Capannori:
The Heart of Zero Waste

Paul Connett, PhD

Executive Director (AEHSP)

AmericanHealthStudies.org

pconnett@gmail.com

Capannori, Nov 21, 2010

- Since 1985, I have given nearly 3000 presentations on waste to communities in 54 countries, including
- 49 states in the US,
- 7 provinces in Canada,
- 191 cities in Italy...

Paul Connett ha parlato in 191 citta’

2010

2010 has been a very busy year for me!

Zero Waste:
Theory & Practice Around the World

Paul Connett, PhD
Executive Director
American Environmental Health
Studies Project (AEHSP)
www.AmericanHealthStudies.org
pconnett@gmail.com

United Nations, Jan 12, 2010

Zero Waste:
A Key Stepping Stone to Sustainability

Paul Connett, PhD

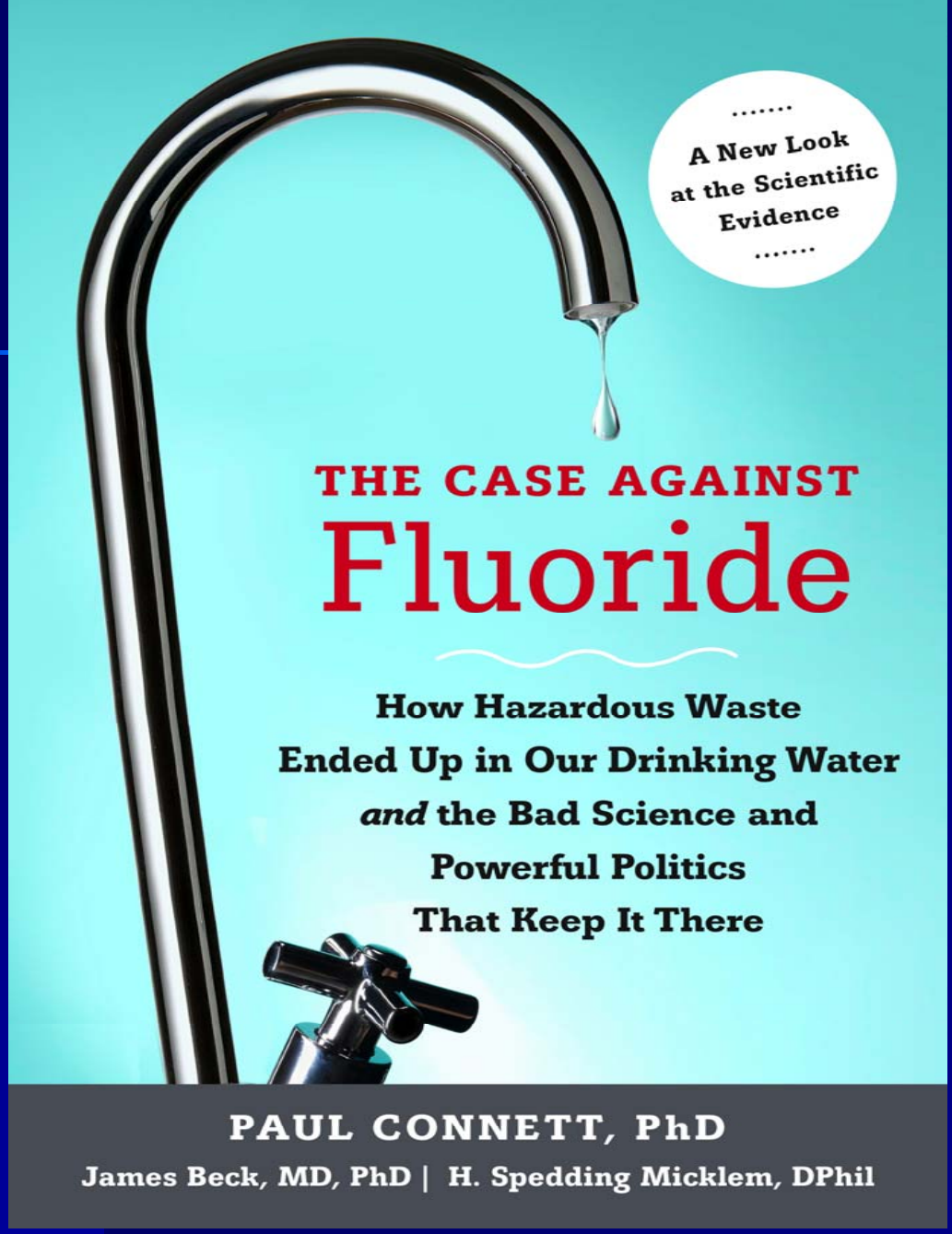
Executive Director

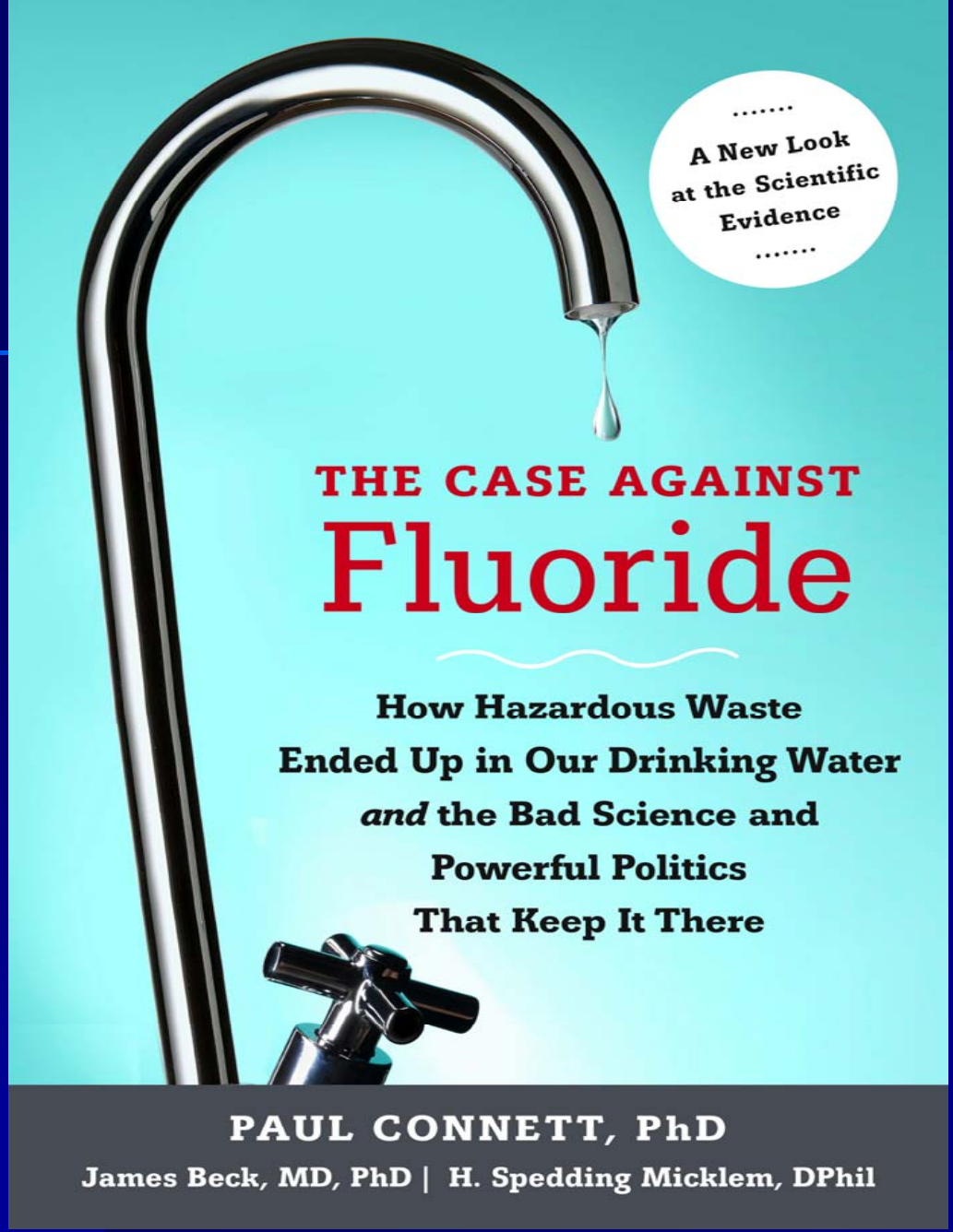
American Environmental Health Studies Project (AEHSP)

