



David Newman

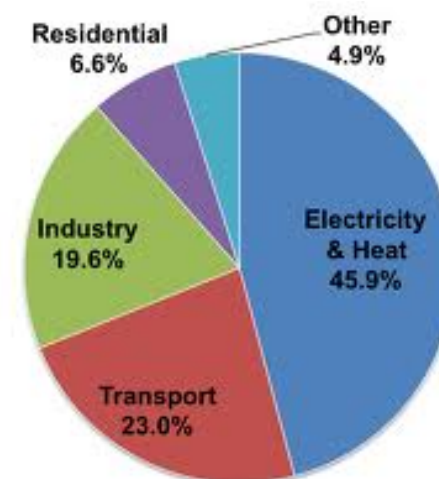
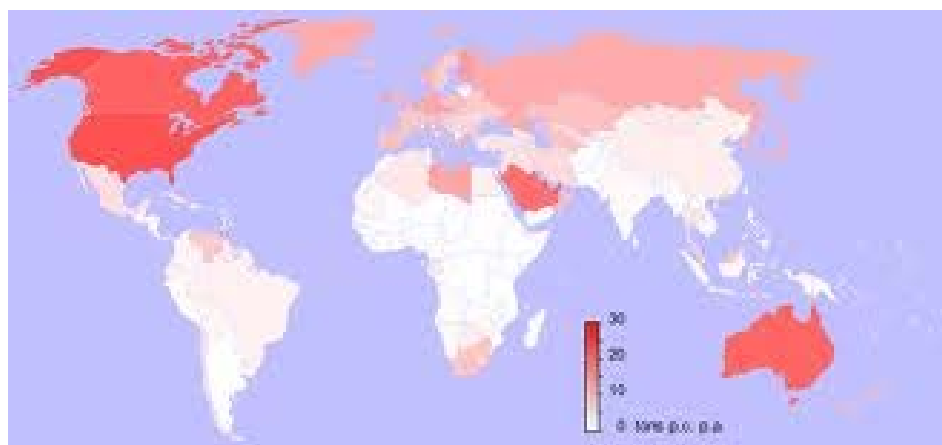
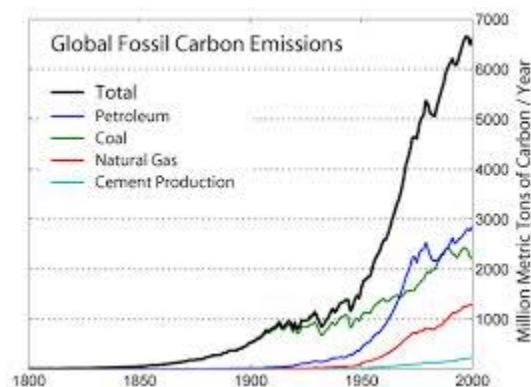
President of ISWA

Reflections on The Circular Economy

Energy, limited resources ?

