

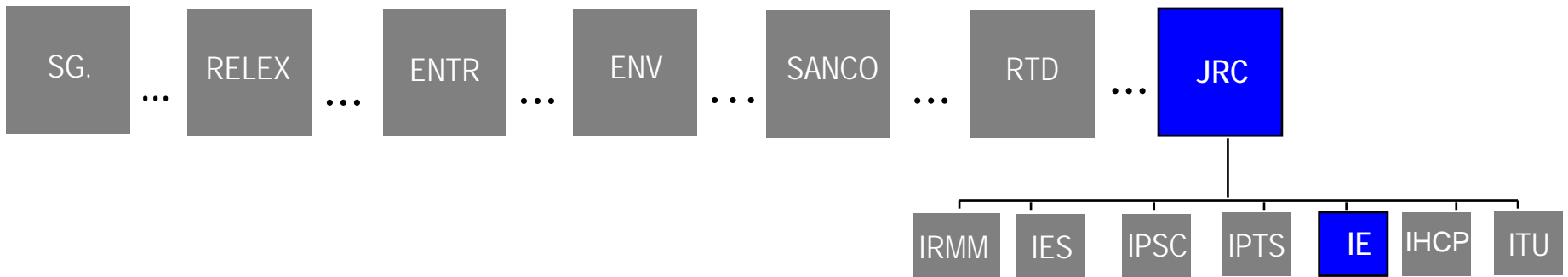
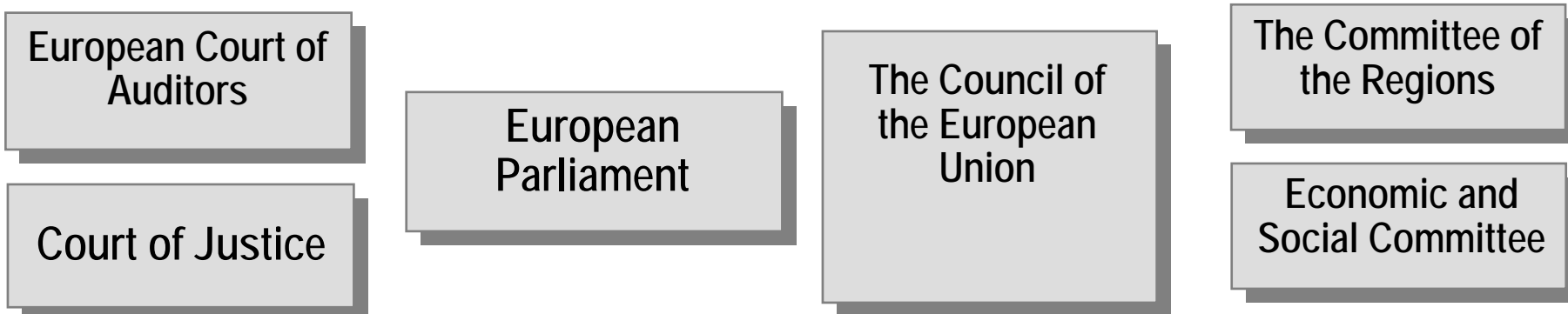
European Energy Policy Related to Renewables and Waste

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<http://ie.jrc.ec.europa.eu/>

(*with contributions by DG TREN)



7 Institutes in 5 Member States



IRMM - Geel Belgium

- Institute for Reference Materials and Measurements

Staff: \cong 250



IE – Petten, The Netherlands

- Institute for Energy

Staff: \cong 300



ITU - Karlsruhe Germany

- Institute for Transuranium elements

Staff: \cong 250



IPSC - IHCP - IES - Ispra Italy

- Institute for the Protection and the Security of the Citizen
- Institute for Health and Consumer Protection
- Institute for Environment and Sustainability