www.AmericanHealthStudies.org

pconnett@gmail.com

United Nations, May 5, 2010


A New Look at the Scientific Evidence
THE CASE AGAINST
Fluoride
How Hazardous Waste Ended Up in Our Drinking Water *and* the Bad Science and Powerful Politics That Keep It There
PAUL CONNETT, PhD
James Beck, MD, PhD | H. Spedding Micklem, DPhil



Book published
by Chelsea Green

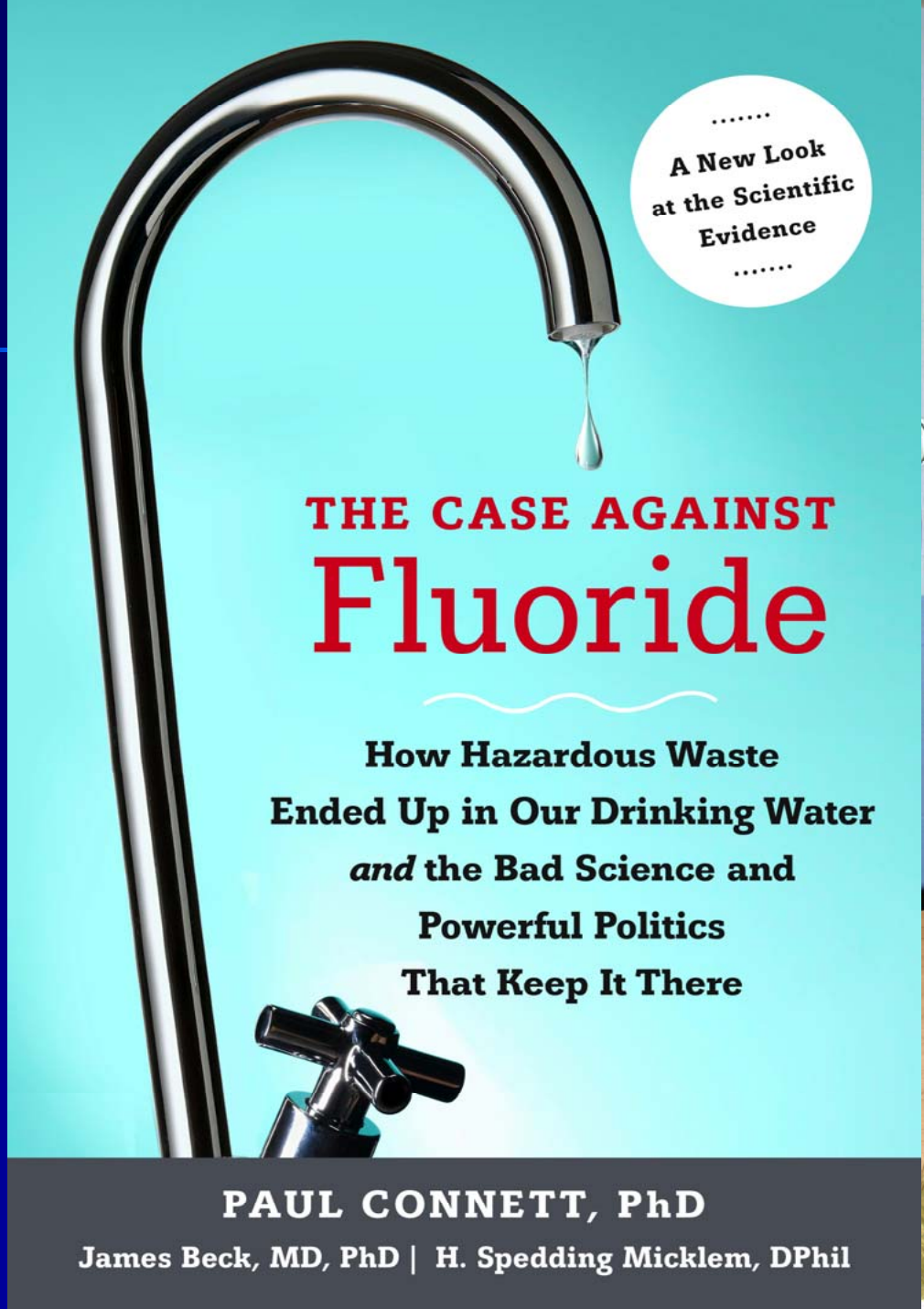
October, 2010

Can be ordered
on Amazon.com

Meanwhile, see

FluorideAlert.org

for more information


A New Look at the Scientific Evidence
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PAUL CONNETT, PhD
James Beck, MD, PhD | H. Spedding Micklem, DPhil


Brave New Books, Austin, Texas
Nov

Food, Zero Waste & Sustainability

Paul Connett, PhD

Executive Director

AmericanHealthStudies.org

pconnett@gmail.com

European Parliament,

Brussels, Oct 28, 2010

A Sustainable Waste Strategy

Paul Connett, PhD

Executive Director (AEHSP)