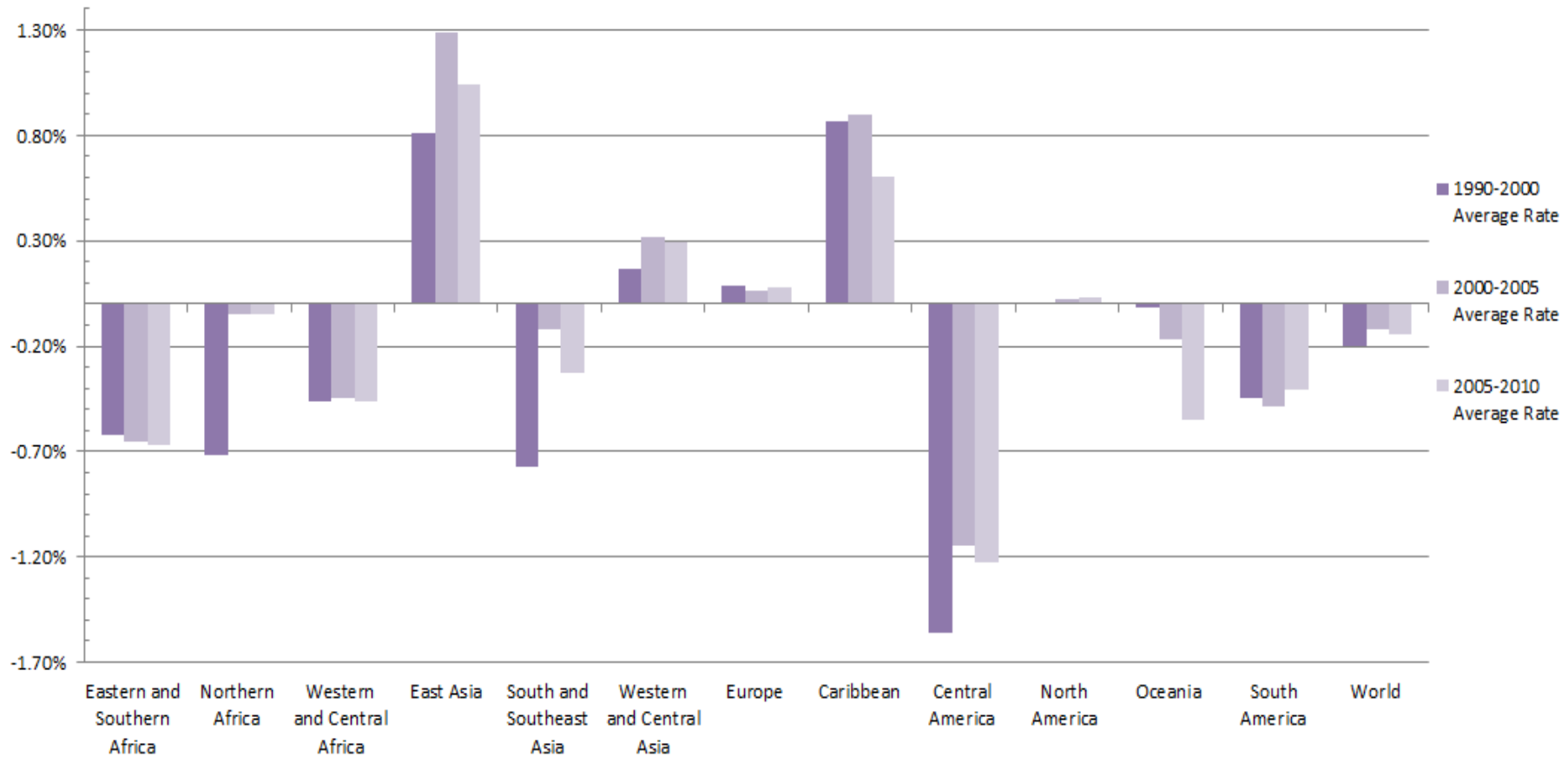


It's about costs and emissions, not supplies



Limited primary resources ?

