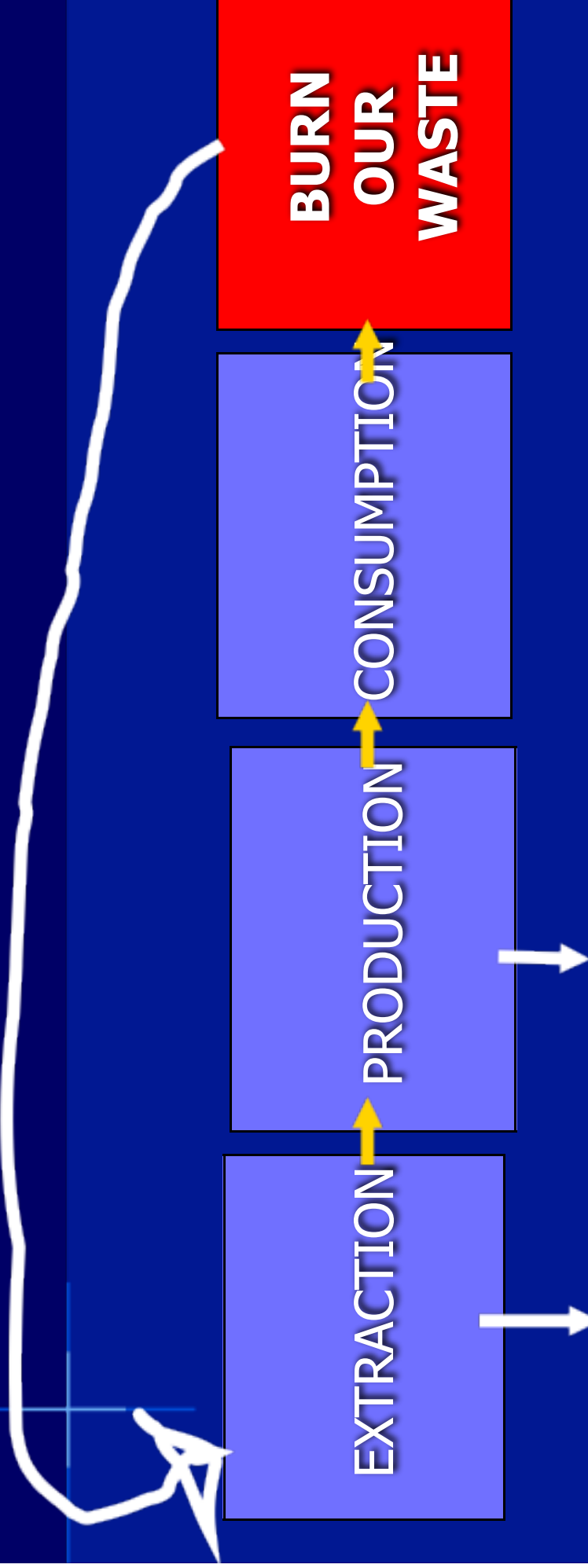
EXTRACTION → PRODUCTION → CONSUMPTION



When we bury our waste we have to go back to square one. There is NO movement towards a circular economy.

Landfilling is NOT a
sustainable solution

INCINERATION and GASIFICATION



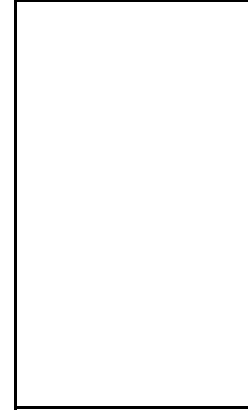
When we burn our waste we have to go back To square one. In addition we put out toxic air emissions, more carbon dioxide and are left with toxic residues.

Incineration is NOT
a sustainable
solution



The Syracuse (OCRRA) Trash Incinerator

Moving from the Cathedral of Consumption to the High Tech Toilet



Shopping
Mall



The Great Throwaway Society

Municipal
Incinerator



Many items we may have in our hands for only seconds
will end up moving quickly from the cathedral to the trash

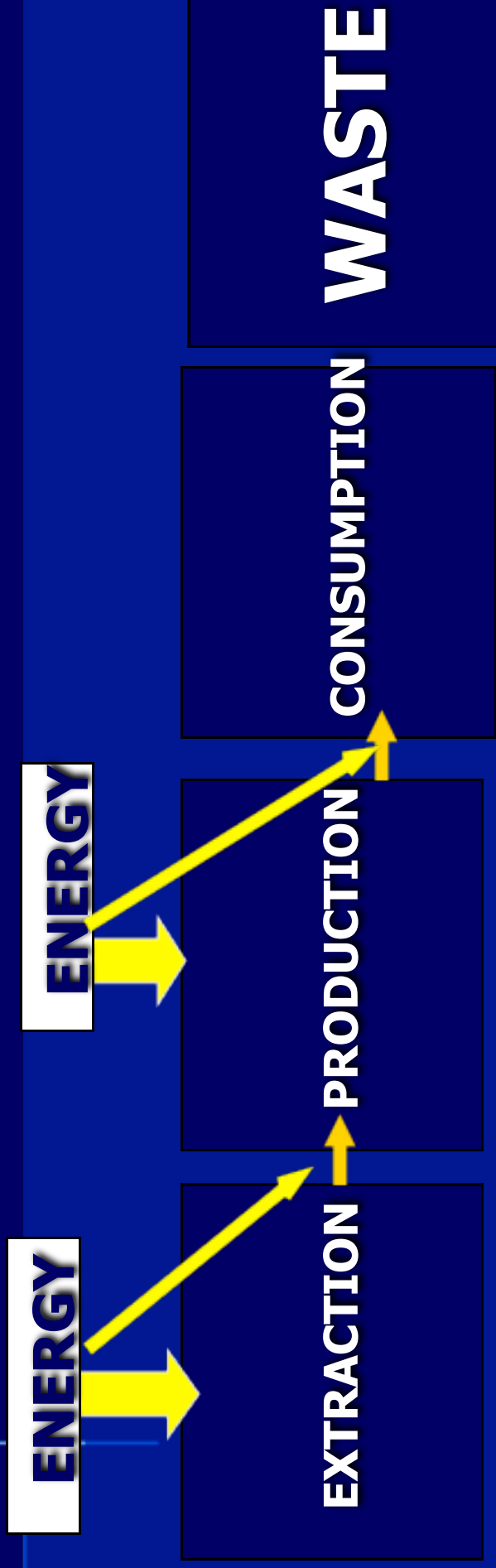
FIGURE 1.2. The "modern" city: Materials move very quickly from the cathedral of consumption (the shopping mall) at one end of town to the high-tech toilet (the trash incinerator) at the other. *Illustration*

by Jack Cook

Locally incinerators produce
a little energy **BUT globally**
are a **HUGE waste of energy**

**Because they waste the
opportunity to recover the
imbedded energy in
extraction, transport and
manufacture**

ENERGY USE OF THE LINEAR SOCIETY



**Far more energy is saved
with recycling, reuse and
composting.**

Energy Comparison: Recycling versus incineration (ICF consulting, 2005)

material	Energy savings from recycling GJ/tonne	Energy output from incineration GJ/tonne	Energy savings recycling versus incineration
Newsprint	6.33	2.62	2.4
Fine paper	15.87	2.23	7.1
Cardboard	8.56	2.31	3.7
Other paper	9.49	2.25	4.2
HDPE	64.27	6.30	10.2
PET	85.16	3.22	26.4
Other plastic	52.09	4.76	10.9