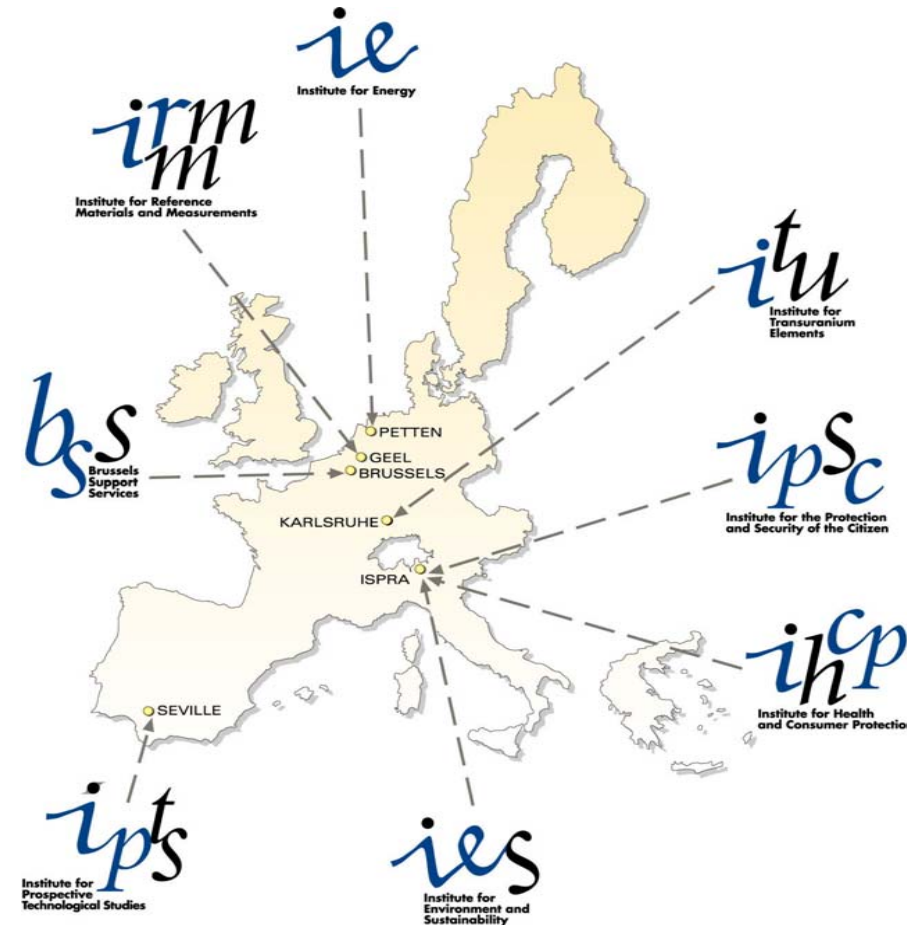
Staff: \cong 350, 250, 400



IPTS - Seville Spain

- Institute for Prospective Technological Studies

Staff: \cong 250



Total staff: ~ 2200 people

Overview of Presentation

- **EU Clean Energy policy overview**
- Implications of the new renewables directive on energy from waste
- The new waste framework directive
- The SET-Plan and the European Industrial Bioenergy Initiative

EU Clean Energy policy overview

The start of an EU energy policy:

COMMUNICATION FROM THE COMMISSION
20 20 by 2020 (COM (2008) 30)