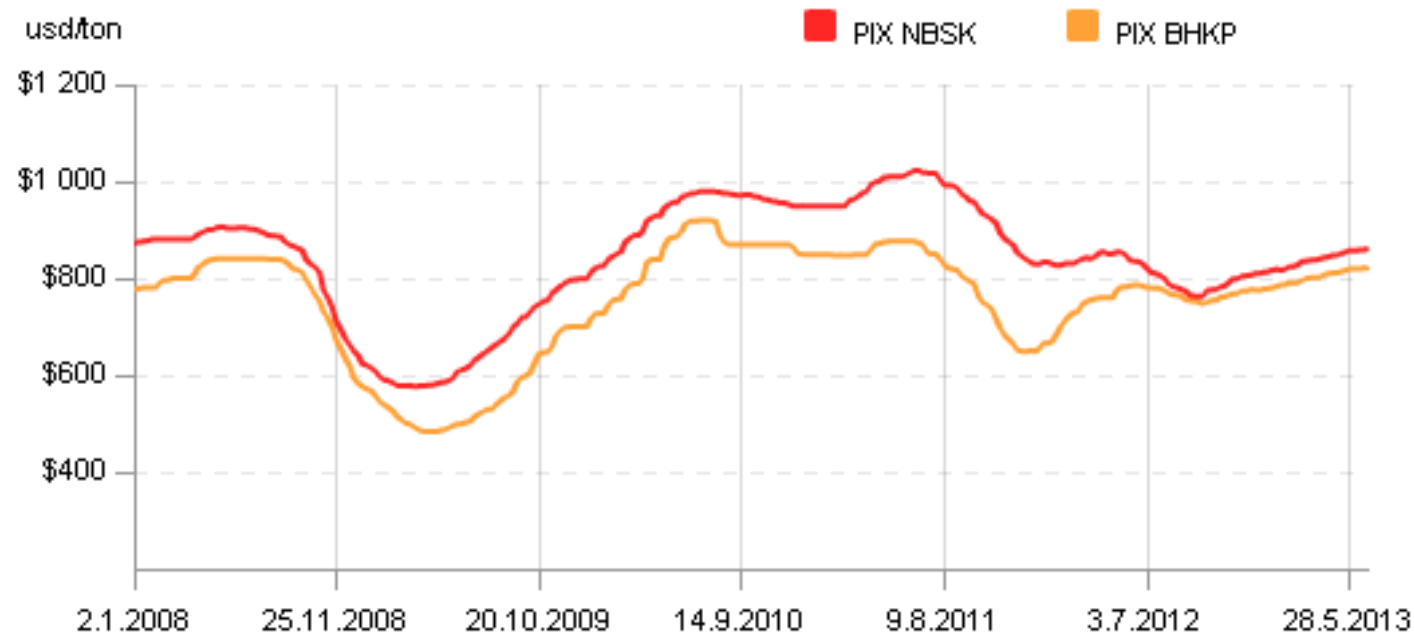
Annual Changes In Global Forest Cover



Source: FAO - Global Forest Resources Assessment 2010 at www.fao.org/docrep/013/i1757e/i1757e.pdf

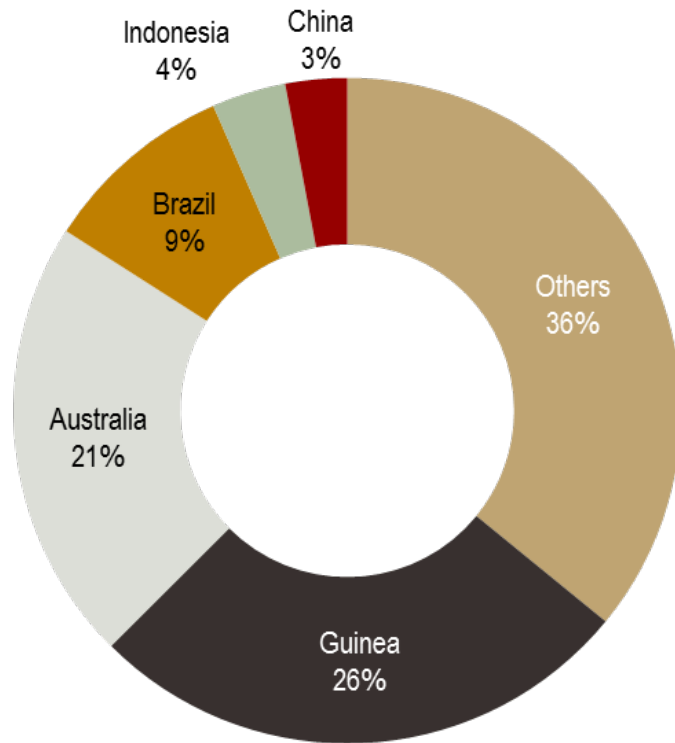
Pulp prices 2008 - 2013

PIX Pulp Indexes Europe



Unchanged, due to recycling ?

Global Bauxite Reserves (% , 2012)



Source: USGS; The Beijing Axis Analysis

Plastics



Glass



Organics



Where are the resource shortages here ?