**Incinerators are a HUGE
wasted opportunity to fight
global warming**

INCINERATION

ENERGY

ENERGY

Extraction

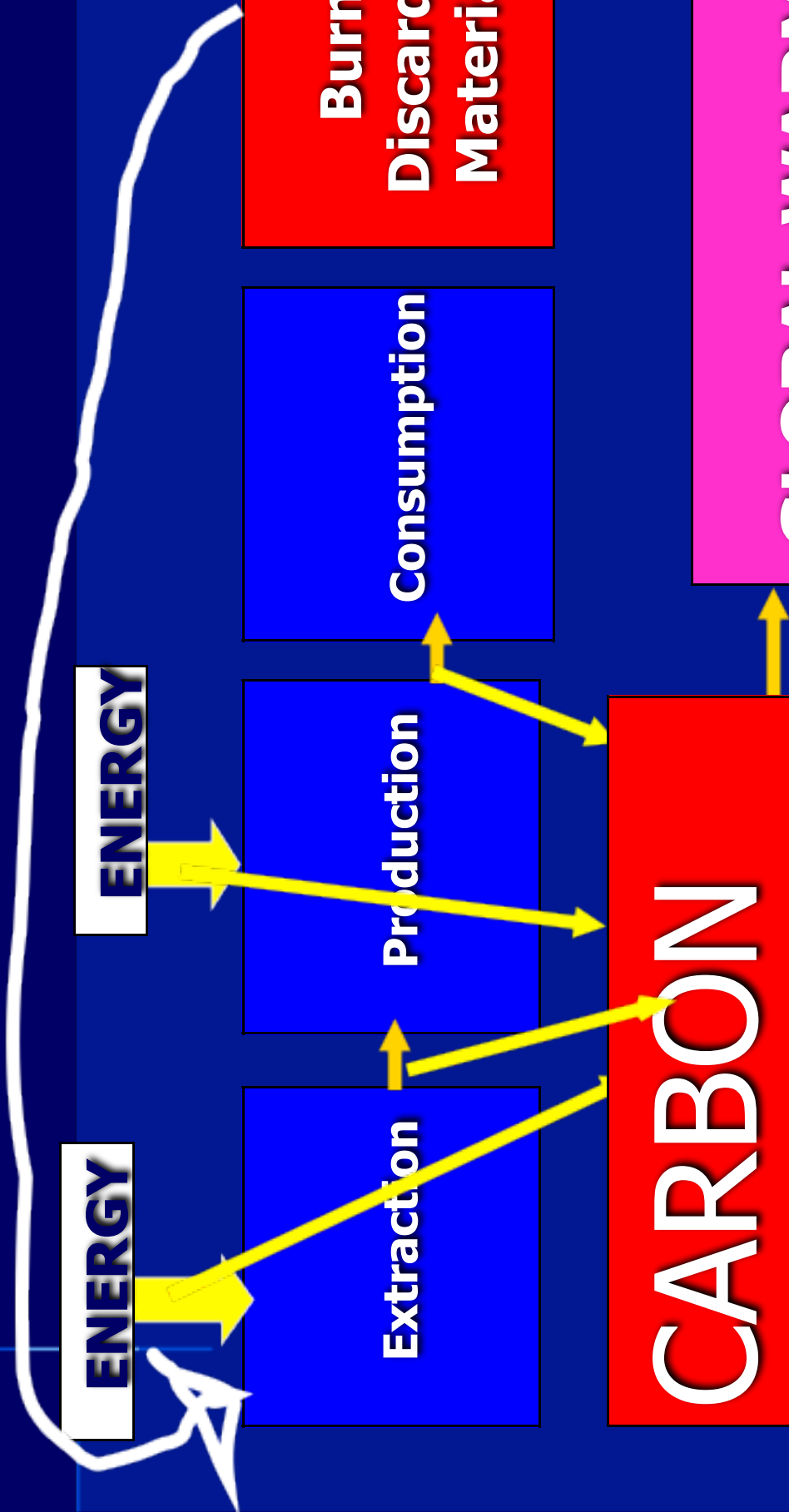
Production

Consumption

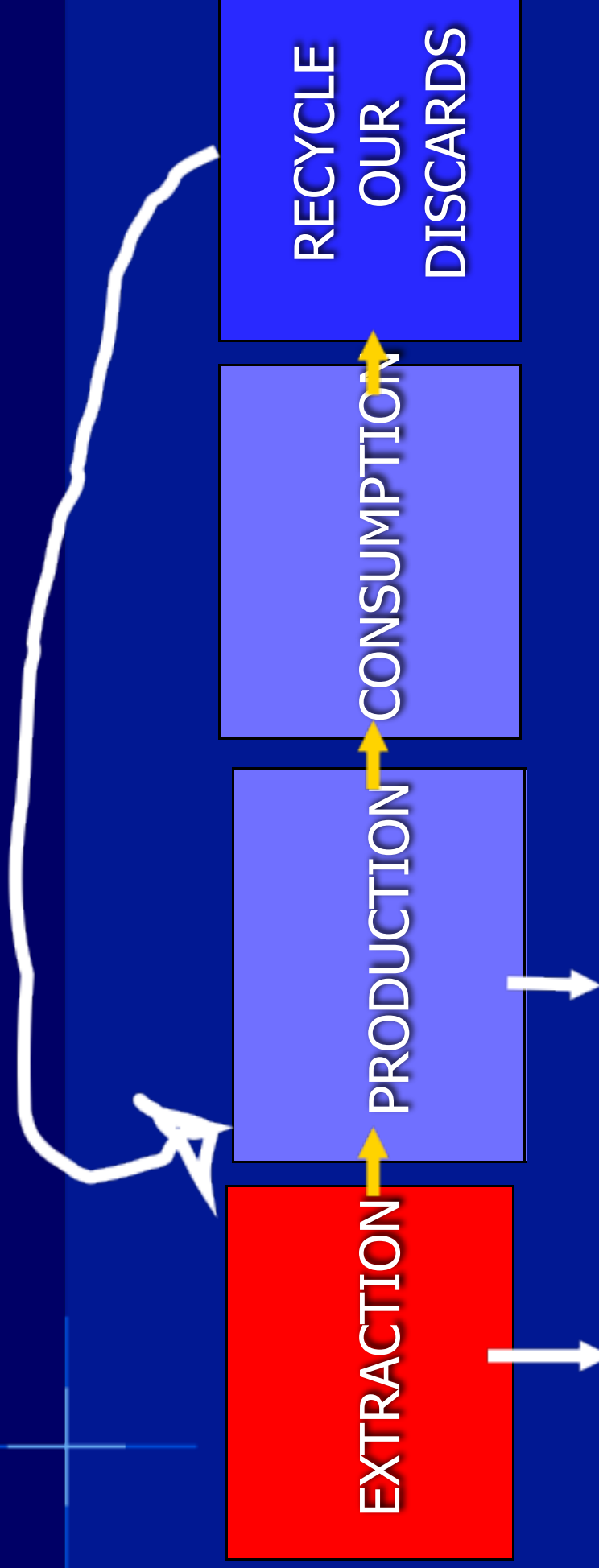
Burn
Discarded
Materials

**CARBON
DIOXIDE**

GLOBAL WARMING

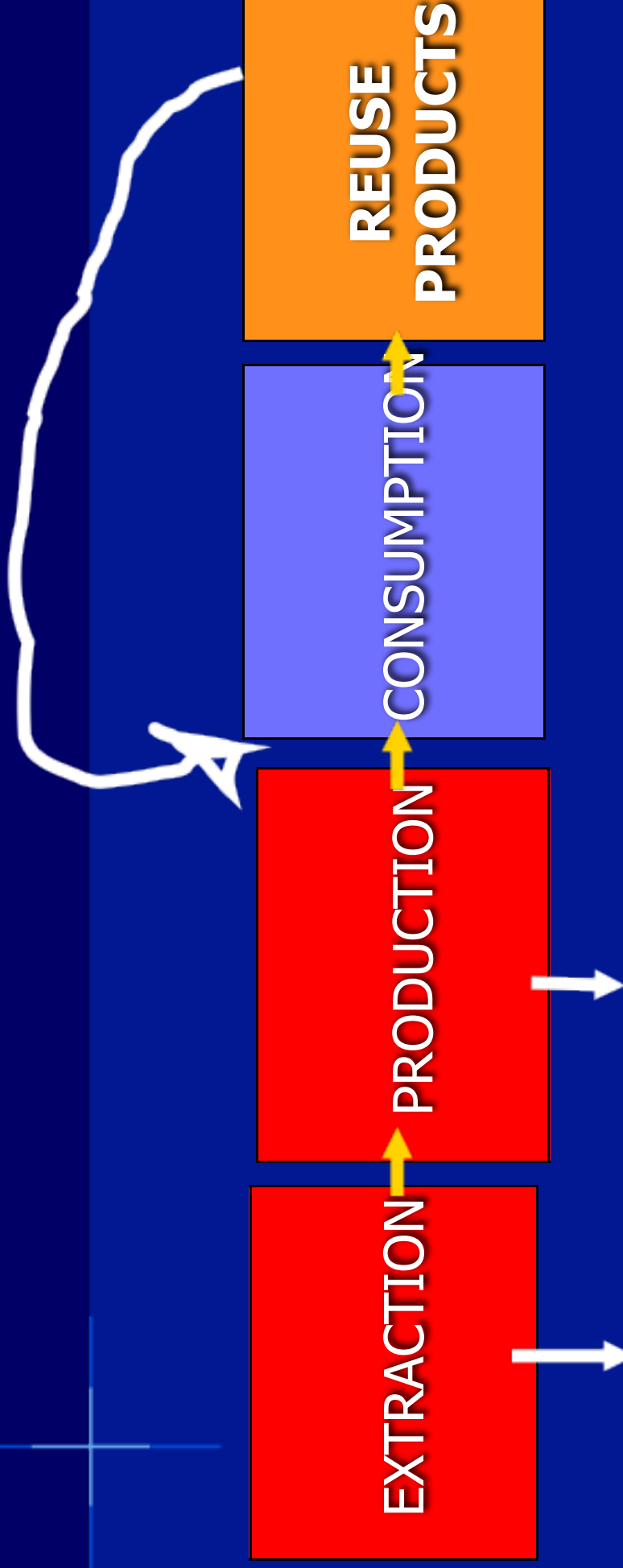


RECYCLING MATERIALS



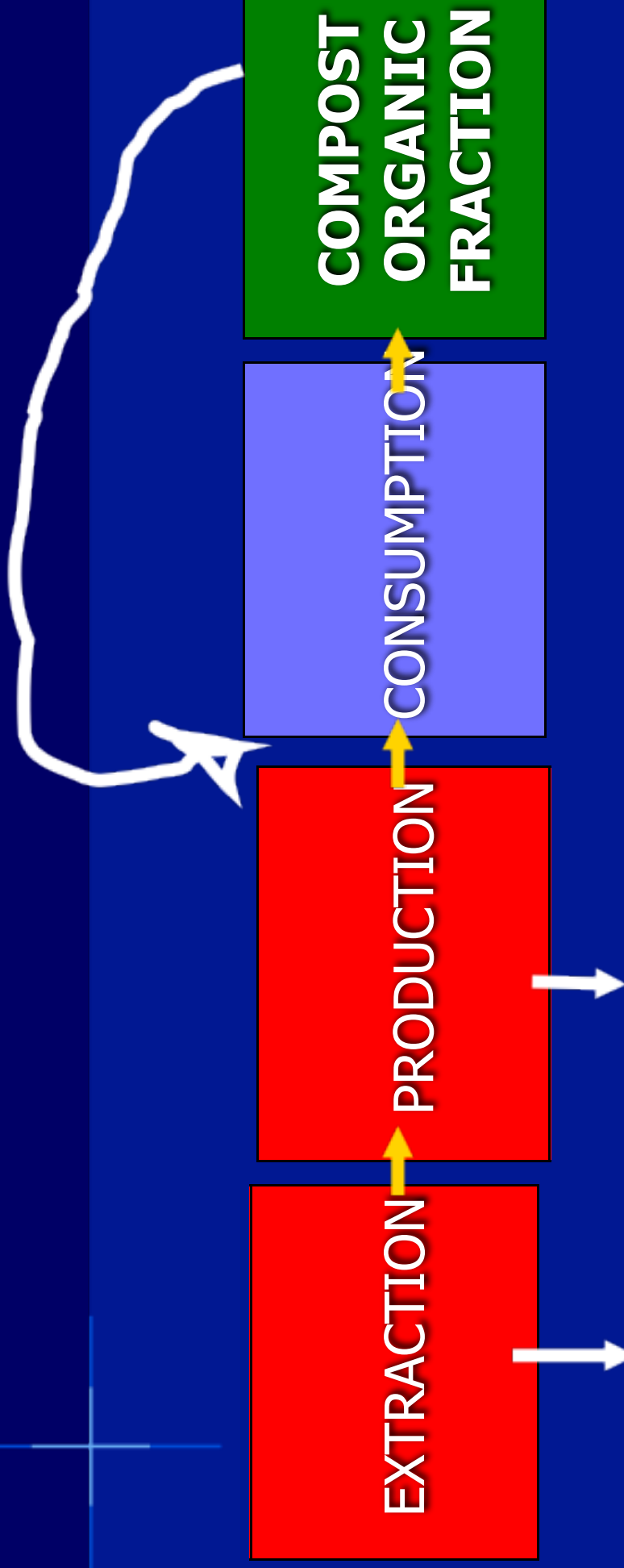
When we recycle our discarded materials back to industry we eliminate the global impacts of extraction.

REUSE PRODUCTS



When we reuse products we cut out the global impacts of both extraction and manufacture.

COMPOST ORGANICS



When we compost the organic fraction we reduce the need for synthetic fertilizer. Compost also improves the structure of soil, holds onto water, nutrients and **CARBON**.

COMPOST





The composting program near San Francisco

As far as sustainability is concerned

Every ton that we bury or burn takes us in the opposite direction;

Whereas every ton that

We compost,

We reuse,

We recycle, and

We avoid,

takes us in the right direction

The Local Picture

This incinerator will be the largest built in the USA

- 1) 240 trucks/ day along Routes 96, 96A, Route 414, Bromka Road, Routes 5 and 20, until the train delivery is fully operational
- 2) Railhaul operations will deliver 2,000 tons of waste per day (Monday through Saturday).







This incinerator will be the largest built in the USA

- 3) Will generate at least 800 tons of toxic ASH per day.

