XIth INTERNATIONAL SYMPOSIUM WASTE MANAGEMENT ZAGREB 2010

► **MBT technologies in "starting" and "advanced" countries: *What´s different?***

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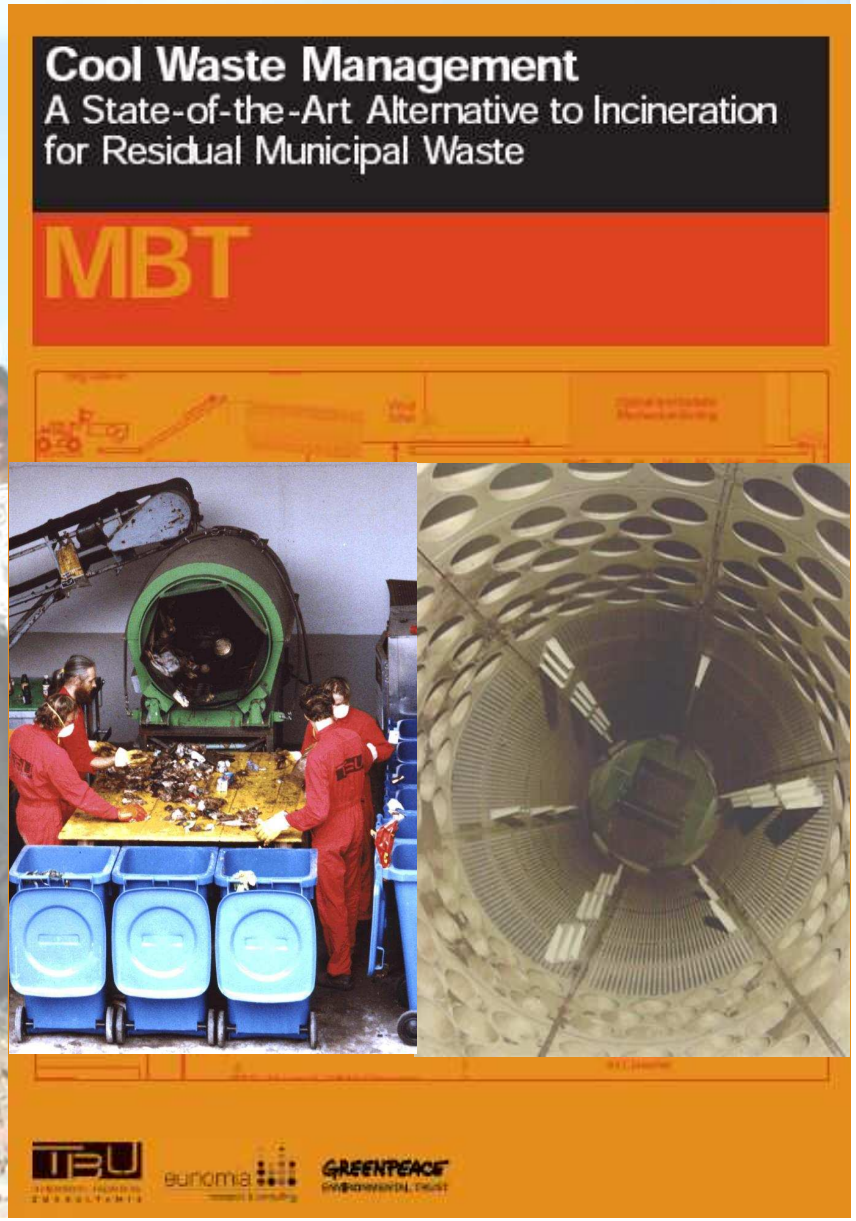
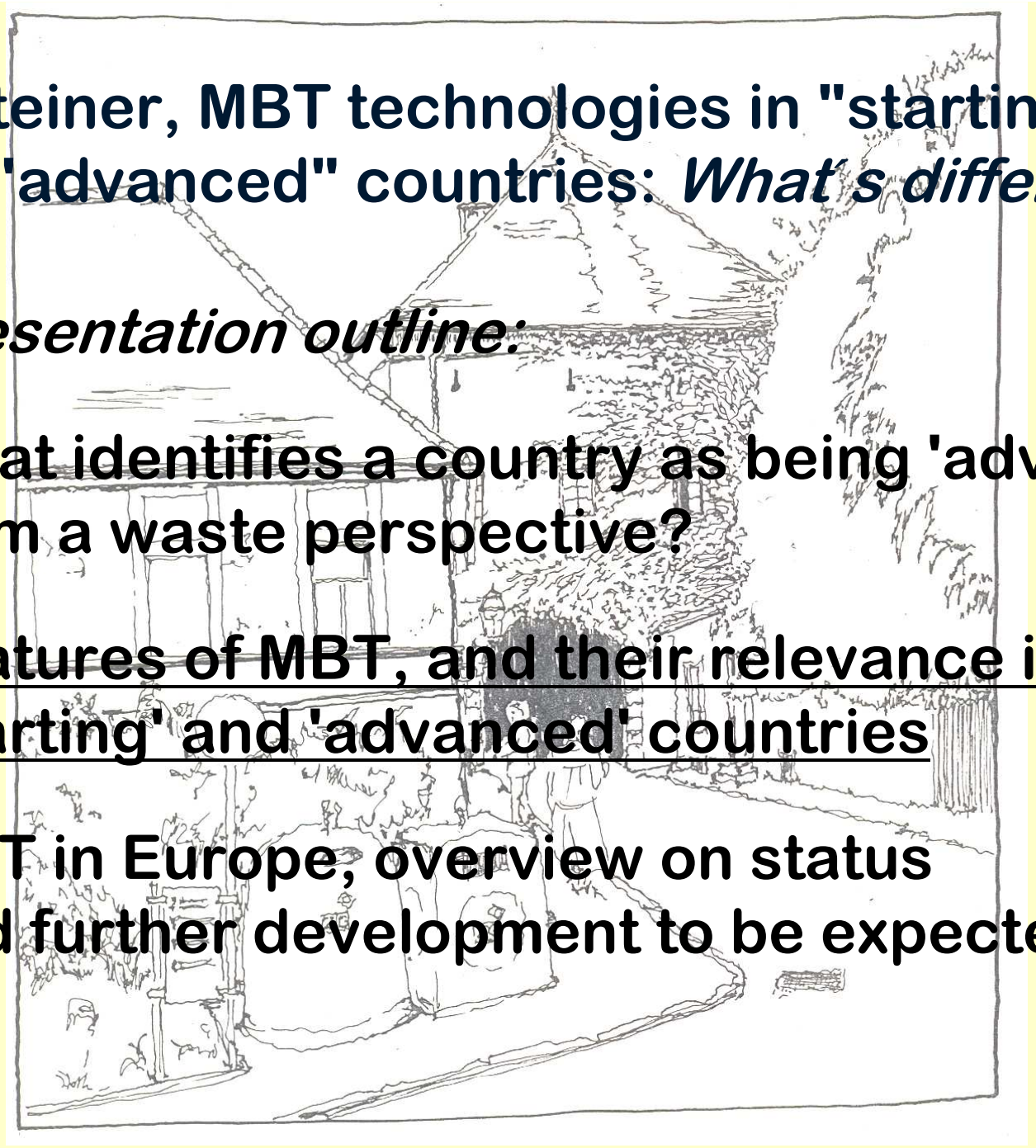
TBU European Environmental Engineers at a glance:

Independent Engineers & Consultants focussing on Municipal Solid Waste

- ***Conceptual Design*** **(collection & treatment, finance & implementation…)**
- ***Design & Optimization*** **of Waste Treatment Plants (mainly MT/MBT systems)**
- ***Solid Waste Auditing***



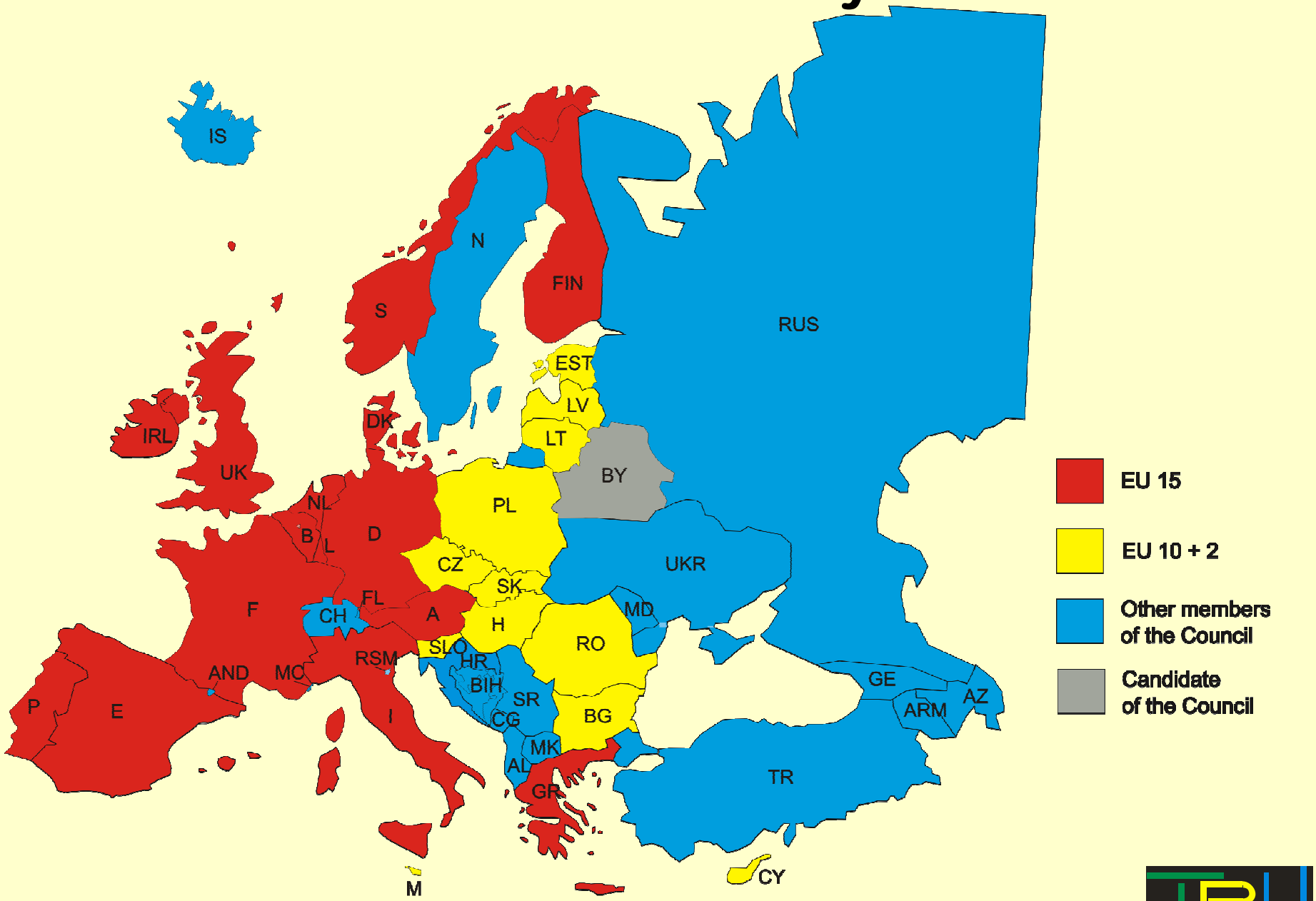
M. Steiner, MBT technologies in "starting" and "advanced" countries: *What´s different?*



Presentation outline:

- **What identifies a country as being 'advanced' from a waste perspective?**
- **<u>Features of MBT, and their relevance in 'starting' and 'advanced' countries</u>**
- **MBT in Europe, overview on status and further development to be expected**

What´s an ´advanced´ country *wastewise*?



