



An EU funded project

2nd Workshop

Waste Management Plan on hazardous Construction & Demolition Waste

17th of June 2016

Specific WMP on hazardous C&D waste

- I. Expected hazardous C&D waste**
- II. Assessment on needs for proper management**
- III. Strategy on management of C&D waste**

Expected amounts

Waste type – Data up to now	Amount (t) 2012	Amount (t) 2013	Amount (t) 2014
Total Hazardous C&D waste	142	14,854	2,259
Total Non-Hazardous C&D waste	21,756	62,410	207,993

Amount on hazardous waste 2014 - Waste code	Amount (t) 2014
17 01 06* Mixed C&D	2
17 02 04* Wood	202
17 04 09* Metals	8
17 04 10* Cables	37
17 05 03* Soil	1,812
17 06 01* Asbestos	6
17 06 03* Tar	89
17 06 05* Asbestos cement	103
total	2,259

Will those waste streams increase or decrease in future time?

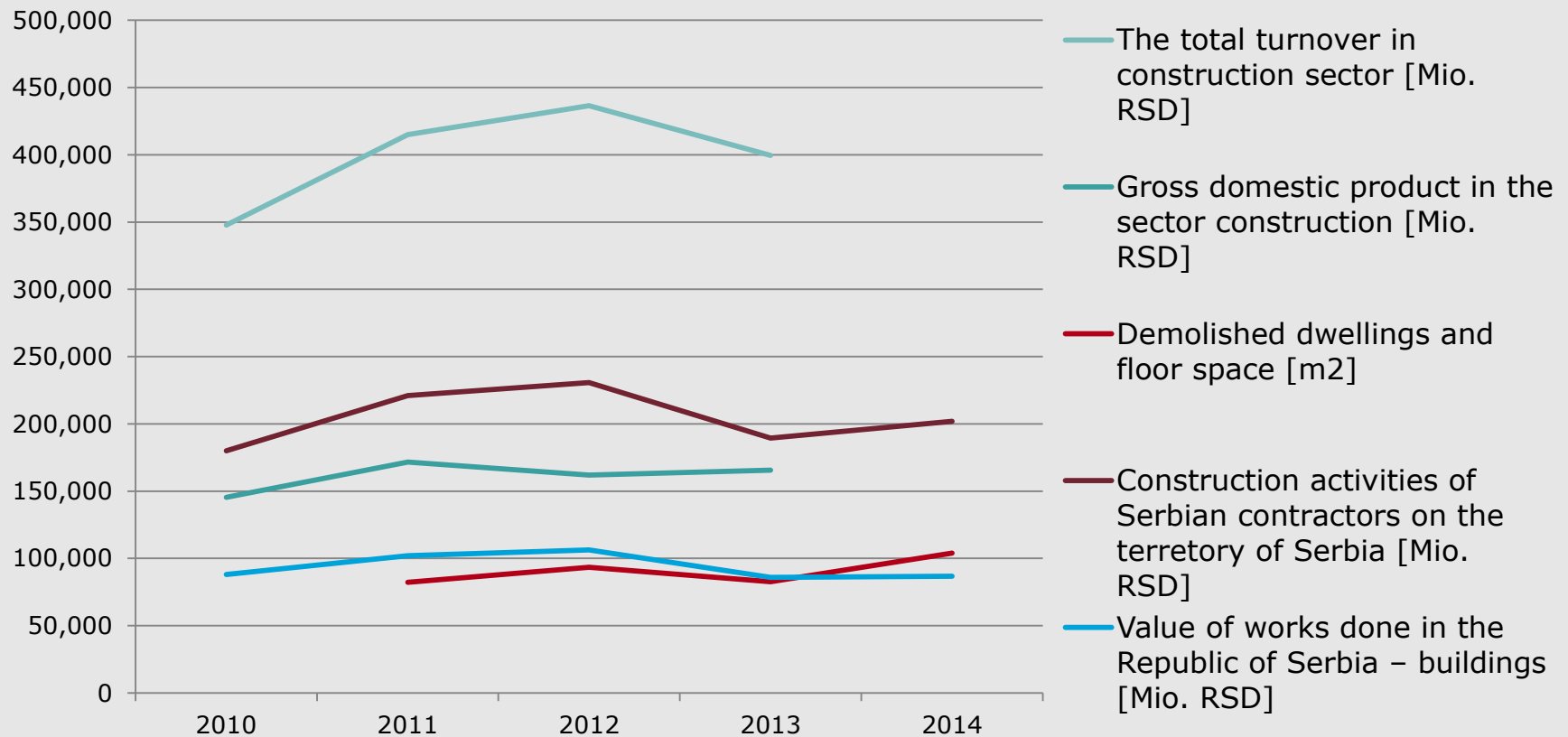
Which treatment options are suitable and which capacities are needed?