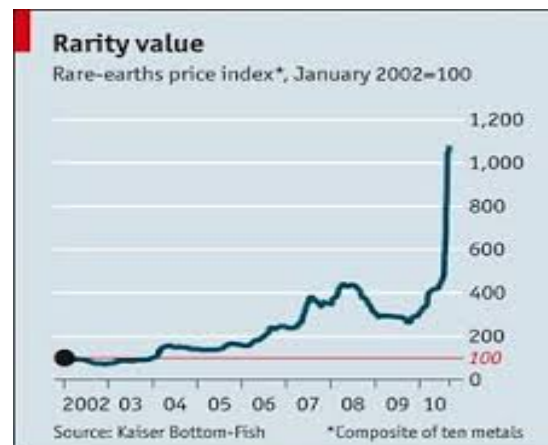
Copper



Phosphates



Rare Earths



Shortages or security ?

And if there are not

Are lack of shortages due to recycling ? Is this why we recycle ?

Why are we recovering energy if there is no shortage ?

Because of the downsides of waste:



So let's understand the basics again

Waste management is about :

- public health management
- air emissions management
- pollution control management
- worker's health management
- safe final sinks

Waste management is policy driven

Not driven by science or by finance

Treatment systems

Treatment systems are like public hospitals providing curative and preventative medicine



Treatment is about destroying pathogens, not just creating new products

Recycling

Recycling is a final sink too and provides «preventative medicine»



- Avoids disposal
- Reduces energy consumption (usually)
- Reduces trade in raw materials
- Improves resource efficiency and autonomy
- Requires quality to be effective

Some recycling results

Global recycled paper in 2012 = 44 million tons

Global produced paper in 2012 = 400 million tons

Production v recycling = 11% globally



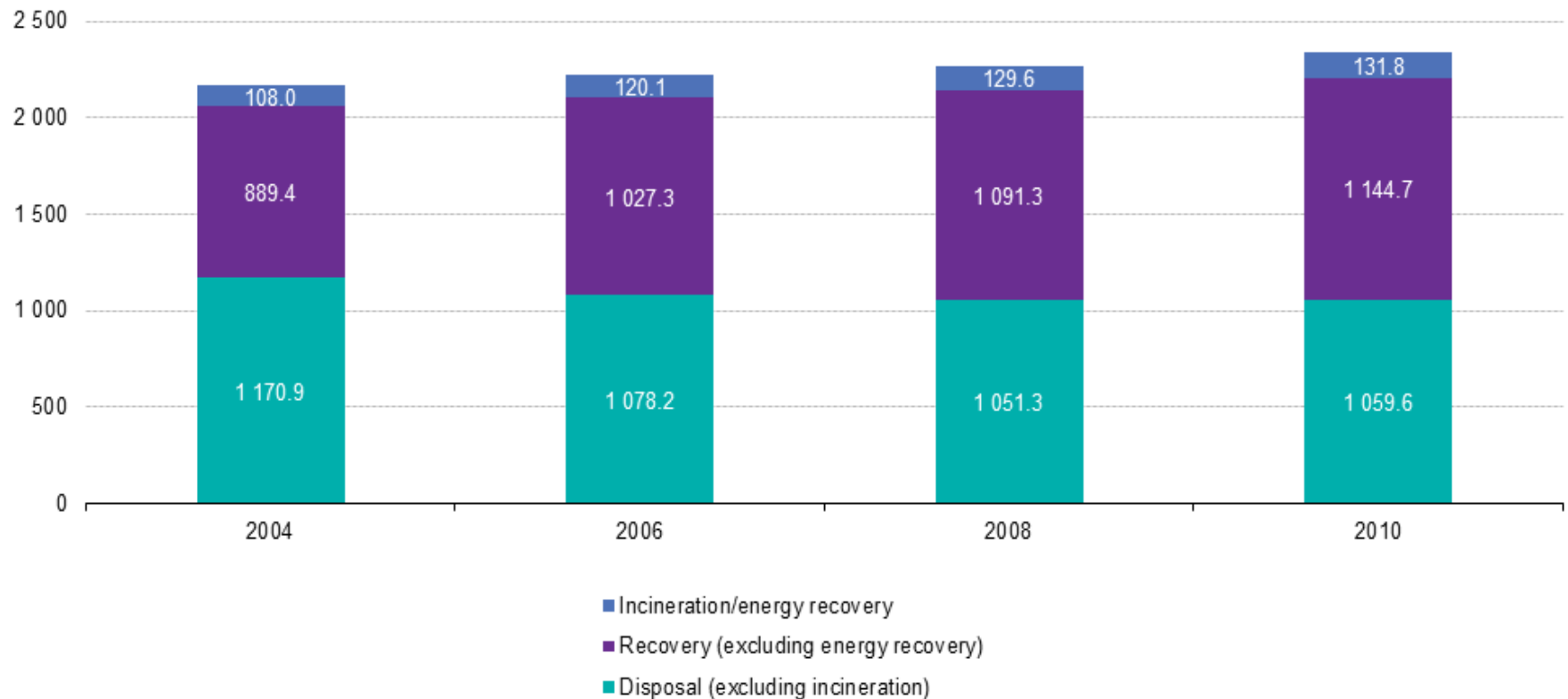
Italy aluminium packaging sold 2012 = 68.500 tons