AmericanHealthStudies.org

pconnett@gmail.com

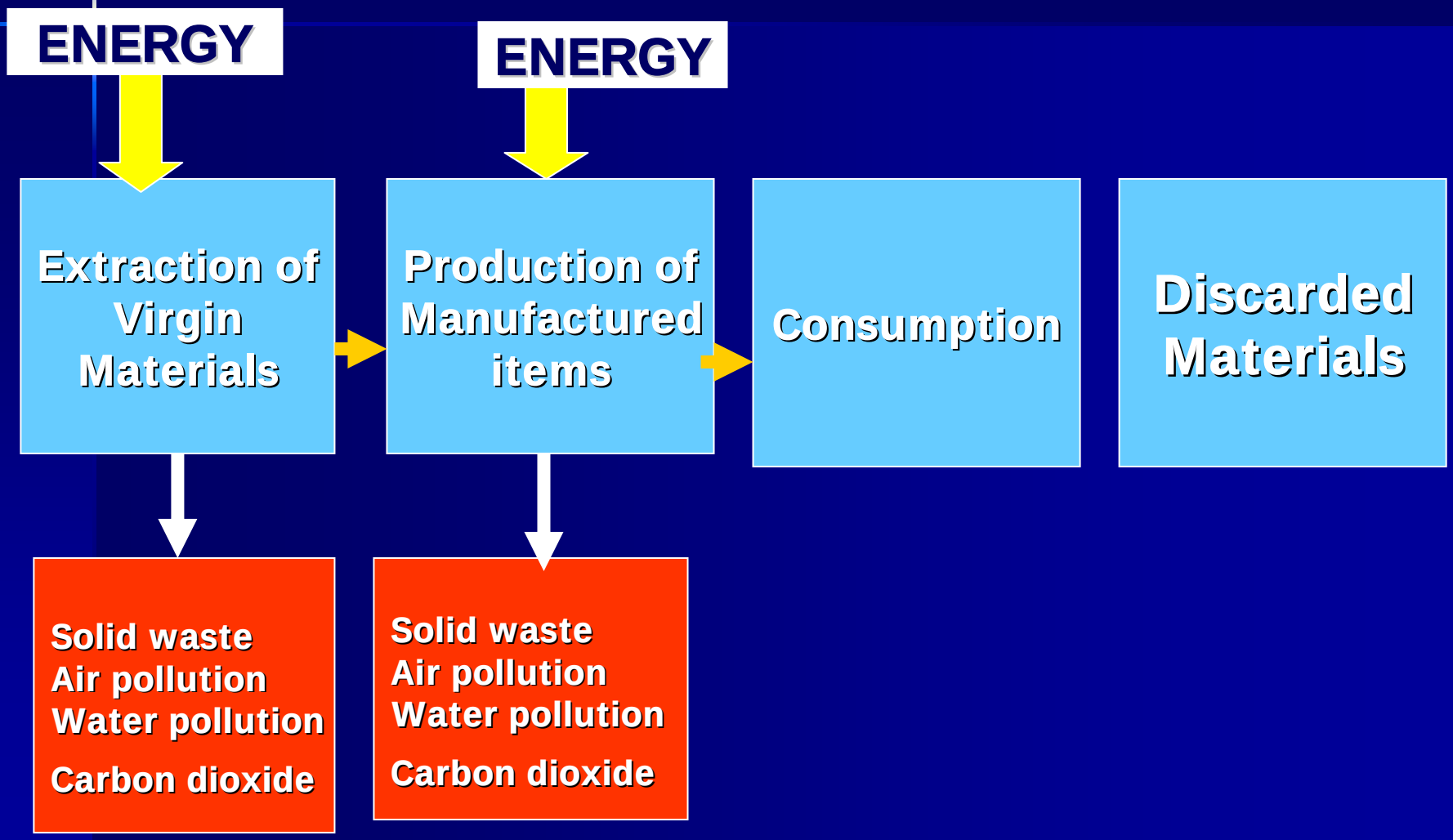
House of Commons,

London, Nov 2, 2010

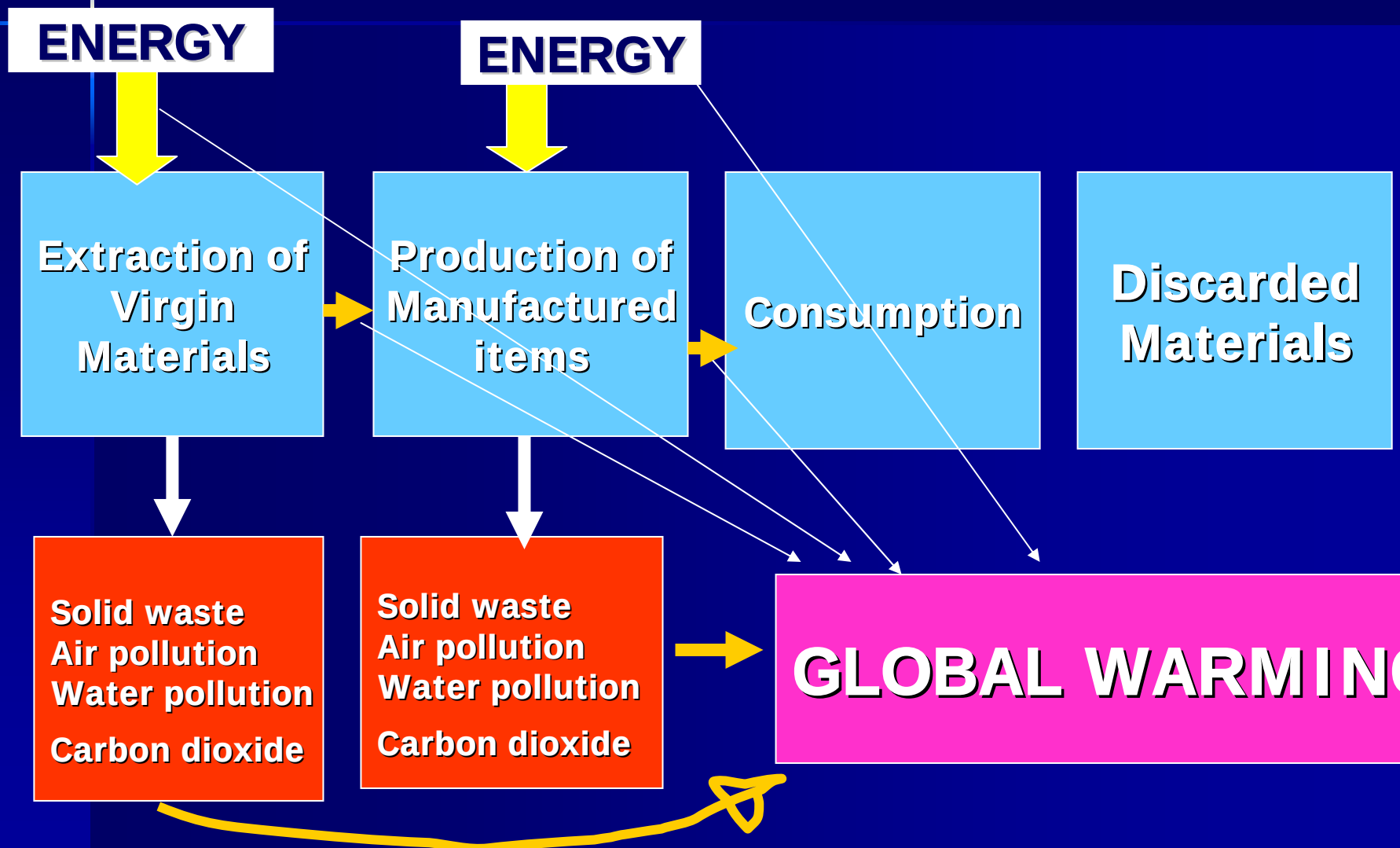
Sustainability

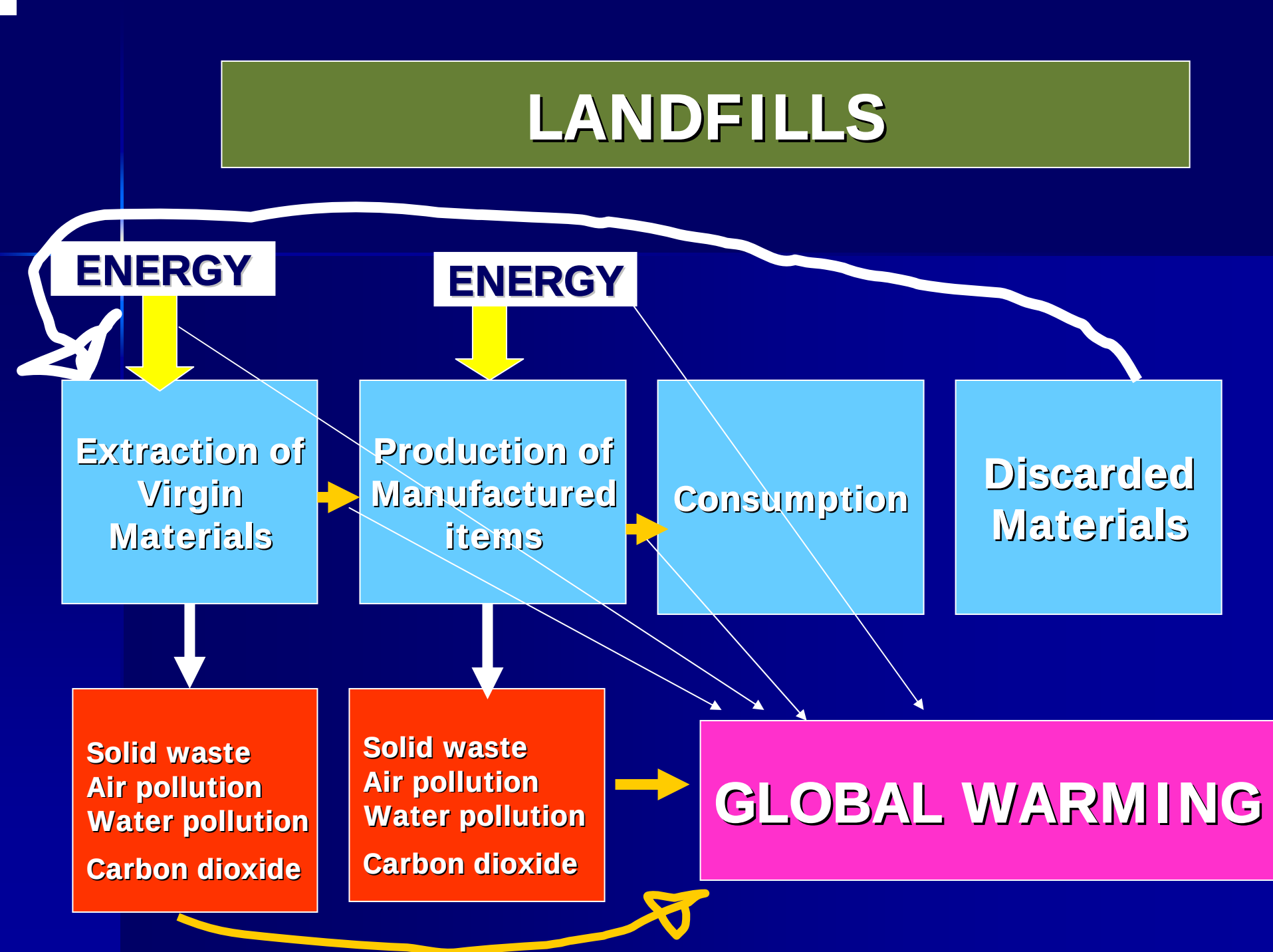
- We would need FOUR planets if every one consumed as much as the average American
- We would need TWO planets if every one consumed as much as the average European
- Meanwhile, India, China etc. are copying our consumption patterns
- Something has got to change and the best place to start is with waste