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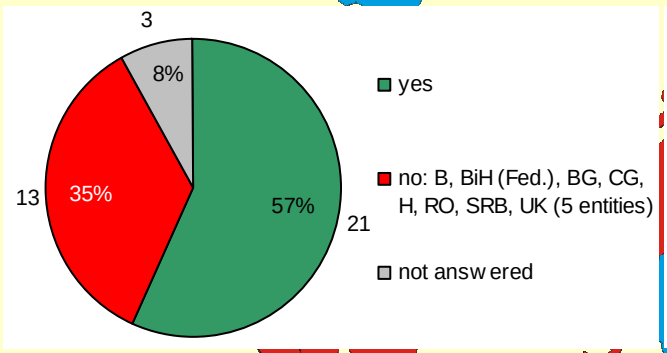
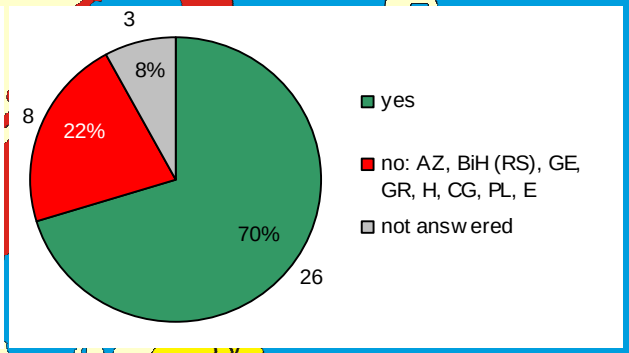
What´s an ´advanced´ country *wastewise*? Selected results

from a survey conducted 2006 in all (47) member states of the Council of Europe

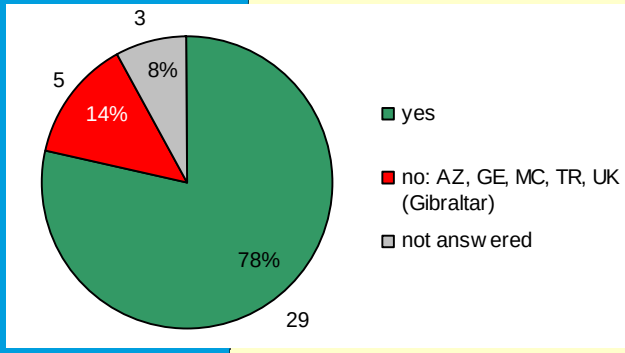
"Are MSW related issues assigned to one single Ministry?"



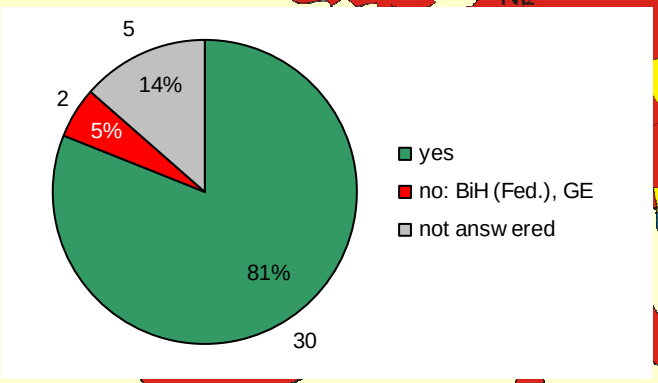
"Is there an agency (national level) dealing with MSW issues?"



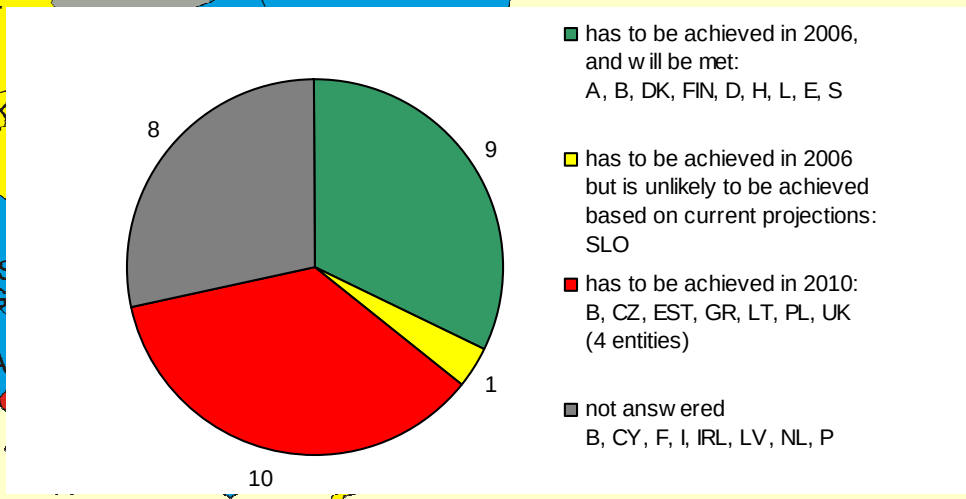
"Is there a National Plan for MSW?"



"Are MSW amounts reported regularly to a national institution?"



"When does your country have to achieve the "first" time target regarding the reduction of BMW according to Landfill Directive?"



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Features of MBT, and their relevance...

...in „starting“ countries: *...in „advanced“ countries:*

- **Convenient cost**

Specific investment:

< 100 €/t … 400 €/t installed capacity p.a.