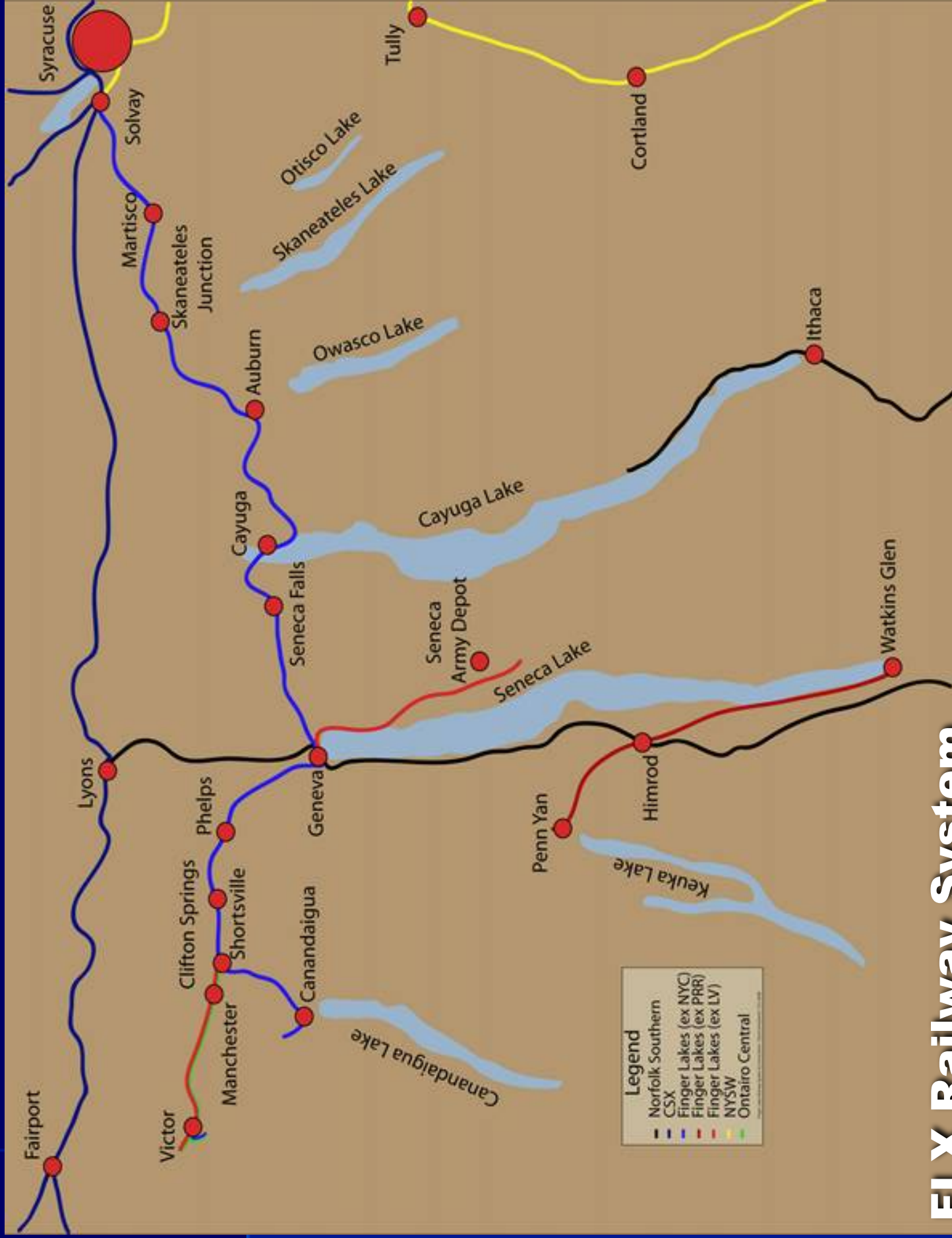
Covanta “Combined Ash” monofill, Haverhill, Mass



This incinerator will be the largest built in the USA

- 4) This incinerator will withdraw 445,000 gallons per day of water from Seneca Lake.
- 5) Discharged water will go into Reeder Creek, already designated by EPA as an impaired water body.

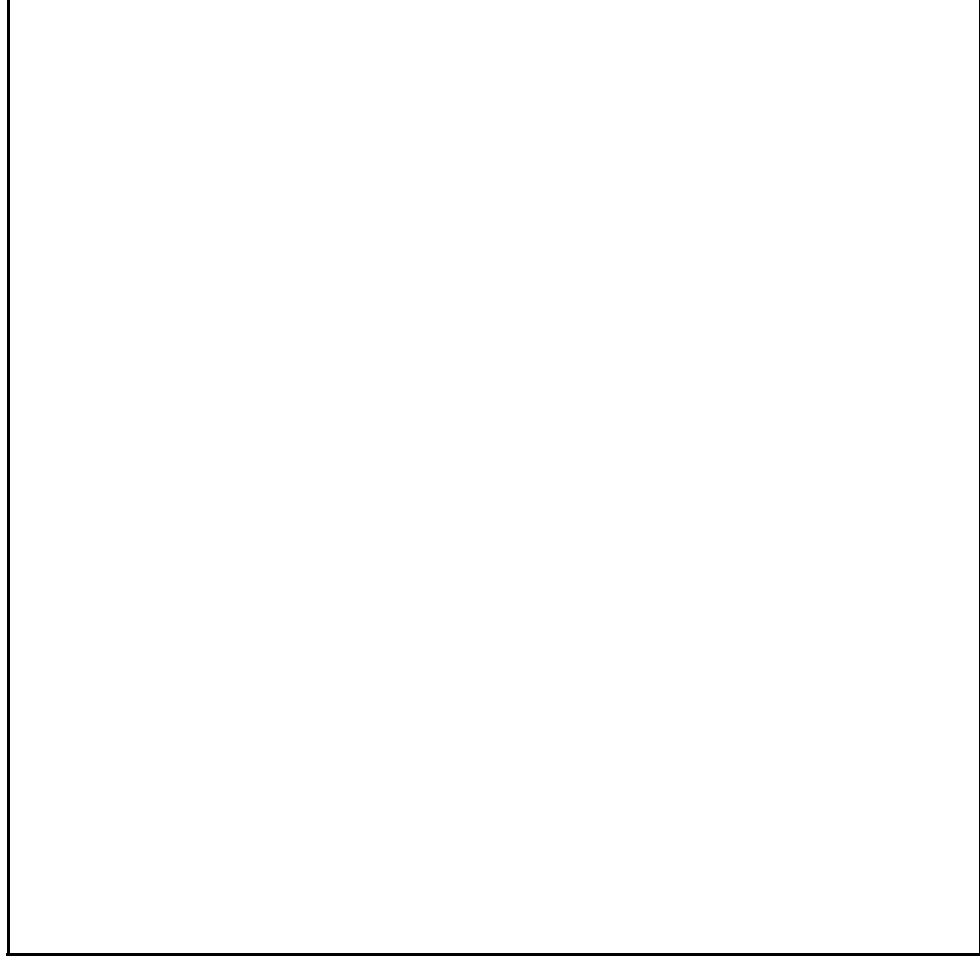
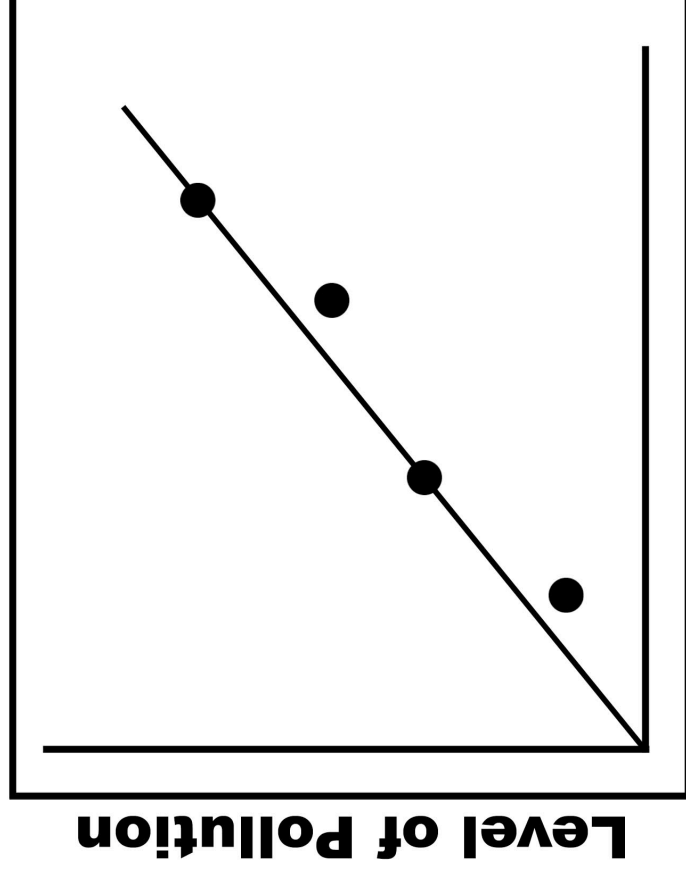