Possible indicators for forecast

- **Total GDP;**
- **The total turnover in construction sector;**
- **Share of the construction sector of total GDP;**
- **The total construction investments of buildings;**
- **Issued building permits in the Republic of Serbia;**
- **Construction activity of the contractors;**
- **Consumption of building materials;**
- **Demolished dwellings and floor space in m²;**
- **Material flow indicators (e.g. DMC).**

-> Aim: Provide a forecast on the amounts in 2020!

Indicators based on data from the past



-> 5 indicators covered: Average yearly increase of 4.8 %.

-> Data on the building material consumption show a decrease in 2010-2014.

Proposed treatment options

Waste type	Treatment option	Status	Expectations
Asbestos-containing waste	Can be deposited at regularly landfills on a visibly marked area	Four sanitary landfills are in operation	Increasing amounts; More landfill capacities for hazardous waste are proposed
PCB containing waste	Incineration , possibly export	No thermal treatment option in Serbia up to now	Amount may vary yearly; no specific additional capacities are proposed
Contaminated waste wood	Co-Incineration	Co-incineration in the industry sector might be an option	Amount may vary yearly; no specific additional capacities are proposed

Proposed treatment options

Waste type	Treatment option	Status	Expectations
Tar-containing bituminous waste	Can be co-deposited at regularly landfills	Four sanitary landfills are in operation, with the option of receiving hazardous waste	Amount may vary yearly; More landfill capacities for hazardous waste are proposed
HC- and PAH-contaminated soils	Biological treatment, Physico-chemical treatment, thermal treatment, possibly export	No treatment capacities other than disposal available	Increasing amounts; Additional Capacities for biological / physico-chemical treatments are proposed

Proposed treatment options

Waste type	Treatment option	Status	Expectations
WEEE and lamps	Recycling	Treatment / Recycling of WEEE is established to a small scale	Amount may vary and is included in the WEEE data; no specific additional capacities are proposed
Mixed non-hazardous C&D waste	Recycling, disposal	Mainly disposed of at dumpsites, recycling of non hazardous C&D waste is established to very small scale	Increasing amounts; Additional Capacities for recycling and disposal are proposed

Proposed strategy on C&D management

Following main issues should be introduced in a parallel way:

Providing infrastructure for:

- Collection
- Transport
- Storage
- Treatment

Environmental sound
management of C&D
waste

Ban of illegal dumping
of hazardous and non
hazardous C&D waste
(and mixtures thereof)

**Source separation of
hazardous
components/materials**
from non hazardous C&D
waste (at the site of
generation or at a facility)

Introduction of **quality
criteria for recycled C&D
waste** to foster recycling
of mixed non hazardous
C&D waste and **establish
capacities for treatment
of hazardous C&D waste**