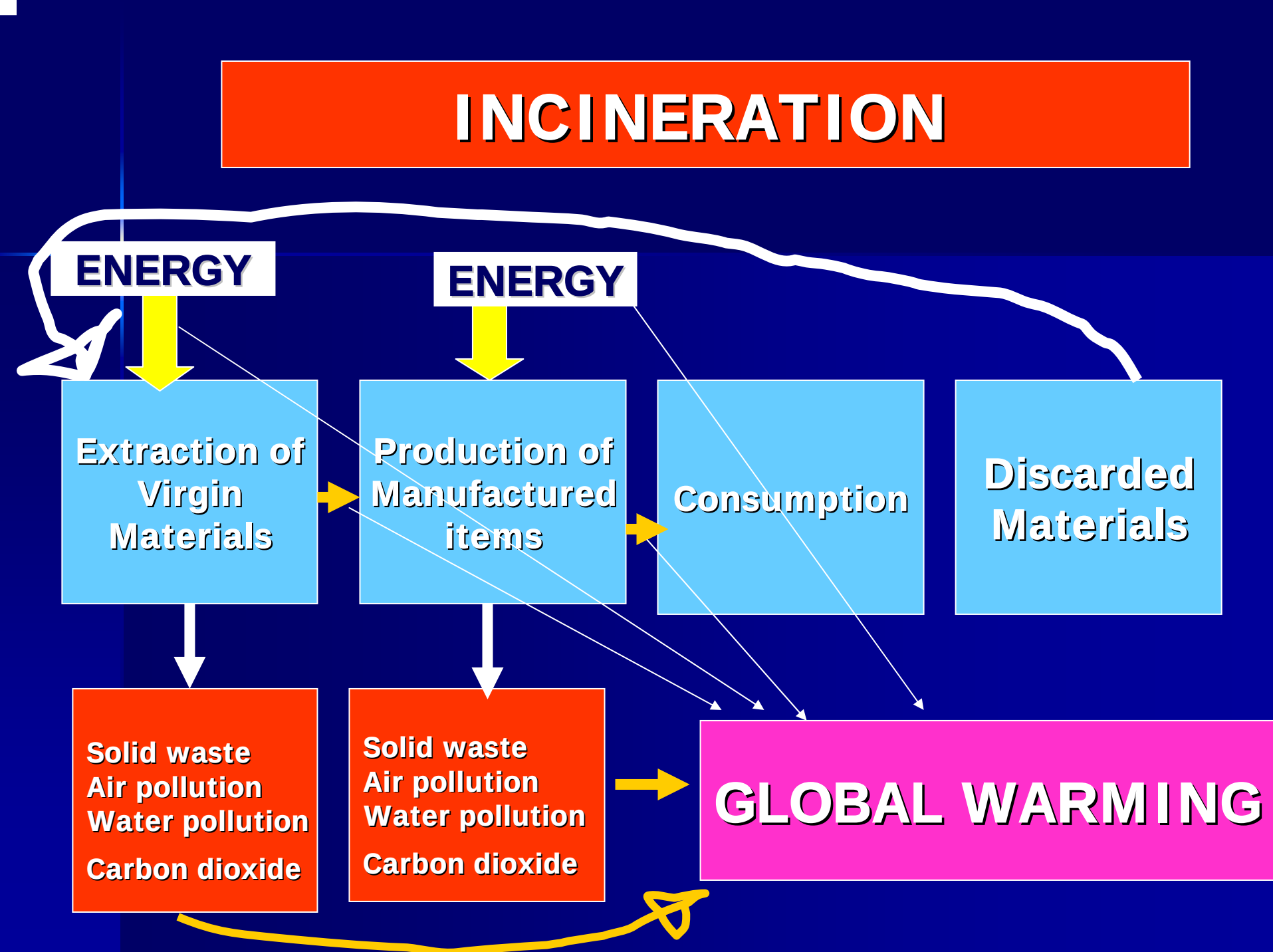
A LINEAR SOCIETY



A LINEAR SOCIETY

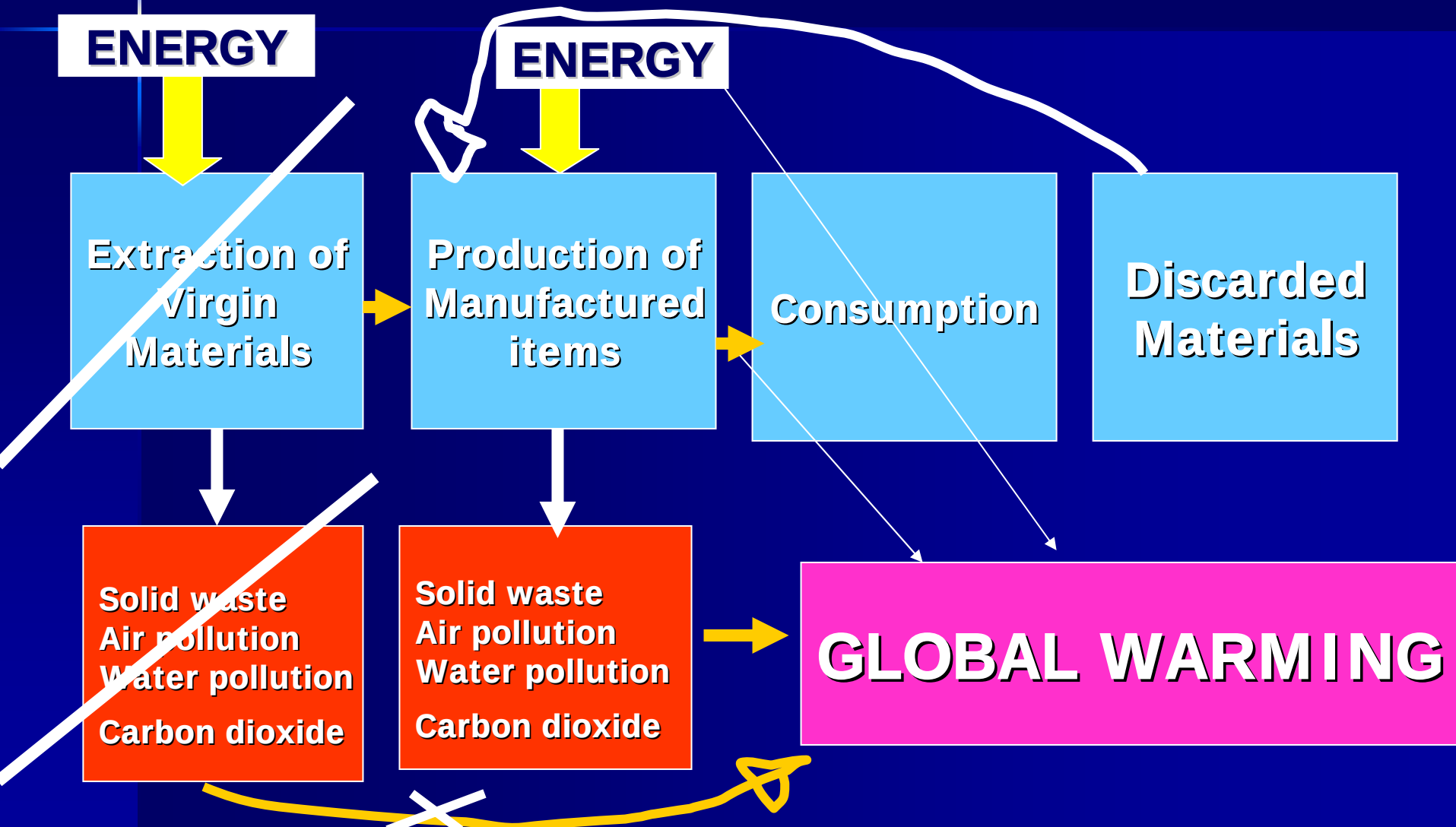



LANDFILLS
ENERGY
ENERGY
Extraction of Virgin Materials
Production of Manufactured items
Consumption
Discarded Materials
Solid waste
Air pollution
Water pollution
Carbon dioxide
Solid waste
Air pollution
Water pollution
Carbon dioxide
GLOBAL WARMING