meaning,

20% lower CO₂ emissions,

20% renewables contributing to total energy
consumption,

20% increase in energy efficiency

10% renewable fuels in transport

EU biofuel target harms poor countries

Today @ 09:34 CET

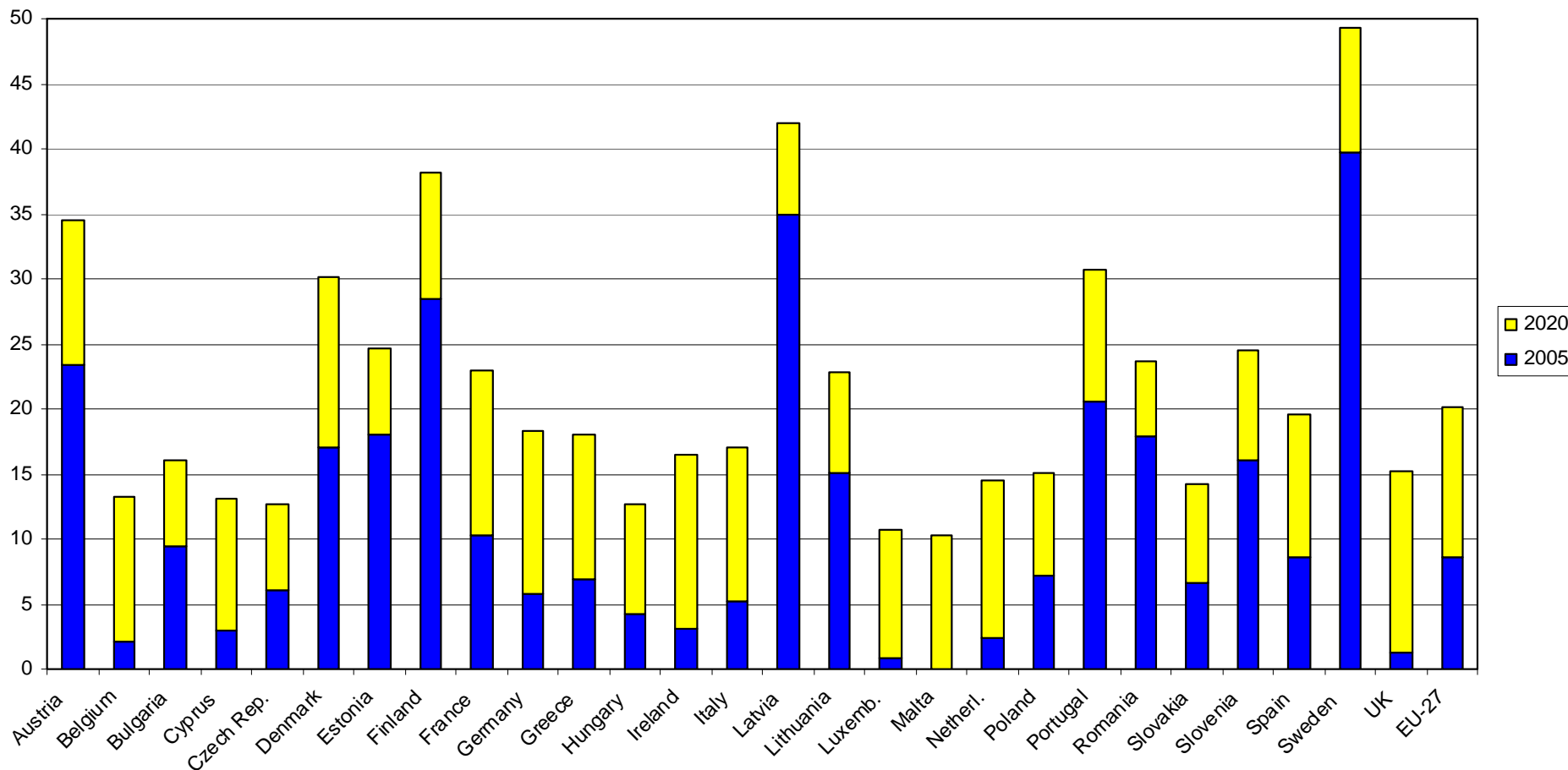
The EU decision to obtain 10% of all transport fuels from biofuels by 2020 is proving disastrous for poor countries, according to a report by ActionAid.

Millions of people are to go hungry as EU companies take millions of acres of land out of food production to grow biofuels for transport