Following the European waste hierarchy

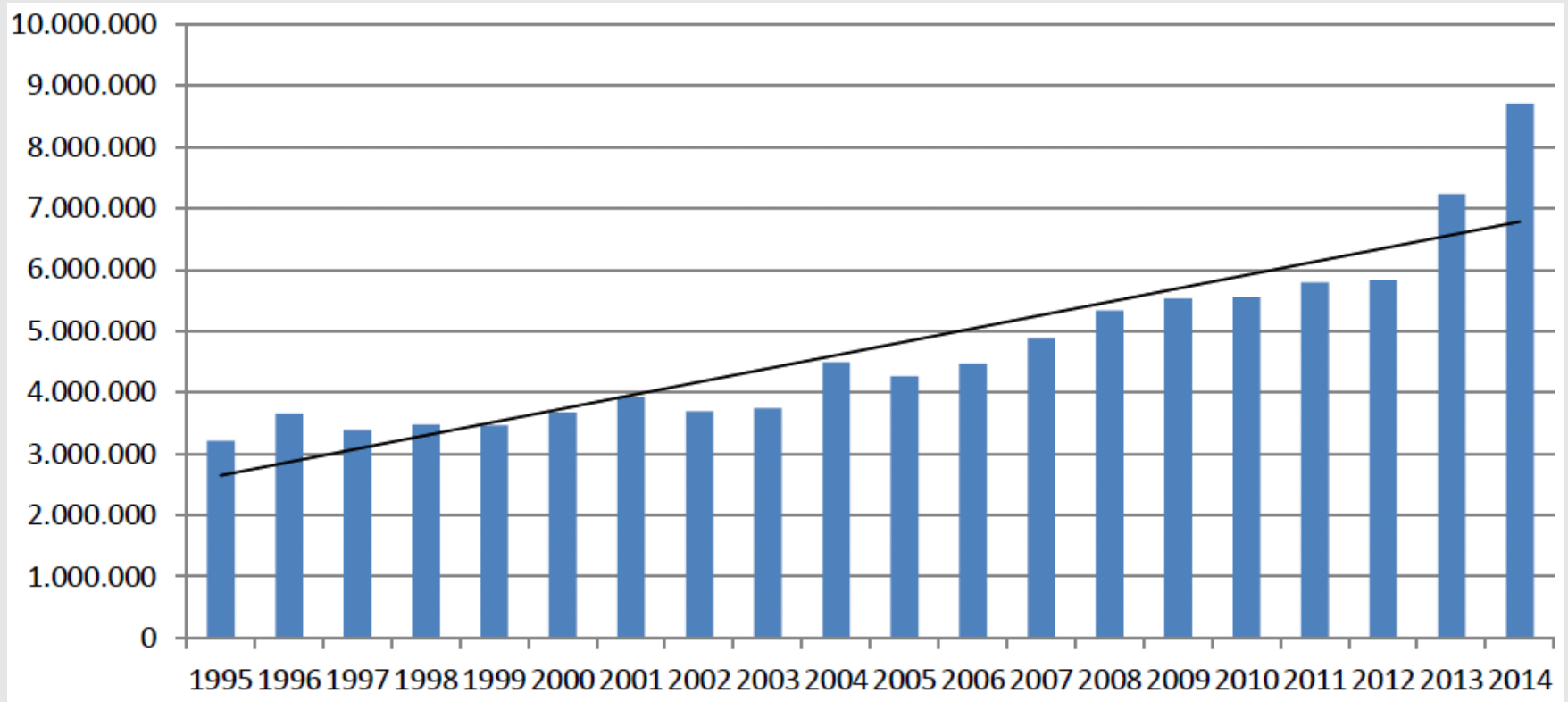


Introduce recycling of C&D waste

- Make obligatory measures and the legal framework which are defined in the drafted **by-law covering mineral C&D waste**, with requirements on:
 - Separate collection of construction waste
 - Storage, transportation and on-site recycling
 - Quality criteria
- **Establish treatment capacities** for non-hazardous mixed construction and demolition waste
- **Establish a market for recycled aggregates** to enable to compete against primary resources