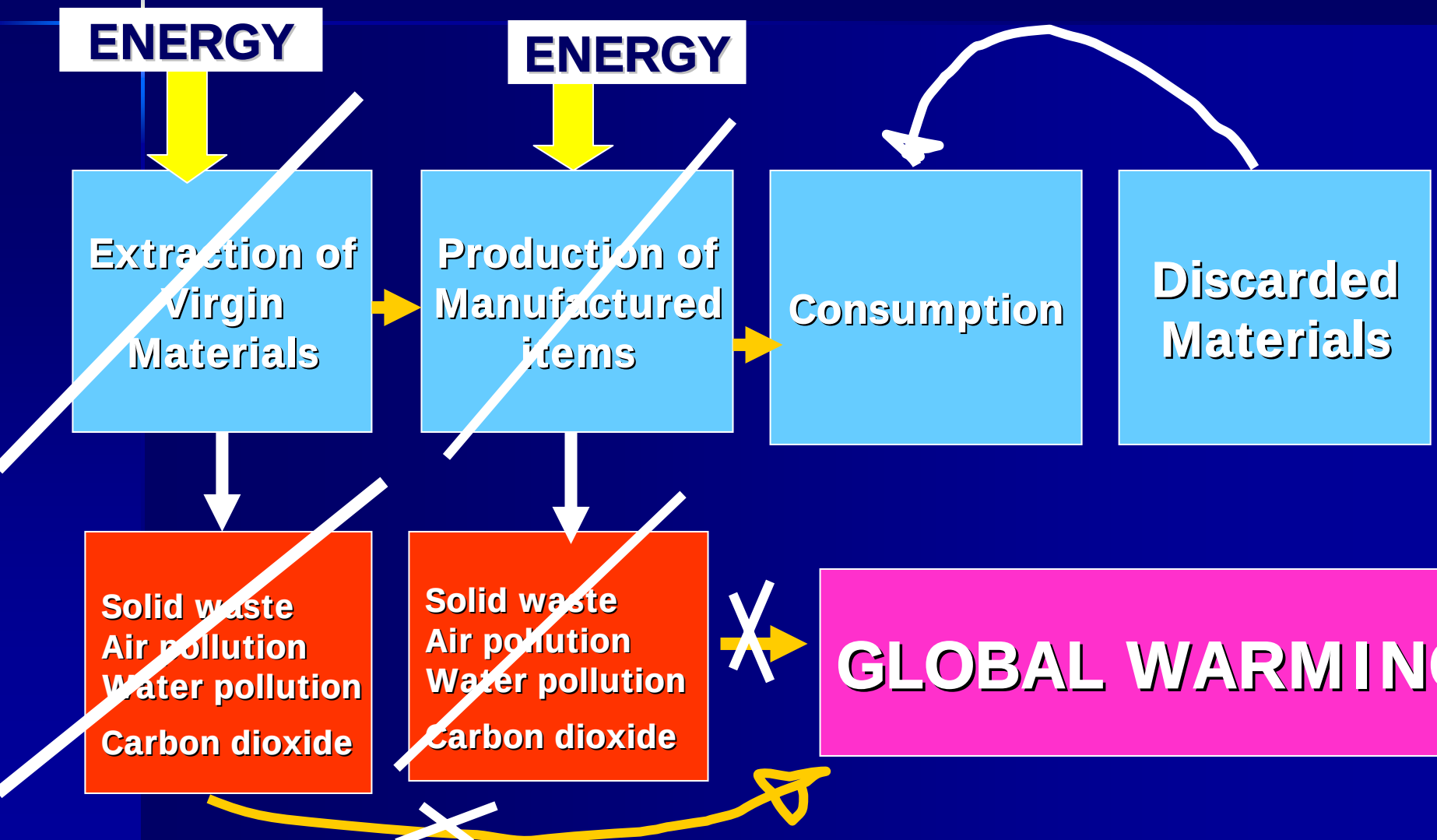

INCINERATION
ENERGY
ENERGY
Extraction of Virgin Materials
Production of Manufactured items
Consumption
Discarded Materials
Solid waste
Air pollution
Water pollution
Carbon dioxide
Solid waste
Air pollution
Water pollution
Carbon dioxide
GLOBAL WARMING

Both landfills and incinerators represent business as usual – NEITHER are sustainable