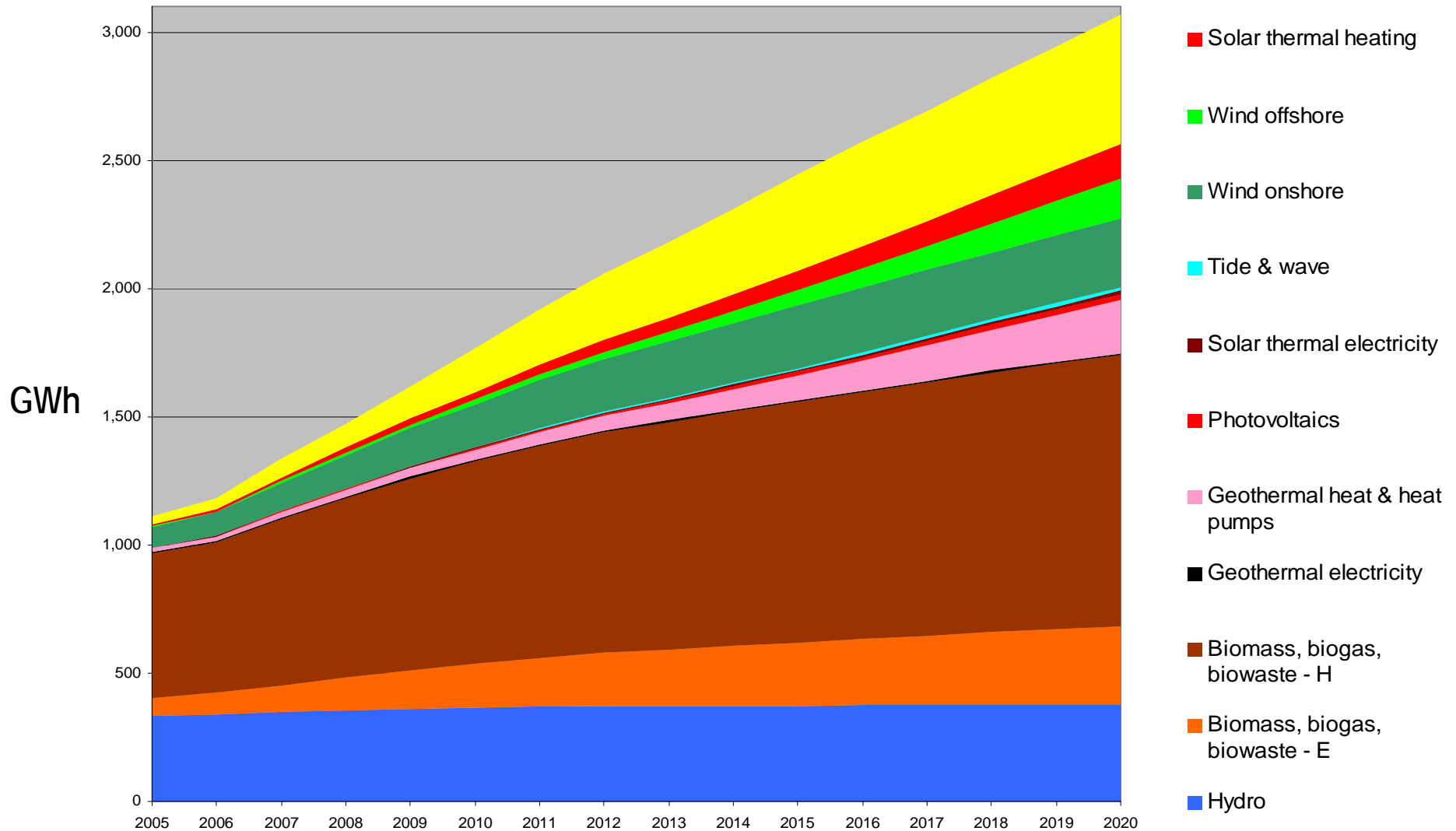
EUObserver 15 - 02 - 2010

Shares of renewable energy, 2005 and 2020

Mandatory national targets for renewable energy, 20% overall (from 8.5% in 2005), including 10% renewables fuels in transport.



How do we get there?