Italy aluminium packaging recycled 2012 = 40.700 tons

Sales v recycling = 60%



BUT.....Recycling, disposal and energy recovery in the EU



(¹) Estimates.

Source: Eurostat (online data code: env_wastrt)

This is the advanced EU

About 40% of all waste still goes to disposal now despite:

- **Our economic resources, ie taxes and incentives**
- **EU strategic policy planning and development since 1990's**
- **EPR schemes**
- **feed-in tariffs for renewable energy and district heating**
- **landfill taxes and bans**
- **EU penalties on non compliant nations**
- **incentives for recycling (GPP for example)**

(ps with a stable, educated and urbanised population)

Though.....

We think that by 2030 in the EU we will have

- eliminated landfills
- recovery of resources of 50%
- recovery of energy about 40-50%

...if we continue with current policies and enforce them

How much is recycling worth ?

- Gruppo Hera in Italy, a medium sized company (Italy's largest)
- Hera Ambiente (rifiuti) turnover €382 million/year
- Handles 3.3 million inhabitants with certified 52% recycling level
- 4.5 mln/t of MSW & 2.9 mln/t of industrial waste treated in 2012.
- Waste sales value €21 million (5.5% of T/O)

Hera's sales of waste 2013

Of the €21 million of total recycled waste sales

- €4 million were on the open market (1%)
- €17 million (4.5%) were through the EPR National Packaging Consortium, ie collection is subsidised by environmental taxes.

Recycling costs :