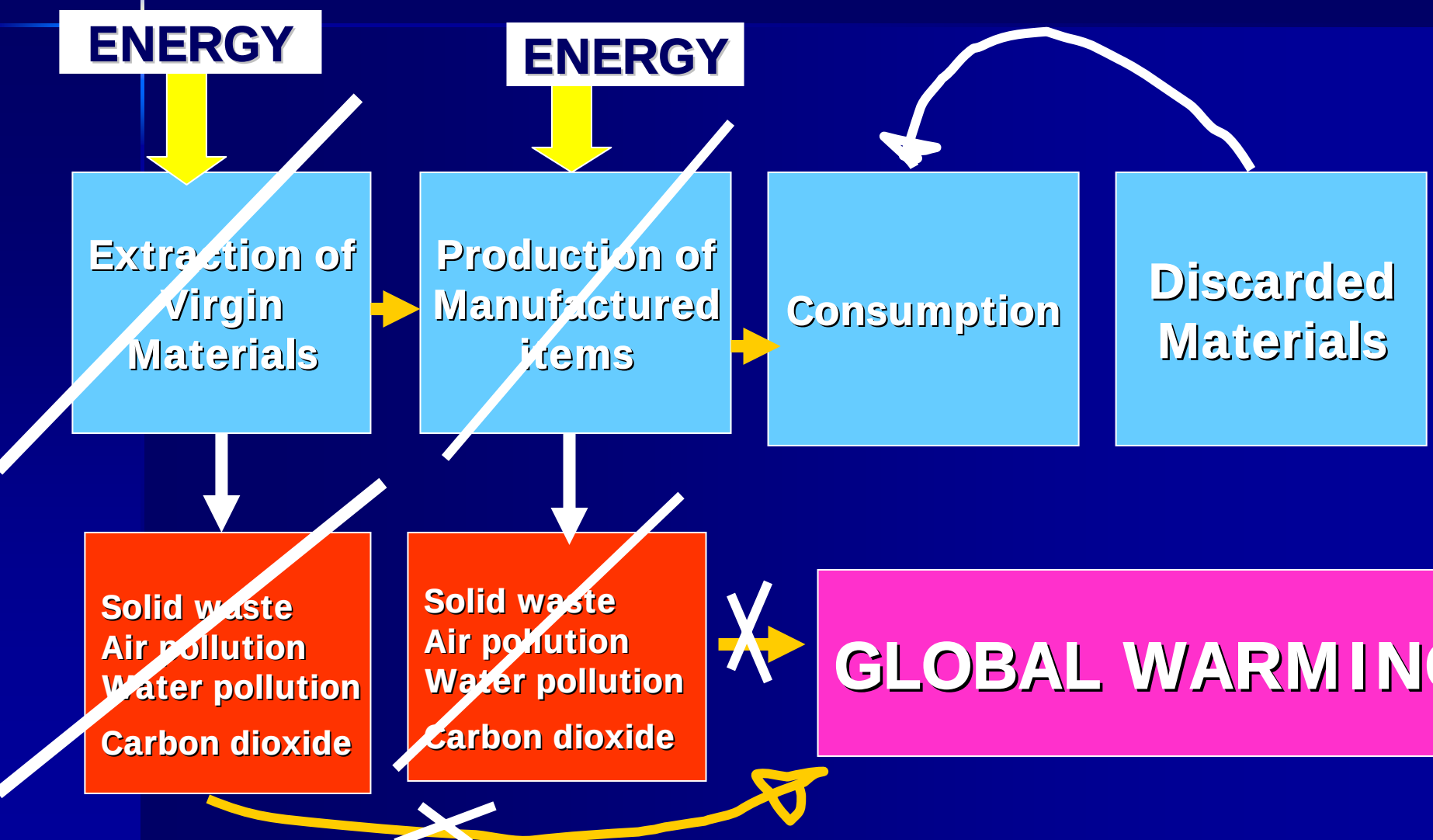
RECYCLING OF MATERIALS



REUSE OF OBJECTS



COMPOSTING


ENERGY
ENERGY
Extraction of Virgin Materials
Production of Manufactured items
Consumption
Discarded Materials
Solid waste
Air pollution
Water pollution
Carbon dioxide
Solid waste
Air pollution
Water pollution
Carbon dioxide
GLOBAL WARMING

COMPOST

The modern incinerator is attempting to perfect a bad idea

- Our task in the 21st Century is not to find better ways to destroy discarded materials
- But to stop making packaging and products that have to be destroyed!

The Waste problem will not be solved with better technology

- But with
- Better organization
- Better education
- and better industrial design

The ZERO WASTE 2020 strategy

Zero Waste can be approached with a series of simple steps

- which are
- Practical
- Cost effective and
- Politically acceptable

SUMMARY
10 steps to Zero Waste

Source Separation

Source Separation

Door to Door Collection

Source Separation

Door to Door Collection

Composting

Impianto di Compostaggio

Slide from Enzo Favoino

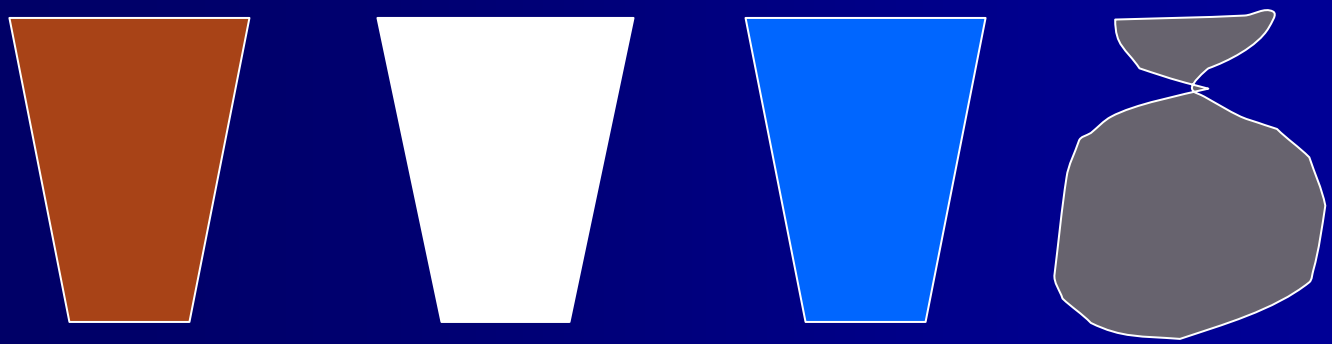
Source Separation

Door to Door Collection

Composting

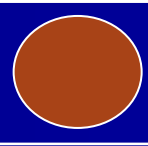
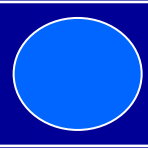
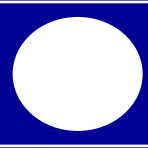
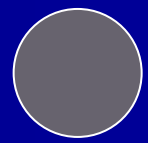
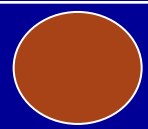
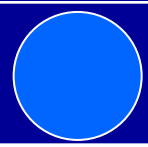
Recycling

I “Fantastici 4”



Capannori, Italia

Capannori

LUNEDI	ORGANICO	
MARTEDI	MULTIMATERIALE	
MERCOLEDI	CARTA	
GIOVEDI	FRAZIONE RESIDUA	
VENERDI	ORGANICO	
SABATO	MULTIMATERIALE	