Turning a triangular windrow, source:
RRSI Resource Recovery Systems International

Fully encapsulated, anaerobic MBT with RDF production, source:
aha Hanover (regional public enterprise for waste disposal services)

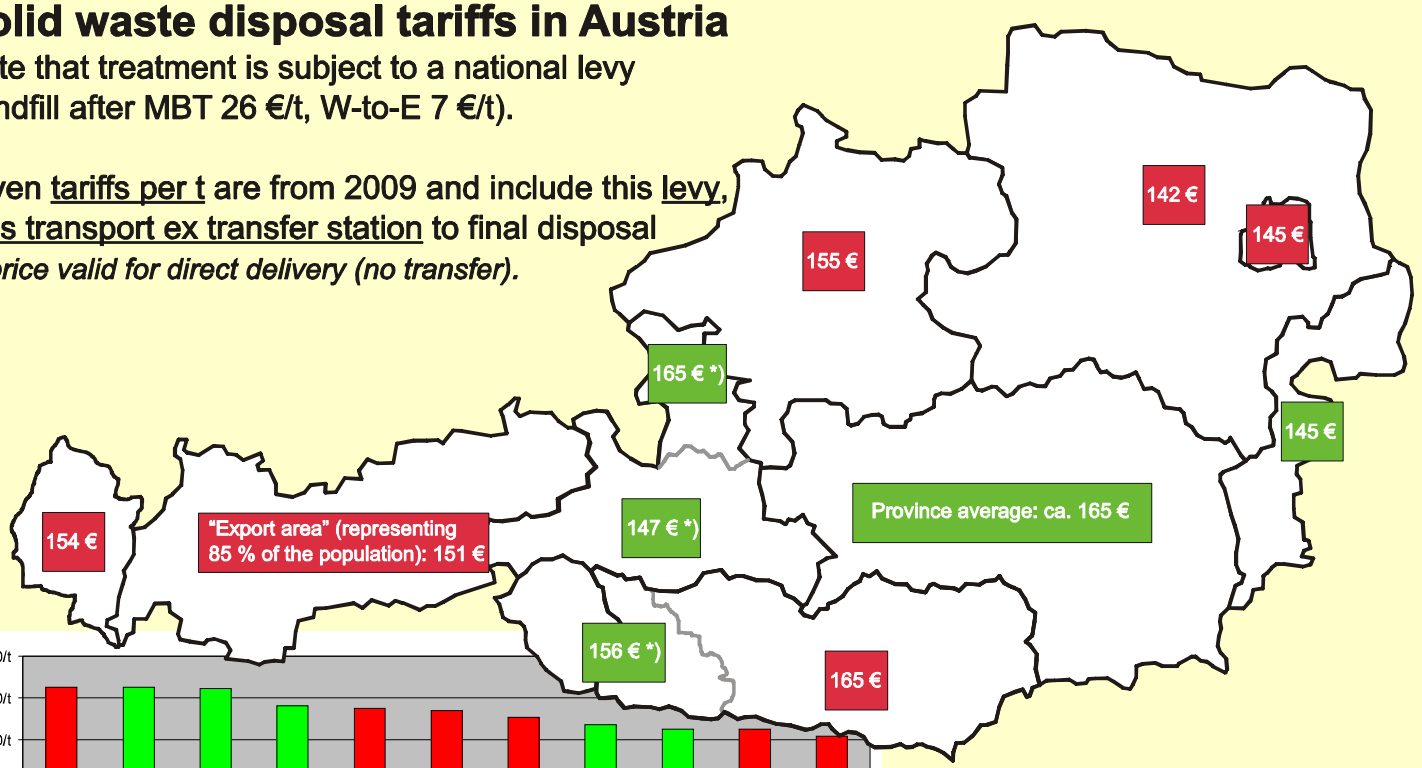
MBT in ´advanced´ countries:
Is the cost difference to W-to-E significant?

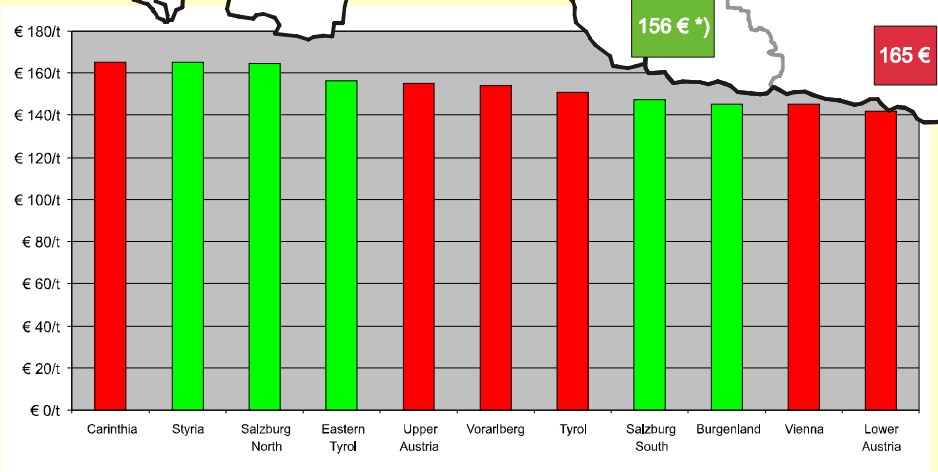
Solid waste disposal tariffs in Austria

Note that treatment is subject to a national levy (landfill after MBT 26 €/t, W-to-E 7 €/t).