EU Clean Energy Policy Overview

Tools to achieve the objectives:

Directive on geological storage of CO₂ (2009/31/EC) - facilitating storage component of CCS (carbon capture and storage)

Emissions Trading Scheme (ETS) applied to the biggest emitters

Energy efficiency action plans at national level

Directive for renewables (2009/28/EC)

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The new Renewable Energies Directive (RES)

DIRECTIVE 2009/28/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 23 April 2009

on the promotion of the use of energy from renewable sources and amending and subsequently
repealing Directives 2001/77/EC and 2003/30/EC

(Text with EEA relevance)

RES Directive: Key Points

1. Sets **mandatory national targets** for RES shares, including **10% biofuels share**, in 2020 (*Art.3 and 5*)
2. Requires **National Action Plans** (*Art. 4*)
3. Standardises “**guarantees of origin**” (certifying the RES origin of electricity or heat) (*Art. 6, 7, 8 & 10*)
4. Enables the **transfer of guarantees of origin** to give Member States flexibility to meet their targets by developing cheaper non-domestic renewable energy (*Art. 9*)

RES Directive: Key Points

5. Reforms, or requires reforms of **administrative and regulatory barriers** to the growth of RES (*Art. 12*)
6. Requires improvements in **provision of information and training** regarding renewable energy (*Art. 13*)
7. Improves **renewables' access to the electricity grid** (*Art. 14*)
8. Creates a **sustainability regime for biofuels** (*Art. 15-18*)

Where does Waste fit in ?

- Good waste management reduces GHG emissions
- Energy recovered from waste replaces energy produced from fossil fuels (security of energy supply)
- Energy from the biodegradable component of waste (biomass) is renewable energy (~50%)

Where is Waste specifically included ?

- In almost all recently approved EU Directives

"biomass" means the biodegradable fraction of products, waste and residues from biological origin from agriculture (including vegetal and animal substances), forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste;

[Article 2e of the new renewables Directive - 2009/28/EC]

- The Biomass Action Plan

Waste is a key part of NREAP

National Renewable Energy Action Plans

Based on the Biomass Action Plan [from COM(2005) 628], the intention is to maximise sustainable utilisation of biomass for bioenergy.

National Biomass Action Plans (NBAP) produced by some Member States in 2008

Renewable Energies Directive 2009/28/EC

The Timetable:

25 June 2009	Entry into Force
June 2010	National Renewable Energy Action Plans Ready
December 2010	National Legislation implemented
2020	20% targets achieved - 10% for renewables in transport (per country)

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The Waste Framework Directive 2008/98/EC

Key points:

- 2020 recycling targets:
 - 50 % for households and similar waste streams:
 - 70 % for non-hazardous construction and demolition waste (Article 11)
- Member States to stick to binding five-stage hierarchy:
 - (a) prevention; (b) preparing for re-use; (c) recycling; (d) other recovery, e.g. energy recovery; and (e) disposal (Article 4)
- Incineration of MSW as "disposal" or "recovery" operation determined by "energy efficiency" formula in annex II*

The Waste Framework Directive 2008/98/EC

Incineration facilities for *MSW* only where their energy efficiency is equal to or above:

0.60 for installations in operation and permitted in accordance with applicable Community legislation before 1 January 2009,

0.65 for installations permitted after 31 December 2008, using the formula:

$$\text{Energy efficiency} = (E_p - (E_f + E_i)) / (0.97 \times (E_w + E_f))$$

Where:

E_p : annual energy produced as heat or electricity (calculated with energy from electricity multiplied by 2.6 and heat for commercial use multiplied by 1.1 (GJ/year))

E_f : annual energy input from fuels contributing to the production of steam (GJ/year)

E_w : annual energy in the waste calculated using the net calorific value of the waste (GJ/year)

E_i : annual energy imported, excluding E_w and E_f (GJ/year)

0.97 is a factor accounting for energy losses due to bottom ash and radiation.

The Waste Framework Directive 2008/98/EC

What happens now with the formula ?
When will “recovery” status of individual incinerators be known ?

European Commission (DG ENV) task to develop guidelines for application of formula, in consultation with stakeholders during 2010.

Some issues:

- system boundaries
- heat utilisation
- inputs to E_f and E_i
- calculating calorific value



“Recovery” Status !!!

What will be the reward ??

- freedom to “import” MSW for waste-to-energy plants leading to a market in waste
- anything else ??

Tighter Controls on Emissions !!