Source Separation

Door to Door Collection

Composting

Recycling

Reuse, Repair & Community Center

Source Separation

Door to Door Collection

Composting

Recycling

Reuse, Repair & Community Center

Waste Reduction Initiatives

Source Separation

Door to Door Collection

Composting

Recycling

Reuse, Repair & Community Center

Waste Reduction Initiatives

Economic Incentives

Source Separation

Door to Door Collection

Composting

Recycling

Reuse, Repair & Community Center

Waste Reduction Initiatives

Economic Incentives

Residual Separation & Research Center

Source Separation

Door to Door Collection

Composting

Recycling

Reuse, Repair & Community Center

Waste Reduction Initiatives

Economic Incentives

Residual Separation & Research Center

Better Industrial Design

Source Separation

Door to Door Collection

Composting

Recycling

Reuse, Repair & Community Center

Waste Reduction Initiatives

Economic Incentives

Residual Separation & Research Center

Better Industrial Design

Temporary Landfill

Source Separation

Door to Door Collection

Composting

Recycling

Reuse, Repair & Community Center

Waste Reduction Initiatives

Economic Incentives

Residual Separation & Research Center

Better Industrial Design

Temporary Landfill

2020

5. Reuse, Repair & Deconstruction

Value of Los Angeles discarded materials

Market Categories	%	Tons/Year	$/ton	$
1.Reuse Reusable items	2.0	72,000	550	39,600,000
2.Paper	[illegible]	792,000	20	15,840,000
3.Plant Debris	5.5	198,000	7	1,386,000
4.Putrescibles	17.0	612,000	7	4,284,000
5.Wood	4.0	144,000	8	1,152,000
6.Ceramics	13.0	468,000	4	1,872,000
7.Soils	10.0	360,000	7	2,520,000
8.Metals	4.0	144,000	40	5,760,000
9.Glass	2.0	72,000	10	720,000
10.Polymers	8.0	288,000	100	28,800,000
11.Textiles	2.0	72,000	20	1,440,000
12.Chemicals	0.5	18,000	15	270,000
No market (diapers, treated wood, mistakes)	10.0	360,000		0
TOTAL PER YEAR	100	3,600,000		$103,644,000

Reuse, Repair & Deconstruction

Urban Ore, Berkeley, California


URBAN ORE ECOPARK


SALE IS COM
A CASH REGISTE
2. NO REFUNDS WI
CASH REGISTER
3. NO REFUNDS AF
4. PLEASE BE REA
YOUR CASH REG
UPON REQU

- Urban Ore operating for 30 years

- Grossing $3 million per year
- 27 full-time well-paid jobs

VIDEOS ONLINE

- Examples of Reuse and Repair Centers from California, Vermont, Nova Scotia and Australia
- AmericanHealthStudies.org

Reuse, Repair, Research & Community Center

Resource Recovery Park

Reuse, Repair, Research & Community Center

Resource Recovery Park

Reuse, Repair, Research & Community Center

Building deconstruction businesses

Resource Recovery Park

Reuse, Repair, Research & Community Center

Building deconstruction businesses

Materials Recovery Facility for both domestic waste and commercial and non-hazardous industrial waste

Resource Recovery Park

Reuse, Repair, Research & Community Center

Building deconstruction businesses

Materials Recovery Facility for both domestic waste and commercial and non-hazardous industrial waste

Construction & Demolition Waste Recycling

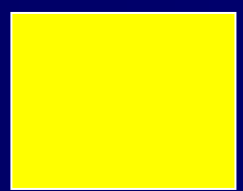
Resource Recovery Park

Reuse, Repair, Research & Community Center

Building deconstruction businesses

Materials Recovery Facility for both domestic waste and commercial and non-hazardous industrial waste

Construction & Demolition Waste Recycling



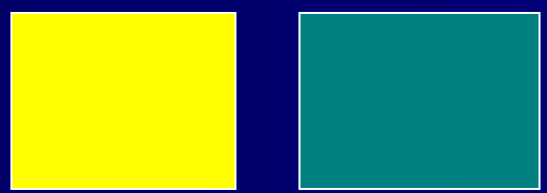
Resource Recovery Park

Reuse, Repair, Research & Community Center

Building deconstruction businesses

Materials Recovery Facility for both domestic waste and commercial and non-hazardous industrial waste

Construction & Demolition Waste Recycling



Resource Recovery Park

Reuse, Repair, Research & Community Center

Building deconstruction businesses

Materials Recovery Facility for both domestic waste and commercial and non-hazardous industrial waste

Construction & Demolition Waste Recycling

Resource Recovery Park

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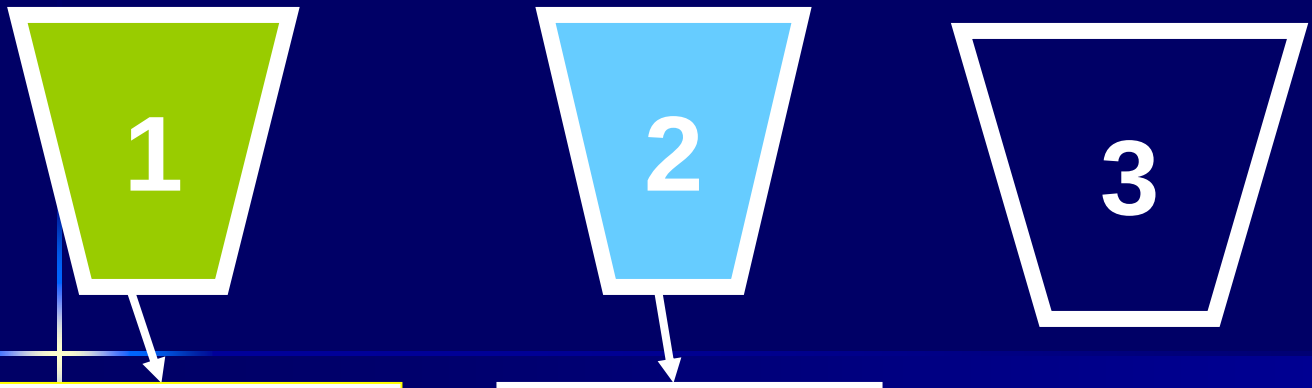
Construction & Demolition Waste Recycling

Businesses using recovered secondary materials to make new products



Composting Facility

Materials Recovery Facility

Residual Fraction

Resource Recovery Park

We have to minimize the residual fraction with…

1) Waste reduction initiatives
2) Economic incentives

6. Waste Reduction Initiatives

Ireland

- Government put a 15 cent tax on plastic shopping bags
- reduced use by 92% in one year!

Italy

In time collection of food from supermarkets and restaurants

Prof. Andrea Segre

Agriculture Dept.,

U. of Bolgna

andreasegre@unibo.it

Italy

- Several supermarket chains are providing dispensers which allow customers to refill shampoo and detergent bottles...

Effecorta,
A food store in Capannori, Tuscany, Italy

L'esperienza effecorta

www.effecorta.it

95% of products come from within 70 km of store

60 dispensing systems for solids

60 taps for liquids

No plastic used for shopping bags

- Un pizzico di creatività a monte può far risparmiare milioni a valle

7. Economic Incentives

“Pay as you throw” system

“Pay as you throw” system

free

“Pay as you throw” system

free

free

“Pay as you throw” system

free

free

The more you make, the more you pay!

Italy

- Villafranco d'Asti (Piedmont, population = 30,000) has reached 85% diversion (Roberto Cavallo)

Spain

- Usurbil in Basque Country
- Has gone from 28% to 86% in 7 months

“Save as you throw” system

“Save as you throw” system

free

“Save as you throw” system

free

free

“Save as you throw” system

free

free

The less you make, the more you save!

1

2

$

Waste Reduction Initiatives

Composting Facility

Materials Recovery Facility

Residuals ?