Given tariffs per t are from 2009 and include this levy, plus transport ex transfer station to final disposal

**) price valid for direct delivery (no transfer).*





Conventional (grate) incineration

MT / MBT combined with fluidized bed incineration

Features of MBT, and their relevance…

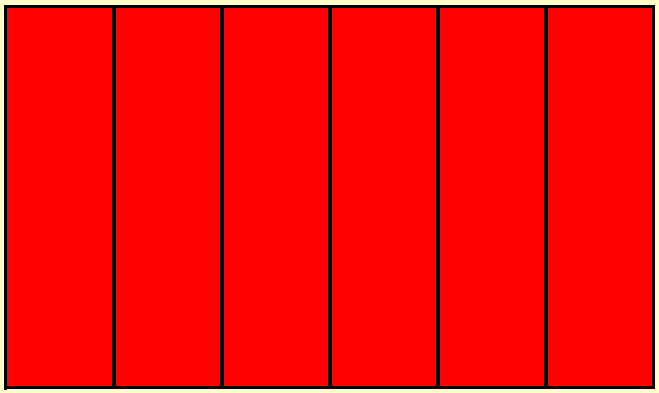
…in „starting“ countries:

- **Convenient cost**
  both capex & opex
- **Gradual development of treatment standards**

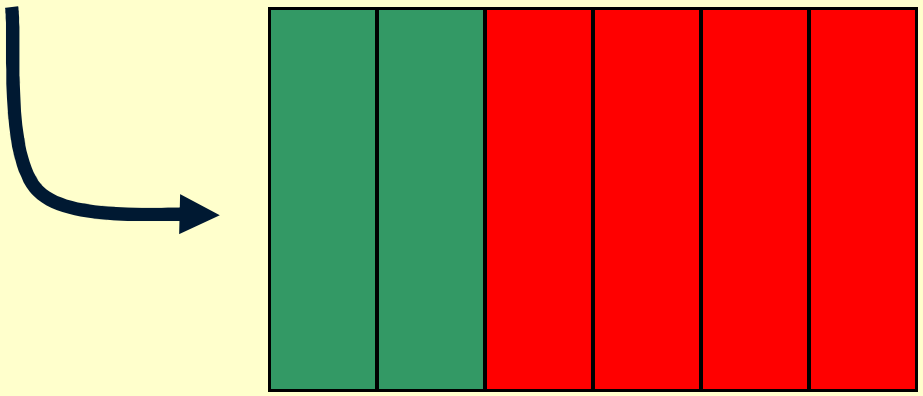
…in „advanced“ countries:

- **Cost difference to conventional WtoE tends to become neglectible**

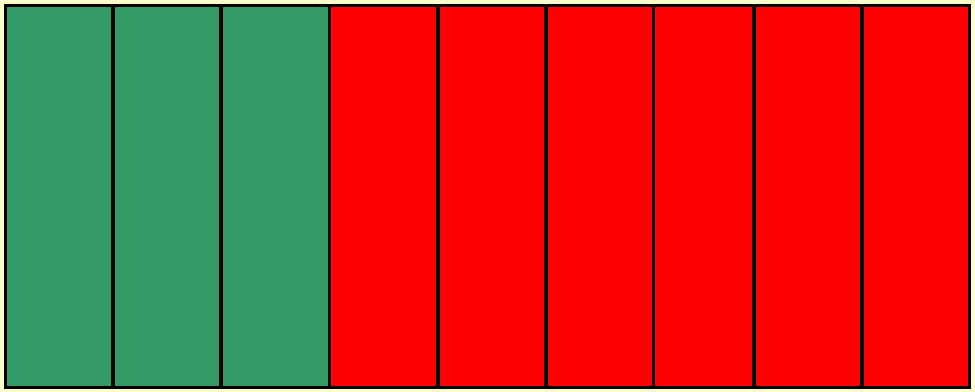
„Double duty“ sites



Aerobic systems:
Since about 15 years *full modularity* is a standard: *Start up* with a certain size…



…introduction of *separate collection (biowaste)* requires for *no additional investment*



…capacity increase* according to *actual demand

Features of MBT, and their relevance…

…in „starting“ countries:	*…in „advanced“ countries:*
➢ **Convenient cost** both capex & opex	– Cost difference to conventional WtoE tends to become neglectible
➢ **Gradual development of treatment standards:** Phasing of investments (goes against the fact that donors and development agencies as a rule must distribute their grants or loans over very short periods)	± practiced at certain (comparably low) level
➢ **Flexibility**	