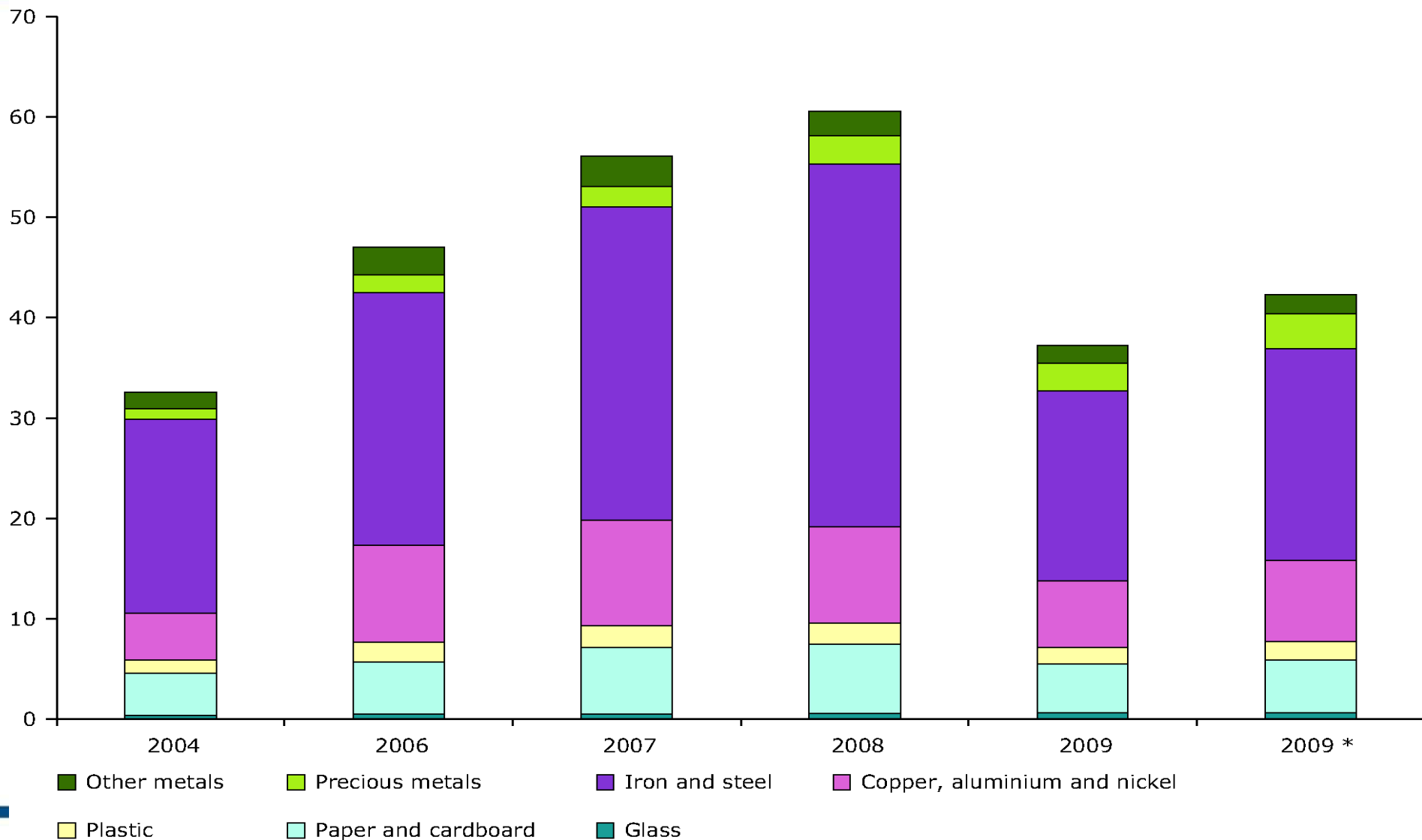
Press release of March 14, 2014

- Bologna, 14 mar. – Hera, la multiutility che si occupa dei rifiuti a Bologna, investirà nei prossimi 3 anni 10 milioni di euro per far crescere la raccolta differenziata. Il piano presentato dall'amministratore delegato Maurizio Chiarini e dal sindaco Virginio Merola ha un obiettivo ambizioso: far lievitare da qui al 2016 la raccolta differenziata dall'attuale 39 al 50%. Il tutto non avverrà a costo zero: "Il costo di tutto quello che viene fatto va scaricato in tariffa" ammette senza giri di parole Chiarini. La stima di Merola è di un aumento medio della bolletta di circa 40 centesimi al mese per famiglia. "Poco più dell'inflazione prevista" dice il sindaco.