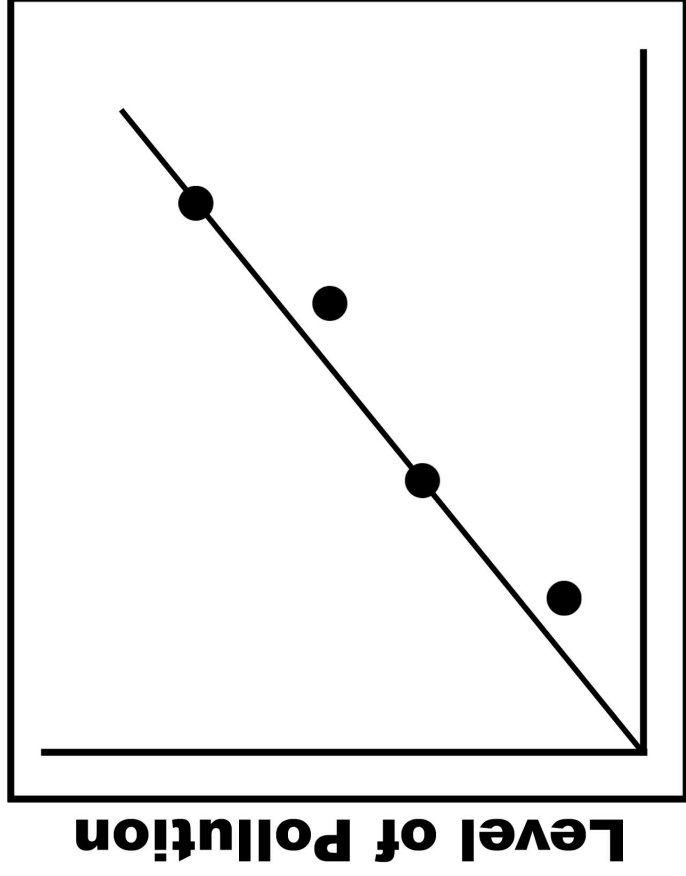
FLX Railway System

**Locating this huge
incinerator between Lakes
Seneca and Cayuga is
economic and
environmental madness**

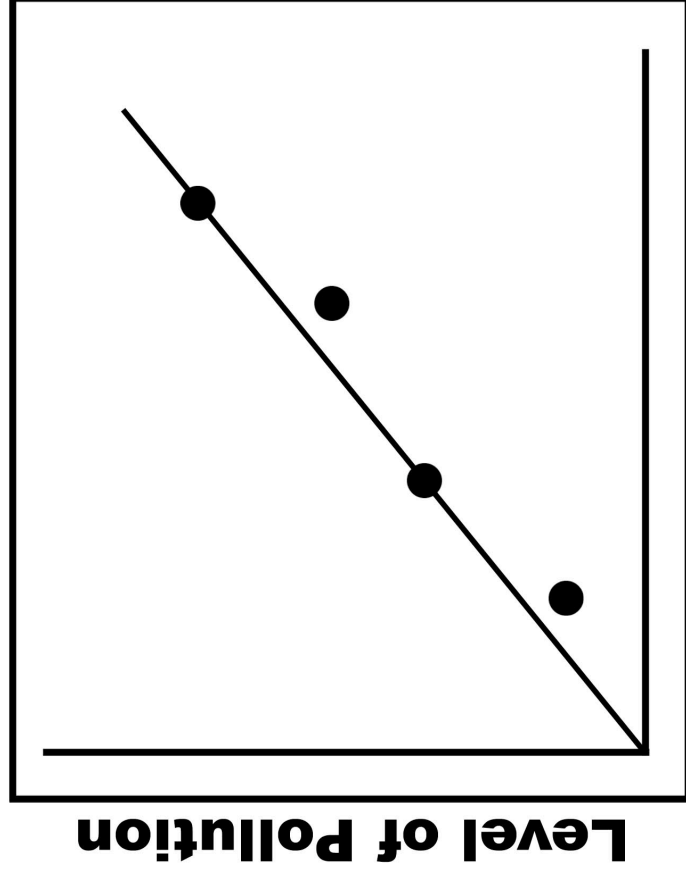
THE BAD LAW



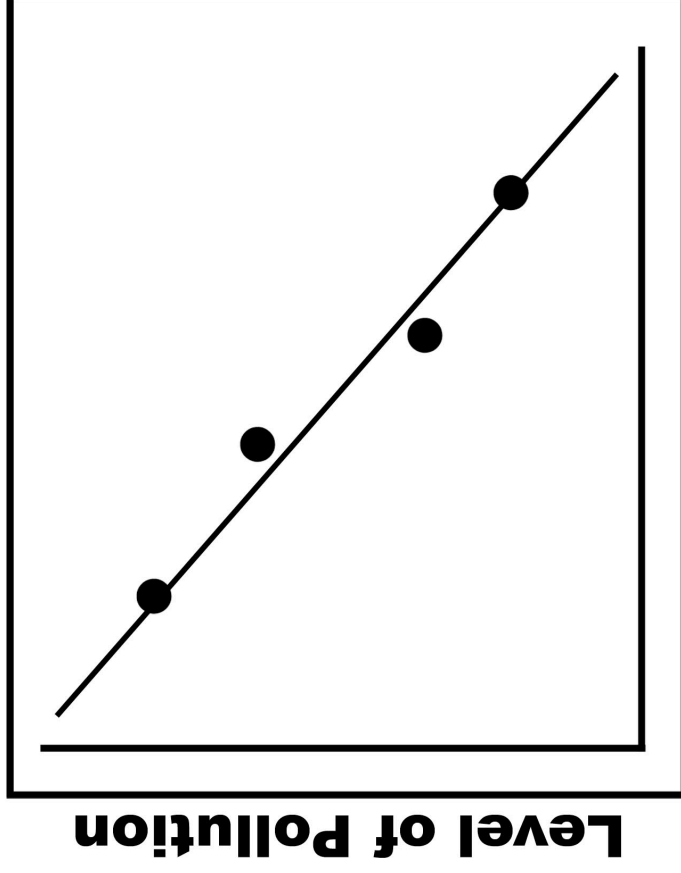
THE BAD LAW



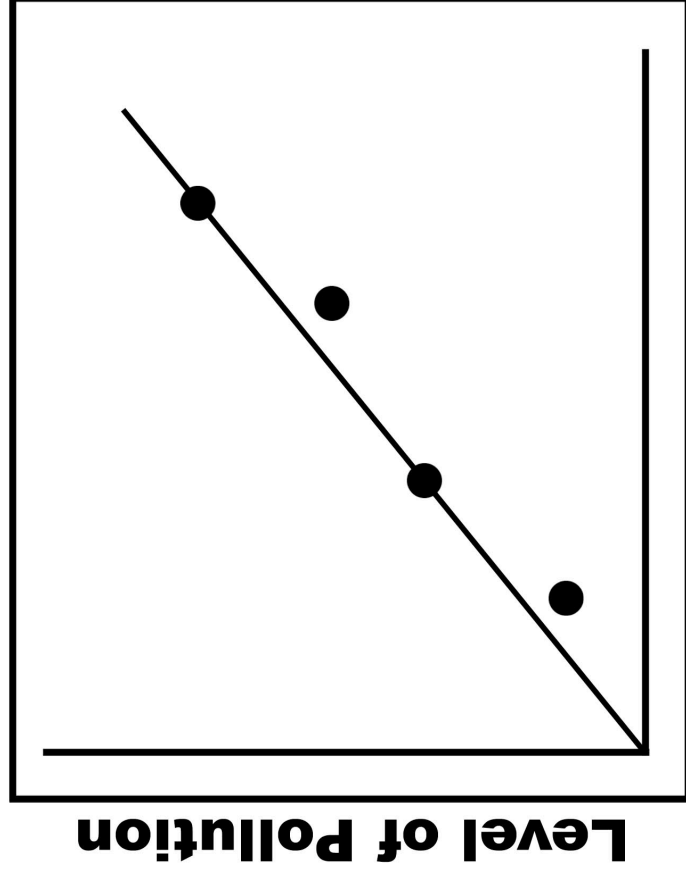
THE BAD LAW



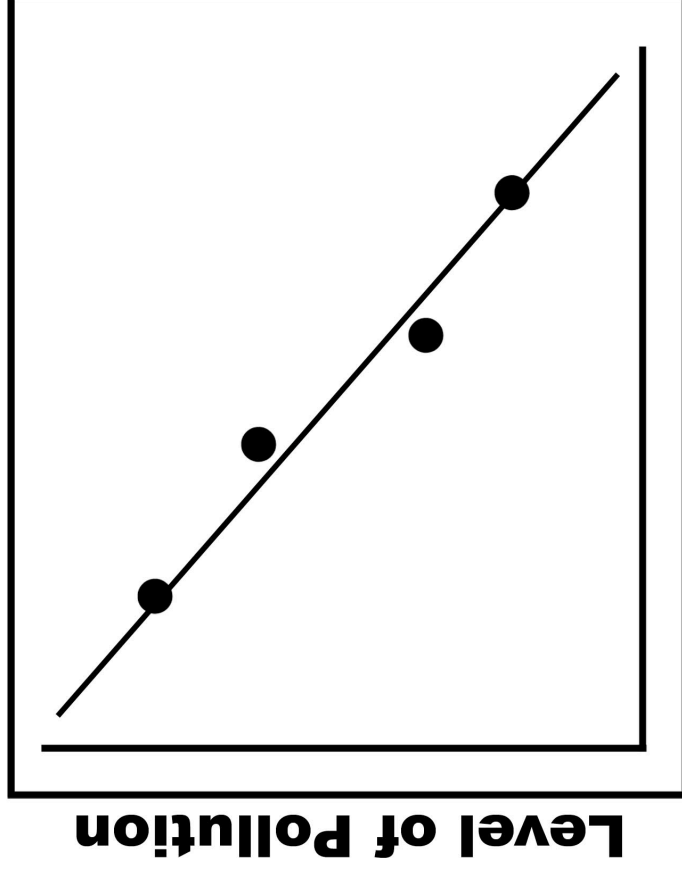
THE GOOD LAW



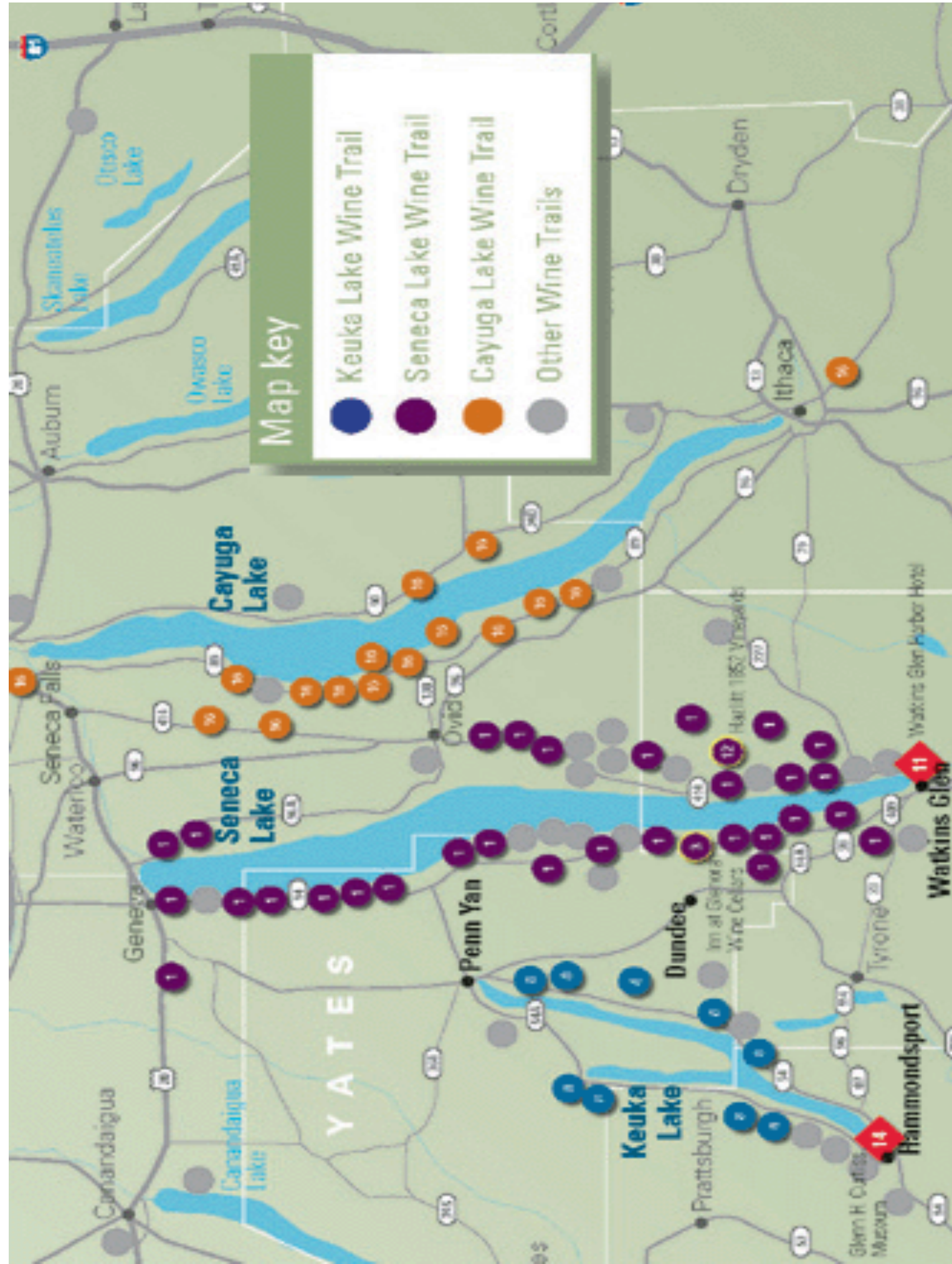
THE BAD LAW



THE GOOD LAW



**Incineration is not good for
tourism**



**The Wine and Tourism Industry Brings in
\$4.8 Billion to New York State Annually