Flexibility
in respect to *feedstock:*

✓ MSW ✓ biosolids
✓ various industrial waste types

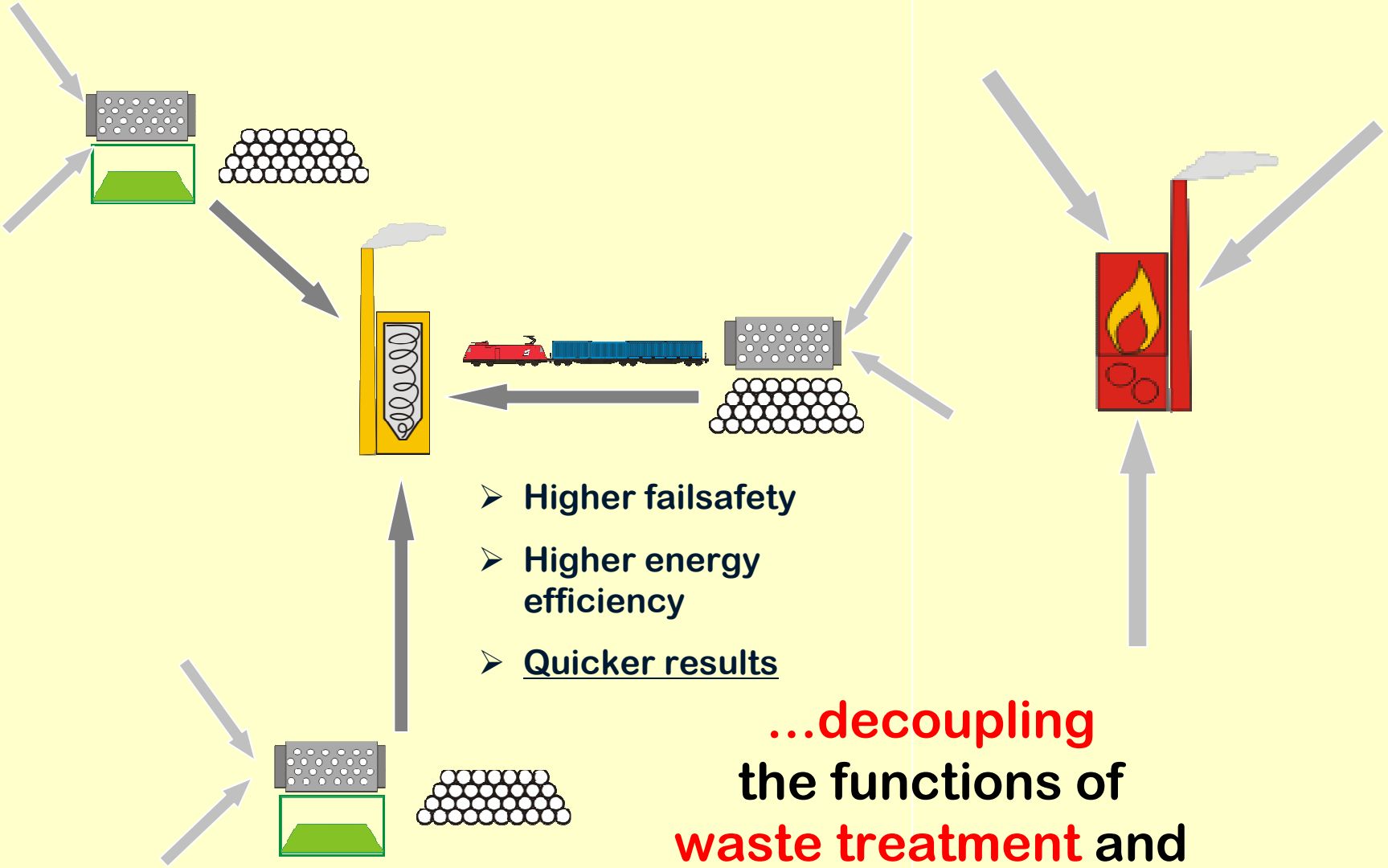
The ´biologic treatment option´ generally offers *flexibility*
in terms of *plant size:*

Unit sizes
…range from household level

Features of MBT, and their relevance…

…in „starting“ countries:		…in „advanced“ countries:
➢ **Convenient cost** both capex & opex	–	Cost difference to conventional WtoE tends to become neglectible
➢ **Gradual development of treatment standards:** Phasing of investments (goes against the fact that donors and development agencies as a rule must distribute their grants or loans over very short periods)	±	practiced at low level
➢ **Flexibility, both in terms of** - feedstock - size of catchment area (⇨ capacity)	+	Combination M(B)T (several smaller facilities) + one central thermal plant
➢ **Large variety of technologies** - *Opportunity* for local suppliers - *Obstacle:* Tedious decision processes	±	Not more than a dozen suppliers of WtoE technologies on the market worldwide
➢ **Carbon sequestration**	+	to the extent as landfilling of MB treated fractions is allowed / practiced
➢ **Decoupling** the functions of **waste treatment** and **energy production**	+	to be realized only by combining M(B)T with thermal treatment (increasingly FBT fluidized bed technology)

The crosslinked vs. the ´classical´ outline…



- Higher failsafety
- Higher energy efficiency
- Quicker results

…decoupling
the functions of
waste treatment and
energy production…

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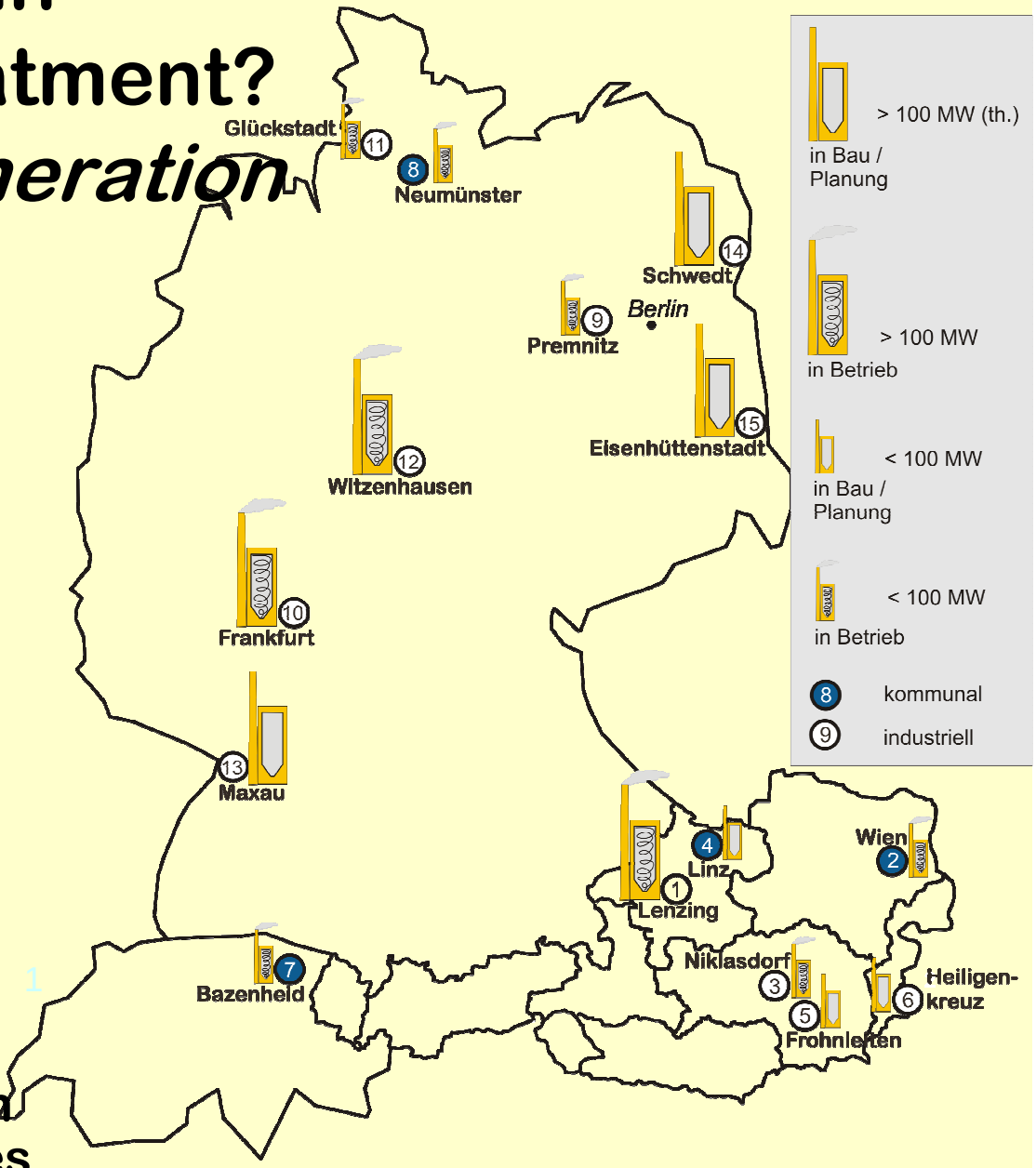
What´s really new in thermal waste treatment?