Total turnover of recycling of seven key recyclables in the EU

2004 and 2006–2009

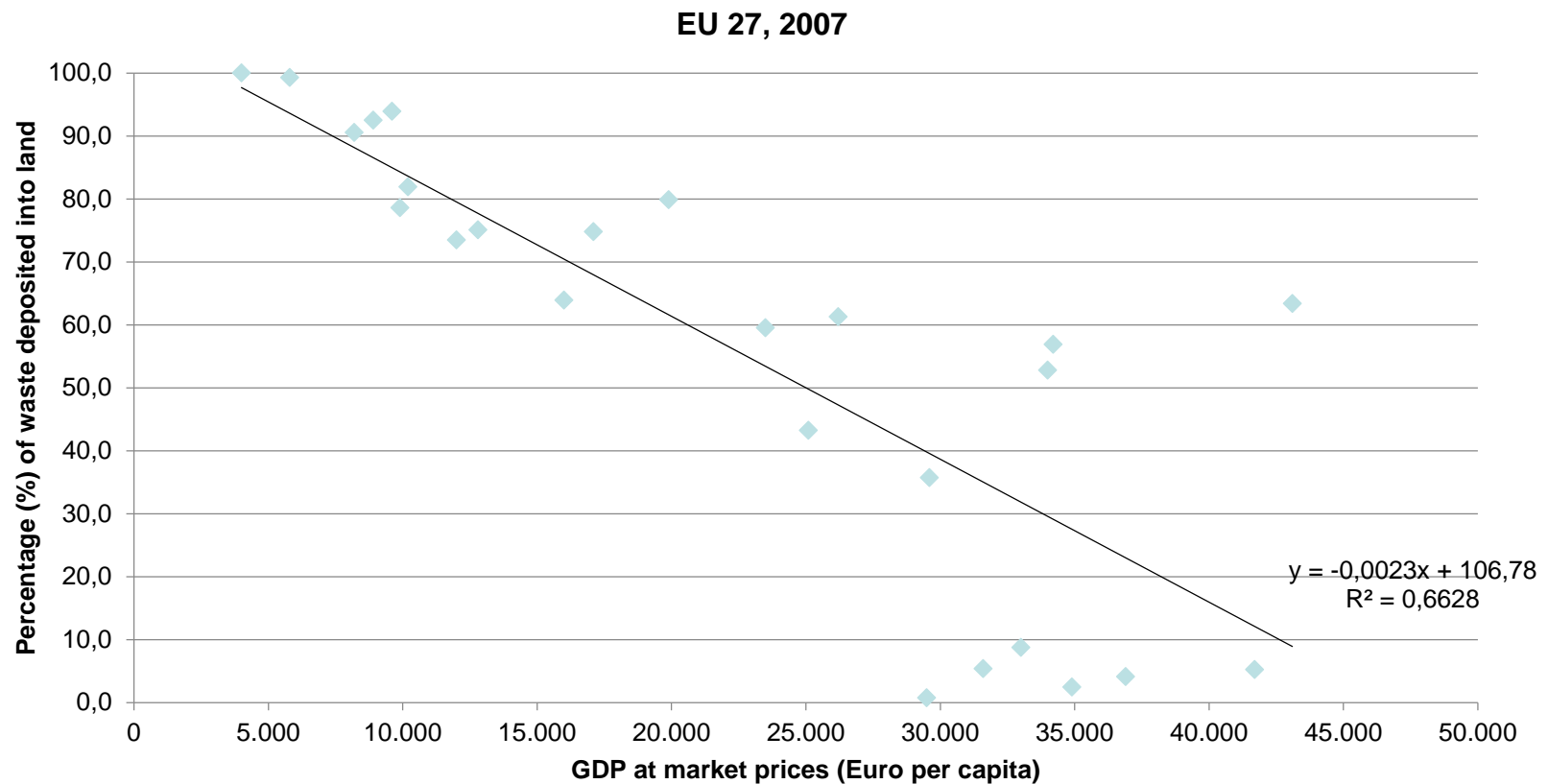
Billion EUR in current prices



How much in EU countries with similar targets ?

- Serbia €30/person/annum 5% recycling rate, no energy recovery
- Hungary €60/person/annum 15% recycling rate + some energy recovery
- Portugal €100/family/annum 21% recycling rate + some energy recovery
- Belgium €185/person/annum 75% recycling rate + energy recovery
- Germany up to €350/family/annum + energy incentives