And supports over 59,000 jobs**



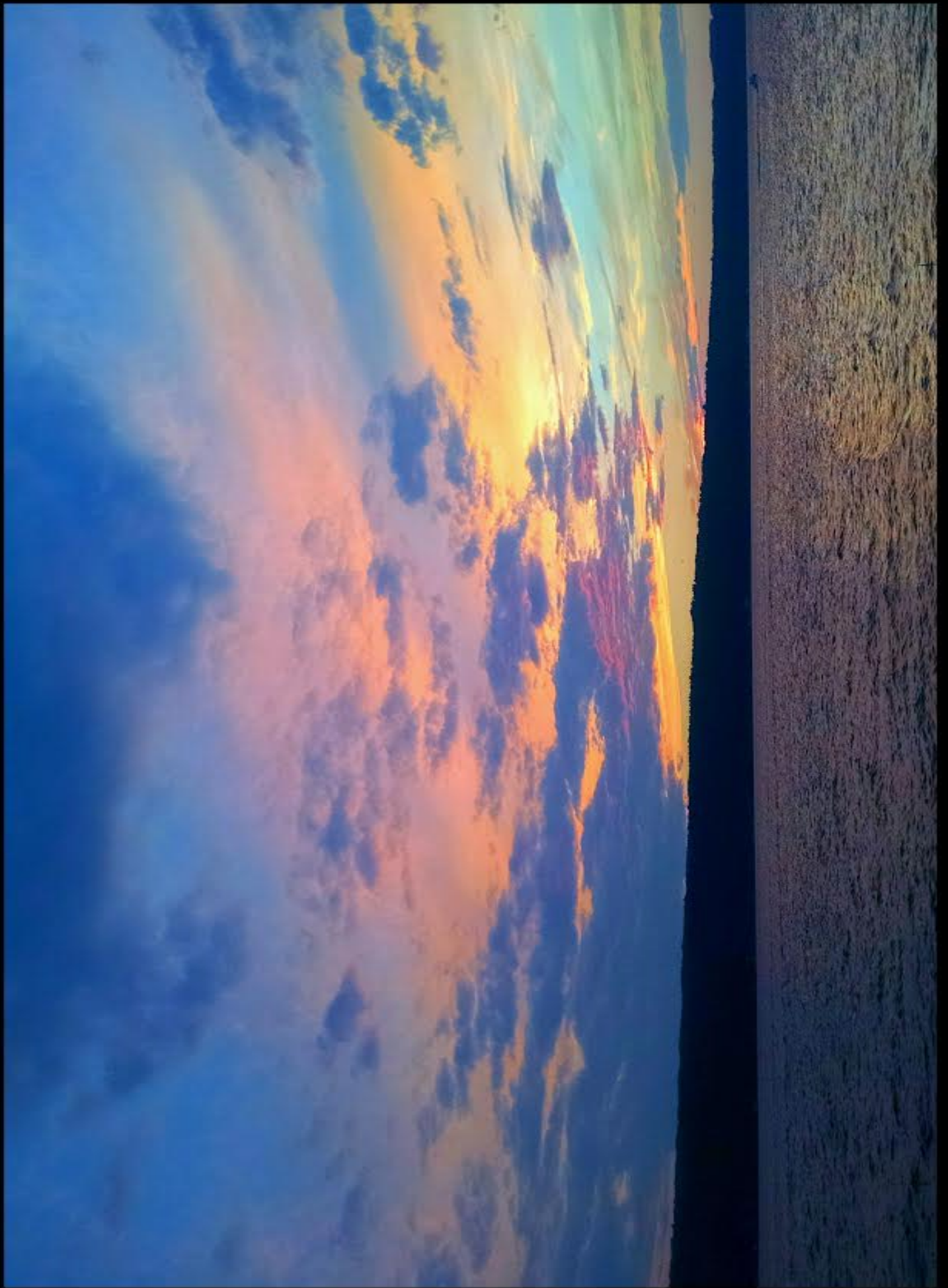


SENECA LAKE:

- Contains 4.2 Trillion Gallons of Fresh Water**

**It is the Largest Fresh Water Body
Solely within New York State Borders
-It serves as a Drinking Water Source
for 100,000 people**

- Seneca Lake is currently the saltiest
of all Finger Lakes.**



Incinerators put many highly toxic and persistent substances into the air



AIR EMISSIONS

• CO₂ +

H₂O

• ACID

GASES:

HCl, HF, SO₂

NO_x

• **TOXIC METALS:**

Pb, Cd, Hg, As, Cr

etc

• **NEW**

COMPOUNDS:

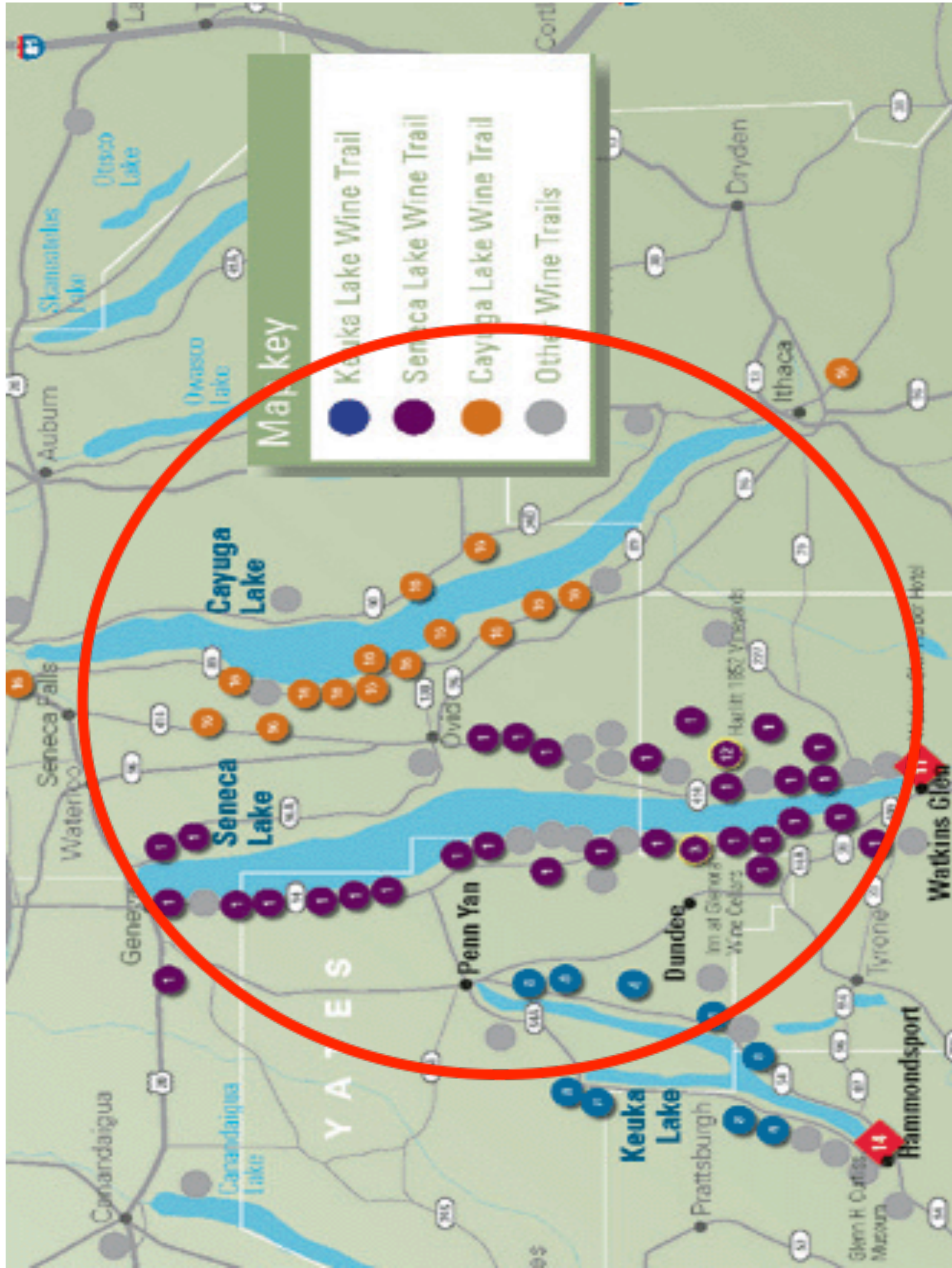
PCDDs (DIOXINS)

PCDFs (FURANS)

PCB's

ETC

Cayuga Lake and Seneca Lake represent two very large catchment areas for these toxic pollutants



Methyl Mercury
bioconcentrates up the
aquatic food chain

MERCURY

- Janet Raloff writing in *Science News* in 1991, stated that
- “as little as a **third of gram of mercury** could contaminate a 25 acre to the point that the largest fish would be unfit to eat by pregnant women”

Janet Raloff, "Mercurial Risks From Acid's Reign," *SCIENCE NEWS* Vol. 139 (March 9, 1991), pgs. 152-156.