Fluidized Bed Incineration

… features compared to conventional (grate) incineration):

- **Pre-treatment required**
- **Less air**
  - ⇨ **less cost**
  - ⇨ **less size**
- **Higher quality of solid residuals**
- **Higher energy efficiency by reduction of *chlorine corrosion,* thus higher ´steam parameters´**
- **Ideally to be combined with certain industrial processes**



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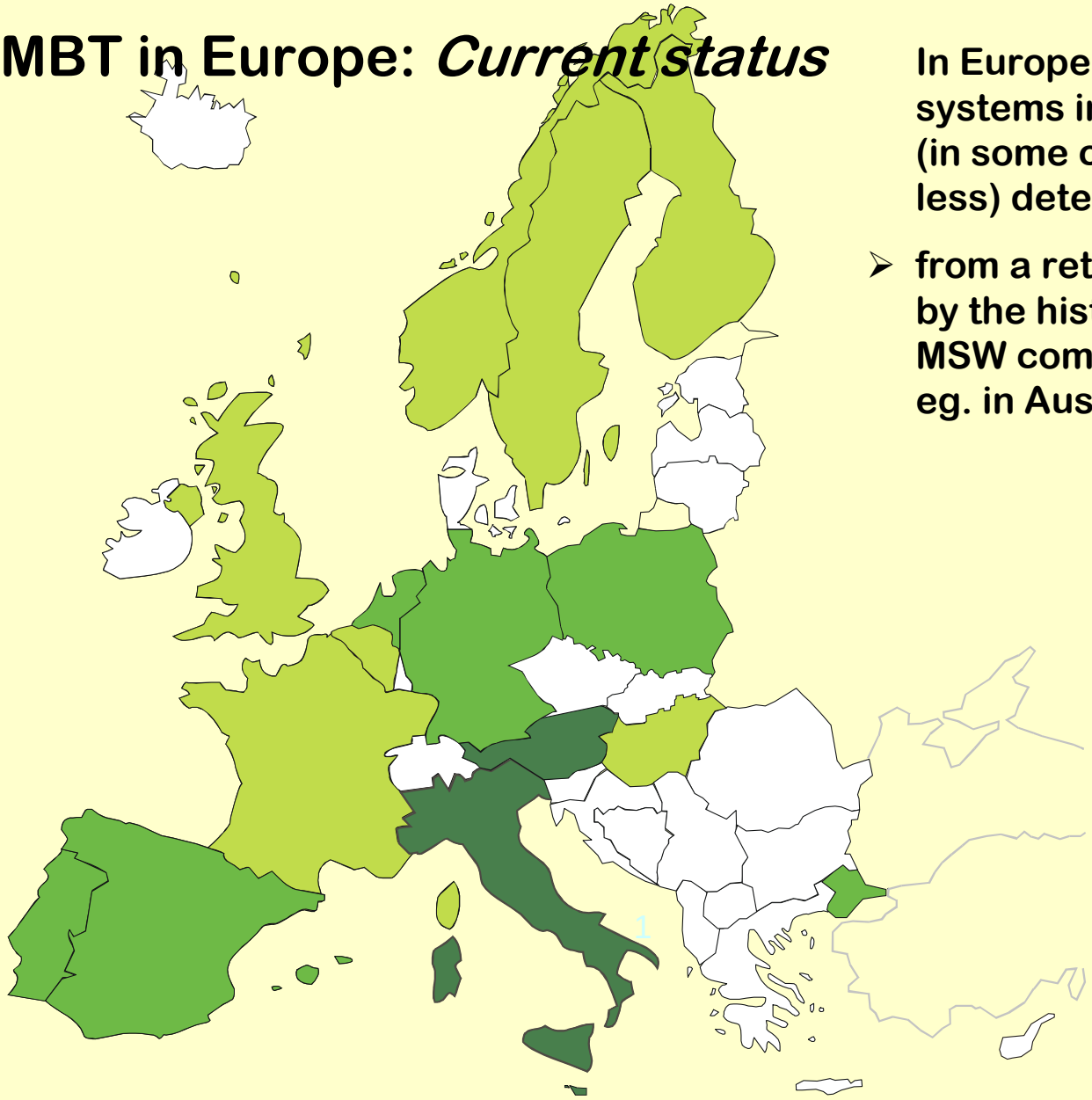
MBT in Europe: *Current status*