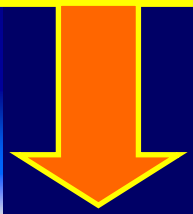
Reuse & Repair & Deconstruction

8. Residual Separation & Research Facility

RESIDUAL SEPARATION & RESEARCH FACILITY

- 1. Built at entrance to landfill
- 2. No material can enter landfill without it being separated and screened
- 3. More material recycled
- 4. Toxics removed and identified
- 5. Dirty organics biologically stabilized
- 6. Non-recyclable materials STUDIED

RESIDUAL SCREENING FACILITY



DIRTY ORGANIC FRACTION

MORE RECYCLABLES

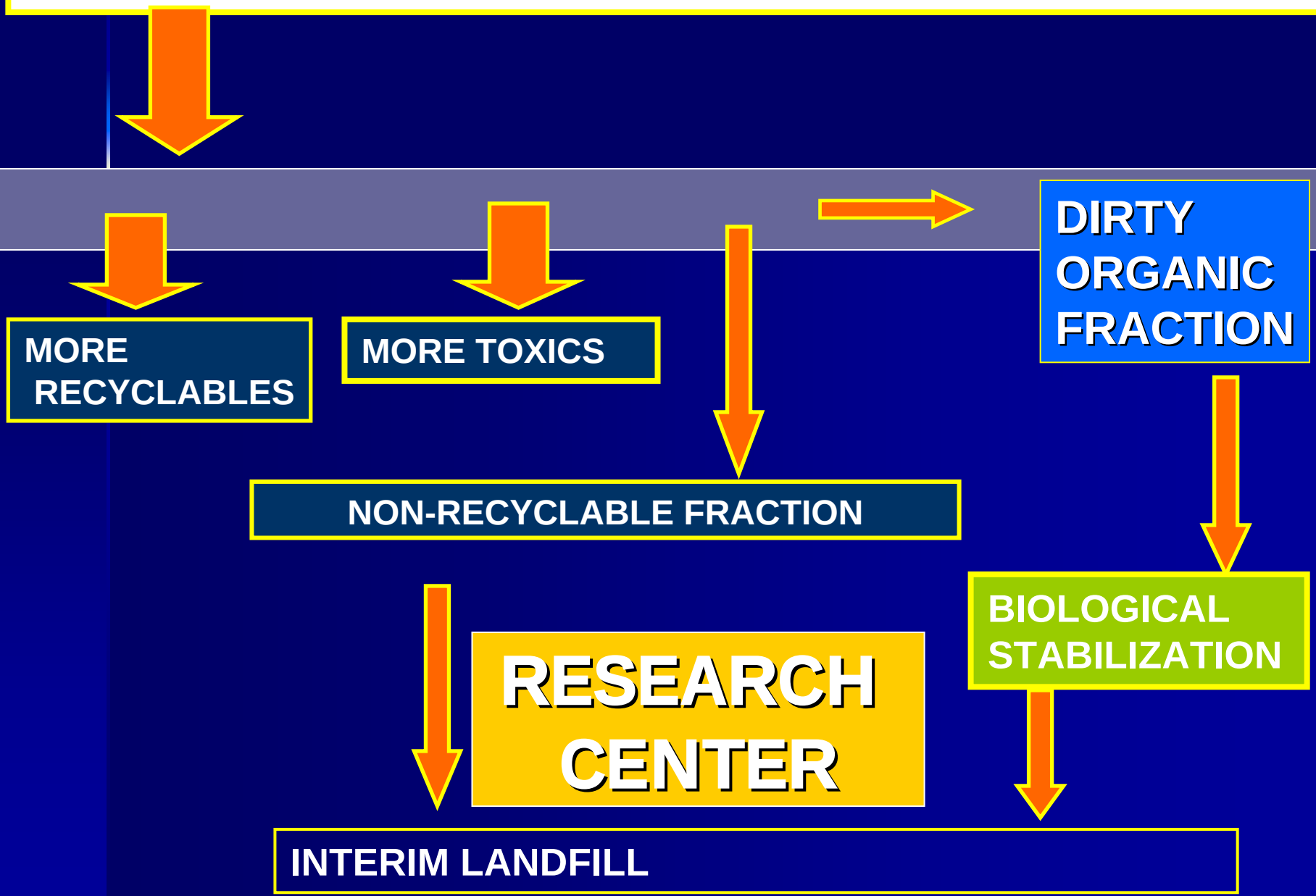
MORE TOXICS

This type of facility is currently running in NOVA SCOTIA, Canada

BIOLOGICAL STABILIZATION

INTERIM LANDFILL for non-recyclable and stabilized organic fraction

RESIDUAL SCREENING & RESEARCH FACILITY



NON-RECYCABLE MATERIALS

Local University

Or Technical College

ZERO WASTE RESEARCH CENTER

Zero Waste Research Center

- TASKS:
- Improve capture rate of recyclables etc.
- Collect best practices on waste avoidance/reduction measures
- Develop local uses for some materials
- Recommend better industrial designs to industry on packaging and products

The Message to Industry:

- If we can't reuse it, recycle it or compost it,
- Industry shouldn't be making it
- We need better industrial design for the 21st Century

Zero Waste Research Center started in Capannori, Italy Jan 23, 2010

FRAZIONE RESIDUA - Capannori Porta a Porta

1.	Tessili e cuolo	16.52 %
2.	Pannolini	13.95 %
3.	Materiale organico da cucina	10.56 %
4.	Altra plastica: non imballo	9.98 %
5.	Imballaggi cellulosici poliaccopiati	8.05 %
6.	Imballaggi poliaccopiati in plastica	7.45 %
7.	Imballaggi flessibili in plastica	6.81 %
8.	Materiale organico da giardino	4.64 %
9.	Imballaggi rigidi in plastica (non bottiglie)	3.23 %
10	Giornali (quotidiani e riviste)	2.54 %

- **FRAZIONE RESIDUA – Capannori**

1.	Tessili e cuoio	16.52 %
2.	Pannolini	13.95 %
3.	Materiale organico da cucina	10.56 %
4.		
5.		
6.		
7.		
8.		
9.		
10		

Questa e' l'analisi del 17 % che rimane dopo la separazione dell' 83 % del materiale raccolto porta a porta

9. Better Industrial Design

10. An interim landfill for biologically stabilized dirty organic fraction

70 - 80%

COMMUNITY RESPONSIBILITY

Residual Separation & Research Facility

Better Industrial Design

2020

INTERIM LANDFILL

70-80%

COMUNITY RESPONSIBILITY

20-30%

INDUSTRIAL
RESPONSIBILITY

INTERIM LANDFILL

2020

Industrial Responsibility

1. Design for sustainability
2. Clean production
3. Extended Producer Responsibility (EPR)

4. Progress towards Zero Waste around the world

NEW ZEALAND

Over 70% of communities have declared a Zero Waste strategy

San Francisco

- Population = 850,000
- Very little space
- 50% waste diverted by 2000
- 63% waste diverted by 2004
- 70% waste diverted by 2008
- 72% waste diverted by 2009
- 75% waste diverted by 2010
- GOAL:100% by 2020 (or very close!)

Nova Scotia, Canada (video)

- 50% diversion in 5 years (1995-2000). (Halifax ~ 60%)
- 1000 jobs created collecting and treating discarded materials
- Another 2000 jobs created in the industries handling the collected material
- Nearly all the separated materials are re-used in Nova Scotia's own industries.

Italy

- Over 2000 communities in Italy are achieving over 50% diversion using “door to door” collection systems
- Over 200 communities achieving over 70% diversion

Italy

- Novara - (a city near Turin, population = 100,000) achieved 70% diversion in just 18 months!

Italy

- Salerno (near Naples, pop 145,000) 18% to 72% diversion in one year!

Italy

- Villafranco d'Asti (Piedmont, population = 30,000) has reached 85% diversion

Spain

- Usurbil in Basque Country
- Has gone from 28% to 86% in 7 months

Belgium

In Flanders they have achieved 75% diversion with reuse, recycling, composting etc – VERY CREATIVE programs

Conclusions

- We do not need mega-landfills or incinerators!
- There is a better alternative
- The ZERO WASTE strategy is
- Better for our health (LESS TOXICS)
- Better for the economy,
- Better for our children, and
- Better for the planet (MORE SUSTAINABLE)!

To fight over-consumption

We need to swap a life built around acquiring a series of objects...

To a life built around a series of expanding human relationships

In the 1960's

"Make Love, Not War"

In the 2000's

"Make Love, Not Waste"

In the 2000's

"Make Friends, Not Waste"