The Syracuse (OCRRA) Trash Incinerator

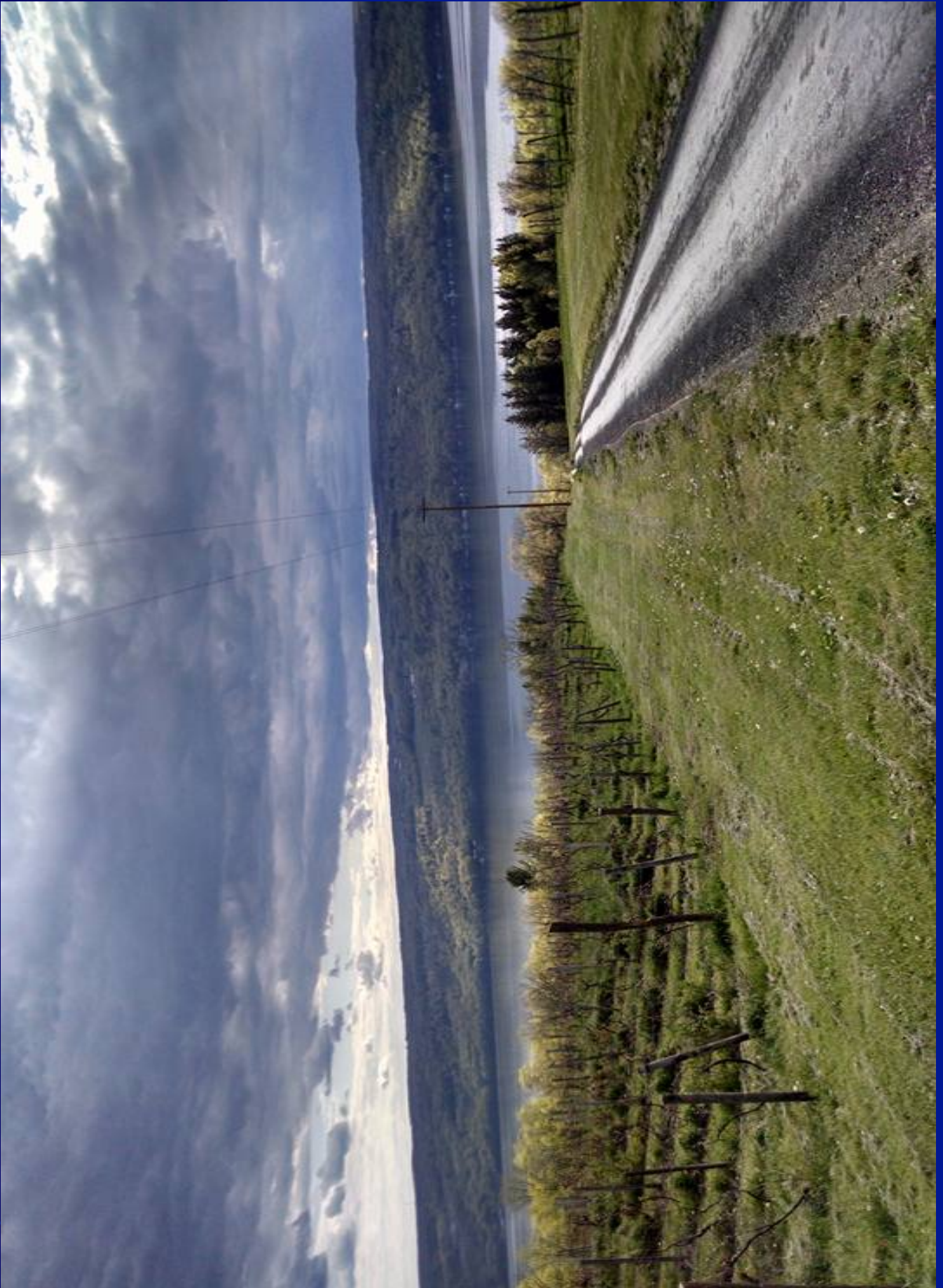
MERCURY

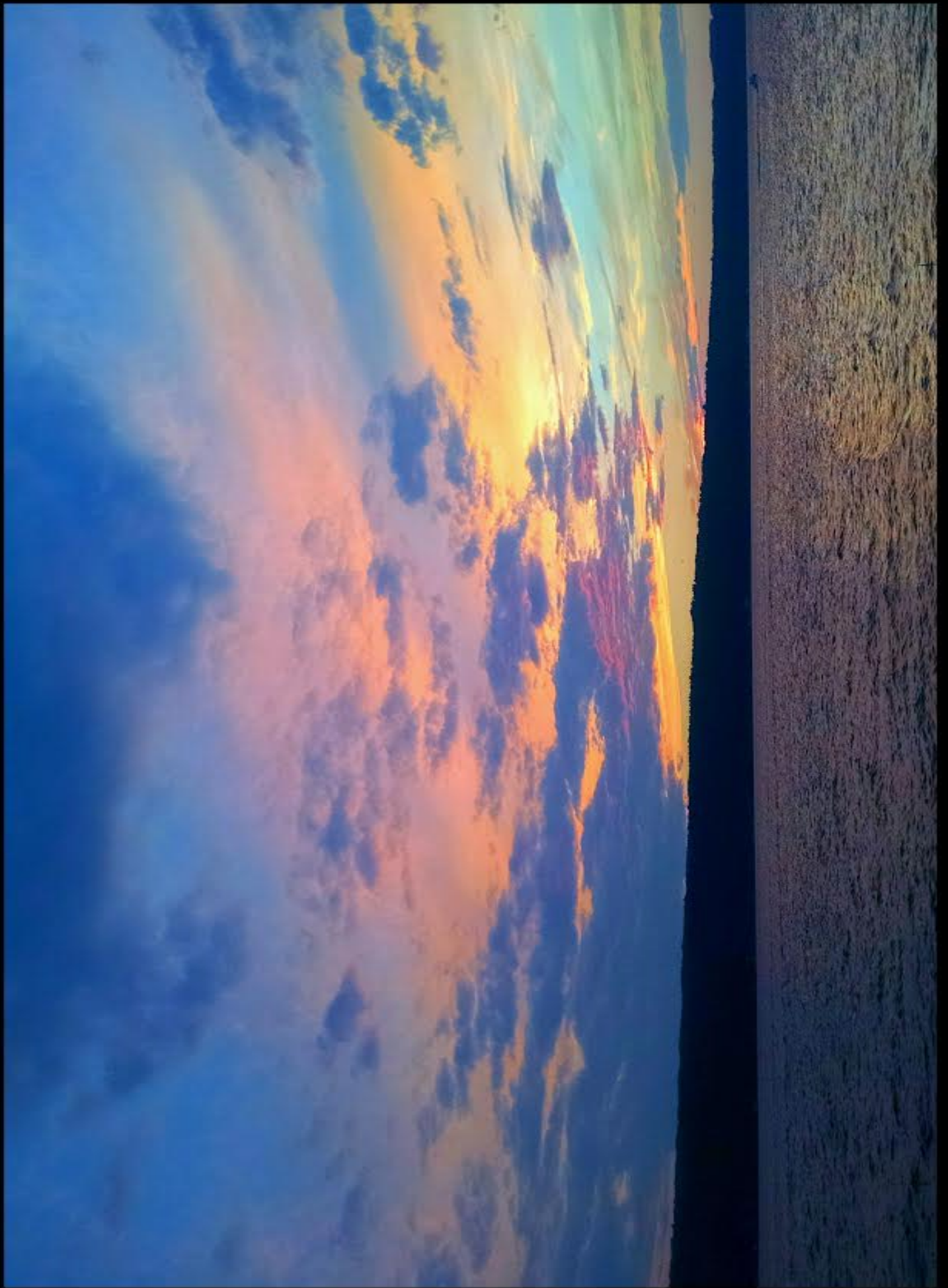
- In 1999, Syracuse incinerator put out 107 pounds of mercury = 48,578 grams.
- In 2009, it put out about 2 pounds = 1000 grams mercury
- The Romuls incinerator will be about 5 times larger than the Syracuse incinerator

MERCURY

- "A little more than a mile east of the OCRRA (Syracuse) waste incinerator, walleye and pickerel in tiny Glacier Lake in Clark Reservation State Park are swimming around with elevated levels of mercury. According to tests conducted by mercury expert Charles T. Driscoll Jr., an SU professor,
 - **six out of seven pickerel and two out of six walleye had mercury concentrations above the EPA guidelines for consumption.**
 - **Glacier Lake, a glacial plunge pool, has little or no watershed and gets virtually all its mercury from airborne sources...** There is no proof that mercury in the fish came from the incinerator — that would require air sampling — but Driscoll said the facility is a likely source as it is the closest discharger...
 - **Unlike most Northeastern lakes, where mercury deposits have declined since the 1980s, Glacier Lake sediments show rising mercury levels since the incinerator was built, Driscoll said." Syracuse Post Standard, Nov 20, 2009**

Dioxins also bioconcentrate
up the aquatic food chain





**Incineration is not good for
agriculture**