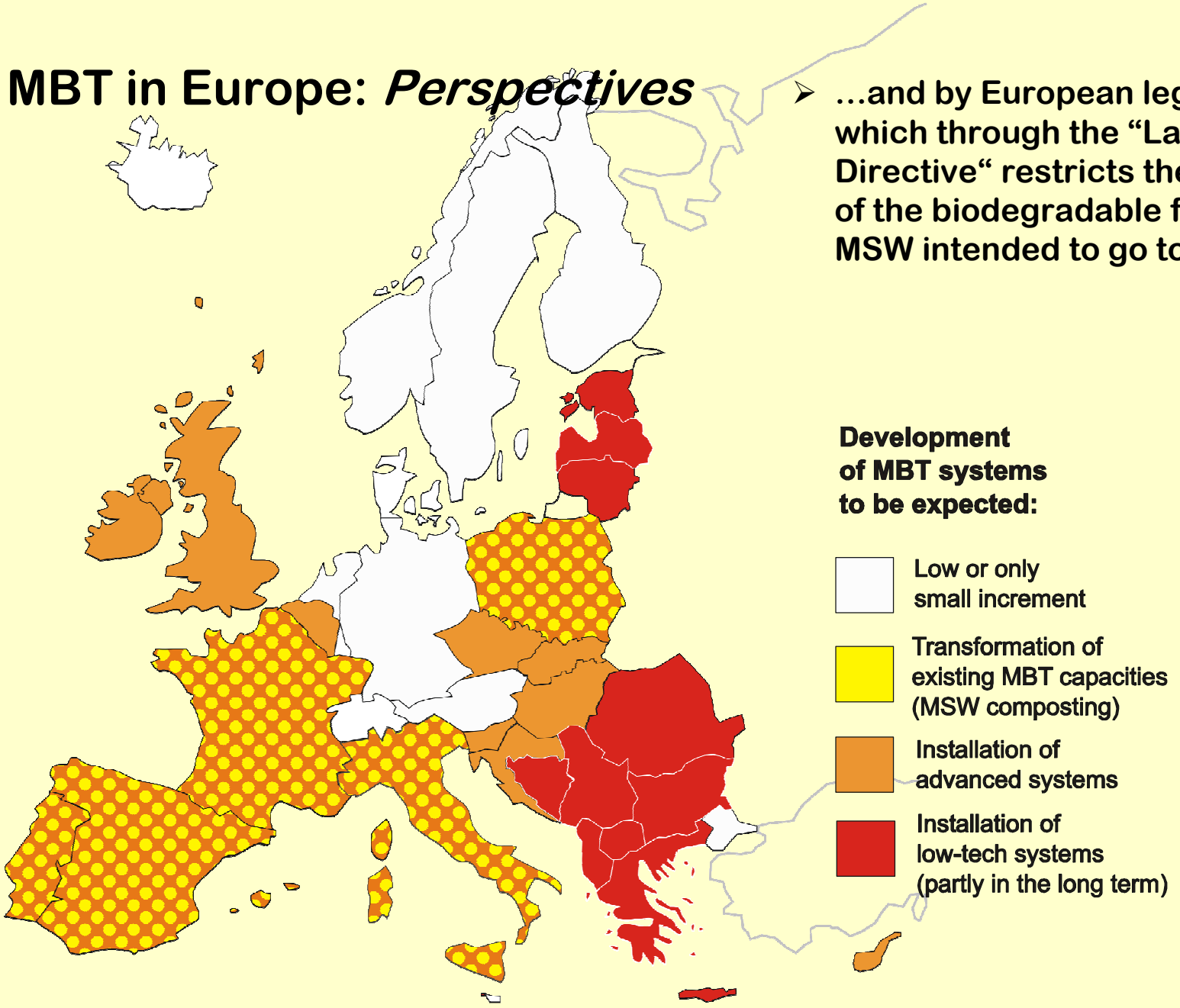


In Europe, the share of MBT systems in waste treatment is (in some countries more, in others less) determined by two factors:

- from a retrospective point of view, by the historical development of MSW composting with tradition eg. in Austria, Germany, Italy…

MBT in Europe: *Perspectives*

- …and by European legislation, which through the "Landfill Directive" restricts the proportion of the biodegradable fraction of MSW intended to go to landfill.



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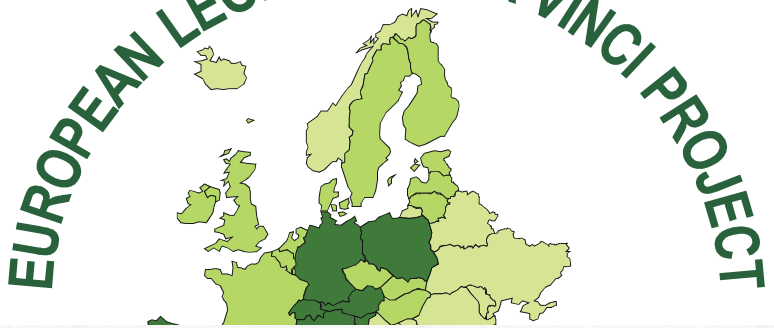
„The Book of Rubbish“

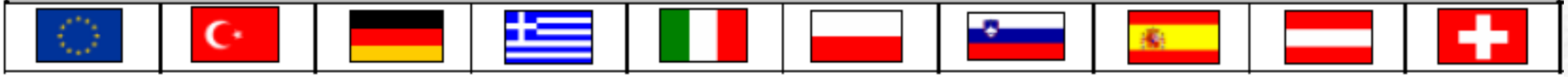
A Guide to the Basics of Waste Management

www.sunnyarea.eu



Vsebina

Information on *countries*



Information in *different languages*

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Zahvaljujem vama na vašoj pažnji!