Boundaries for Strong and Stable Improvements in Solid Waste Management

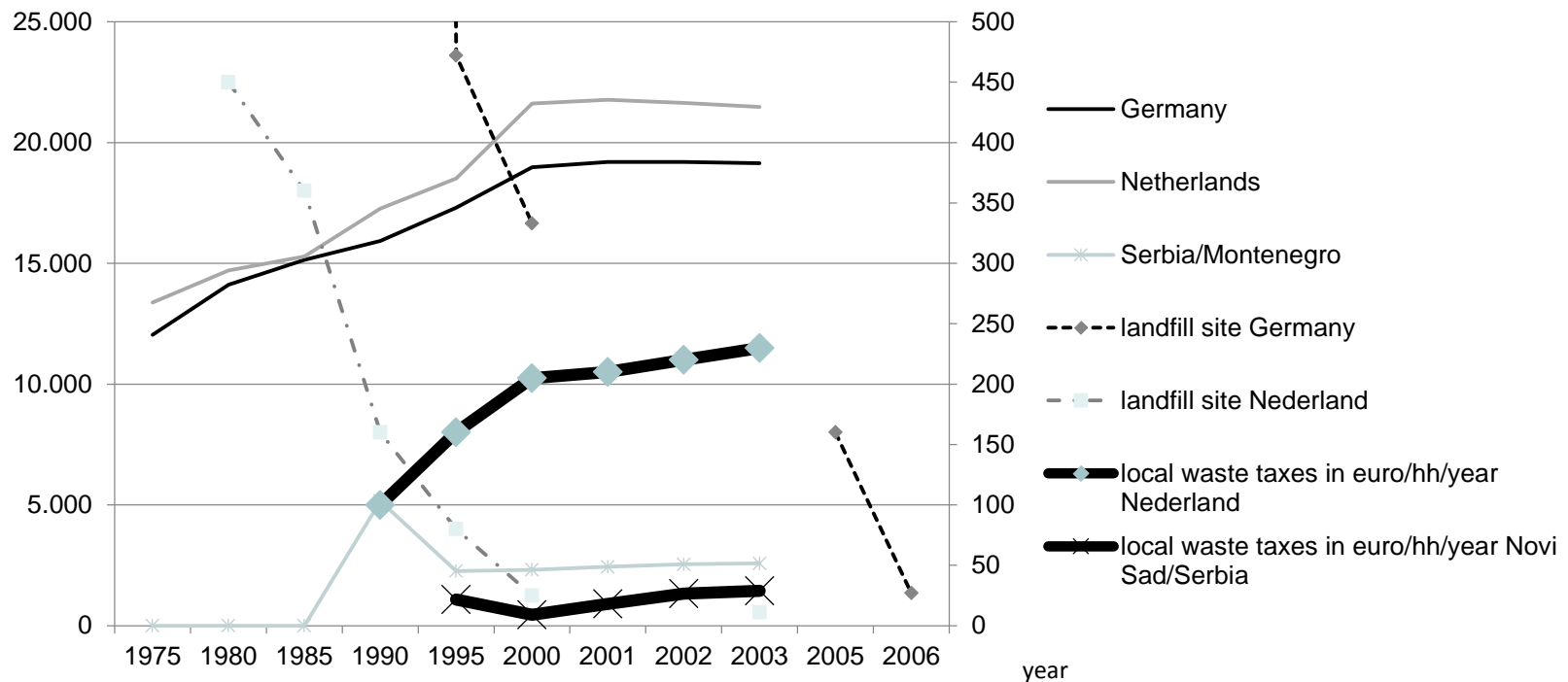


Thanks to Goran Vujic

Boundaries for Strong and Stable Improvements in Solid Waste Management

1990 International Geary-Khamis dollars

Number of landfill sites/price per hh per year



Thanks to Goran Vujic

Conclusions.....

Europe's waste industry is not economically driven by recycling, though it does a lot of it (mainly metals)

Resource values are not the issue for main waste streams, except metals.

Europe's waste industry is driven by :

1. public health protection
2. Taxes to pay for this
3. Energy from waste, often subsidised too

Recycling and material recovery happens due to subsidies or taxes, largely - €150/200 per capita per annum

Waste management costs !!

It's as simple as that

- And Europe's example is that these costs are not covered by recycling, nor are energy sales enough.
- Waste taxes are needed
- Everyone has to pay the cost of health protection, it is a PUBLIC service.

Waste management costs money

IS THE MESSAGE CLEAR ?

Last messages

Virtuosity costs ! The Circular Economy is a luxury which the developing world cannot now afford. So we have to be content with simplified solutions in the medium term.

Waste recycling is not going to drive waste systems without taxes and incentives like EPR.

Look at the «virtuous EU», it takes time to implement policies: 30-40 years.

Keep focussed on the long term, don't obsess on tomorrow- you will achieve nothing.

Beware of experts with a know-all solution.

Oh....

And join ISWA

www.iswa.org