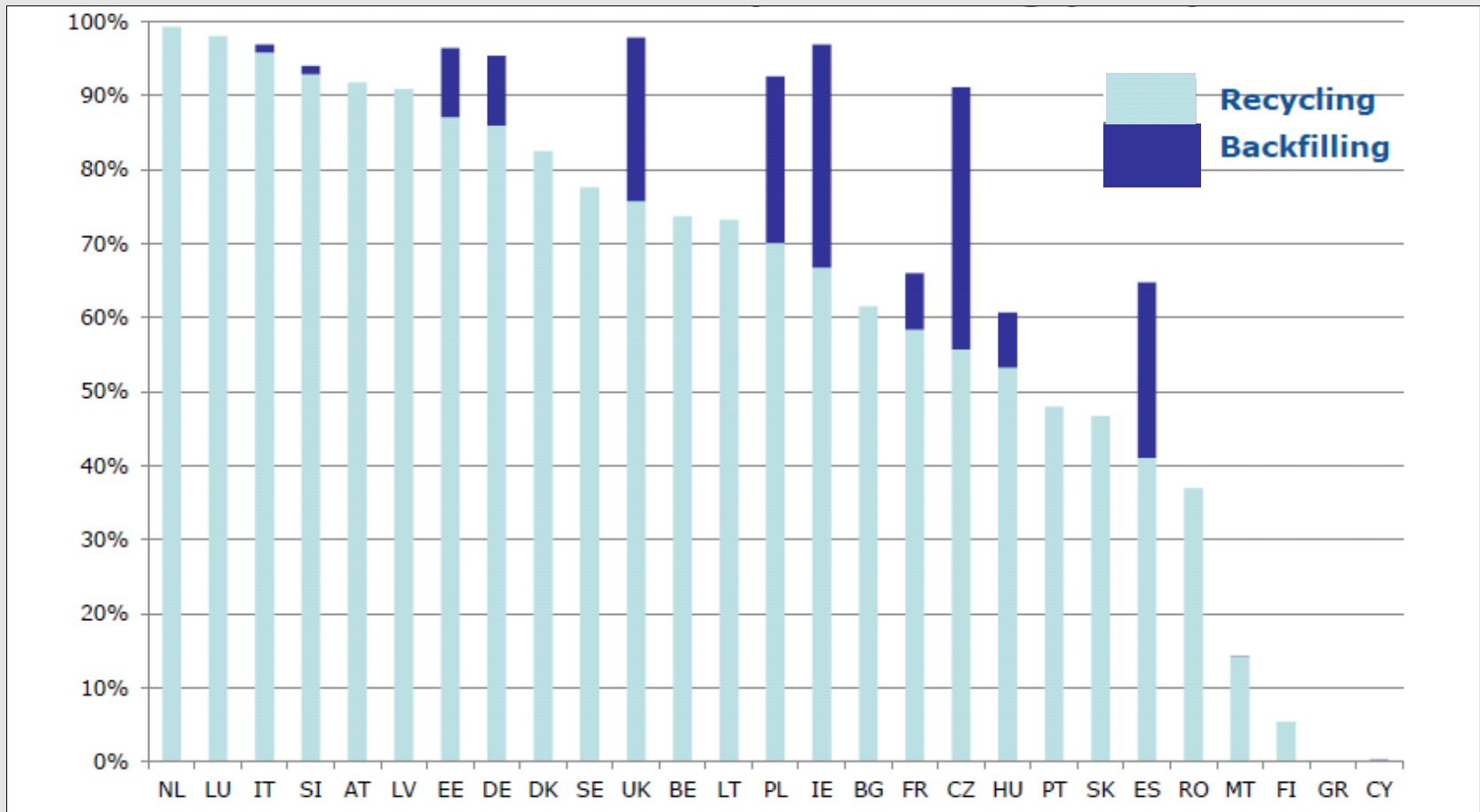
Establish recycling on C&D waste:

Development of treated C&D waste in Austria



C&D waste management in Europe:

Recycling and backfilling in European countries

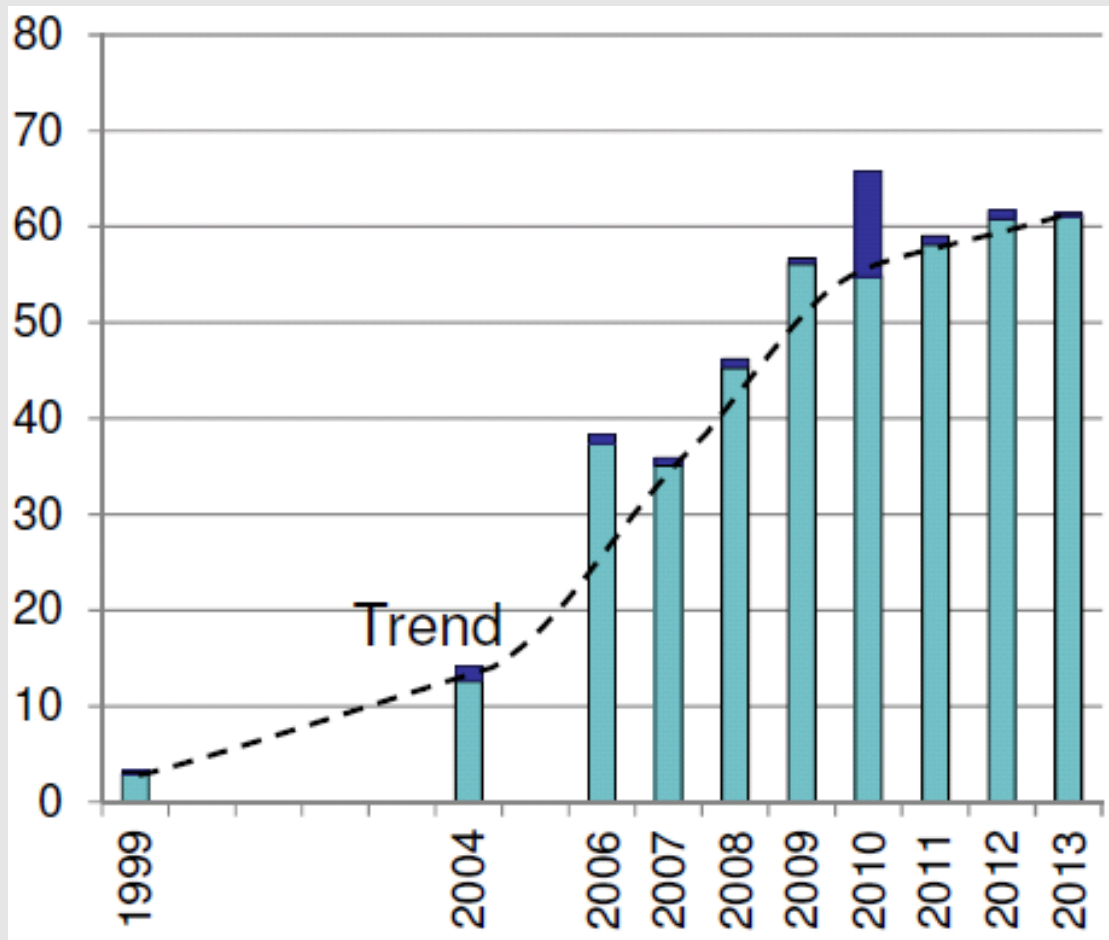


Introduce source separation on-site

- **Introduce separate collection of hazardous waste** potentially contaminating C&D waste. E.g. WEEE, lamps and asbestos containing waste needs to be collected and transported separately from the non hazardous C&D waste (see provision laid down in Article 35 of the Law on Waste Management)
- **Establish treatment capacities** for source separated hazardous waste from de-construction
- **Clarify responsibilities** of the involved parties

Source separation of asbestos cement:

Development of separated amounts in Austria



**Asbestos cement and
asbestos cement
powder
(in 10³ tons)**

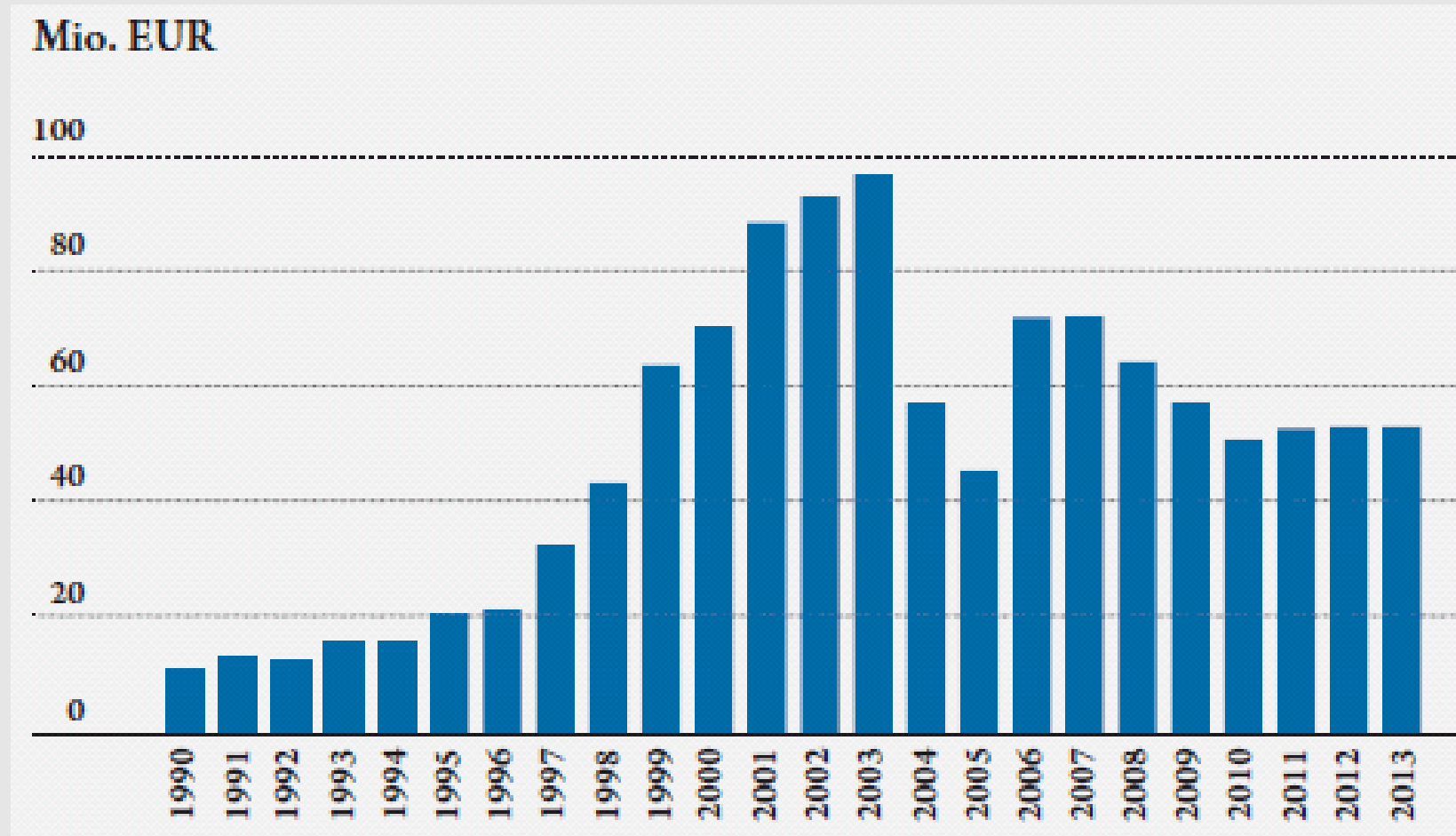
**Other asbestos
waste (in 10³ tons)**

Ban C&D waste from dumpsites

- **Increase the administrative capacity** for inspection/permitting activities. Increase the administrative capacity for punishment of illegal activities related to the C&D management (illegal/not authorized de-construction, uncontrolled/illegal disposal of C&D waste at dumpsites)
- **Establish capacities at controlled sanitary landfills** for disposal of C&D non-hazardous waste
- **Introduce financial incentives** for disposal of C&D waste at controlled sanitary landfills

Effects and benefits of taxation:

Development of income from landfill taxes in Austria



Thank you!

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