Existing EU Legislation:

Waste Incineration Directive (2000/76/EC)

“Guidance”:

Waste Incineration BREF

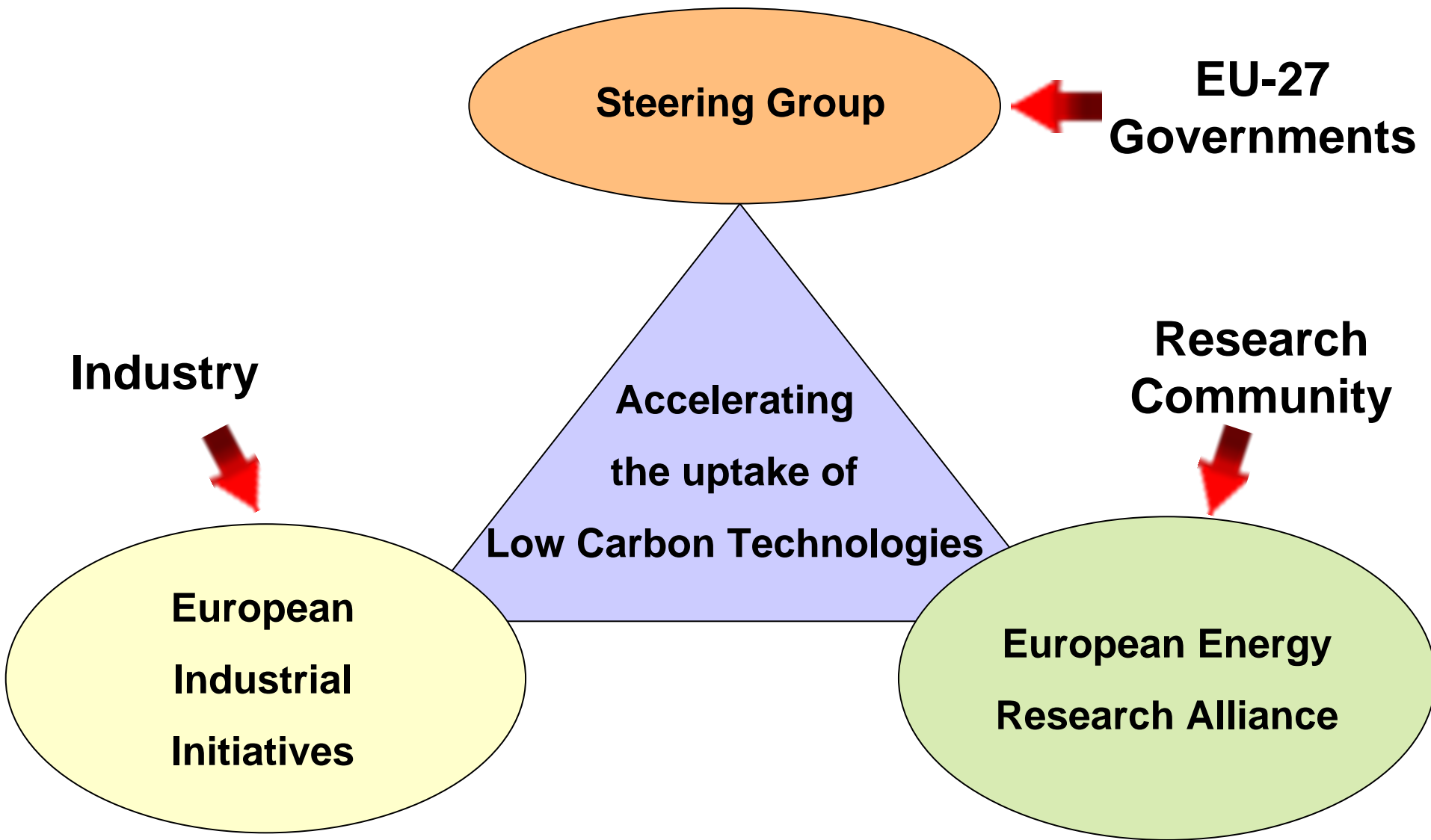
The Future:

The new Industrial Emissions Directive
(combining WID and IPPC/BREF)

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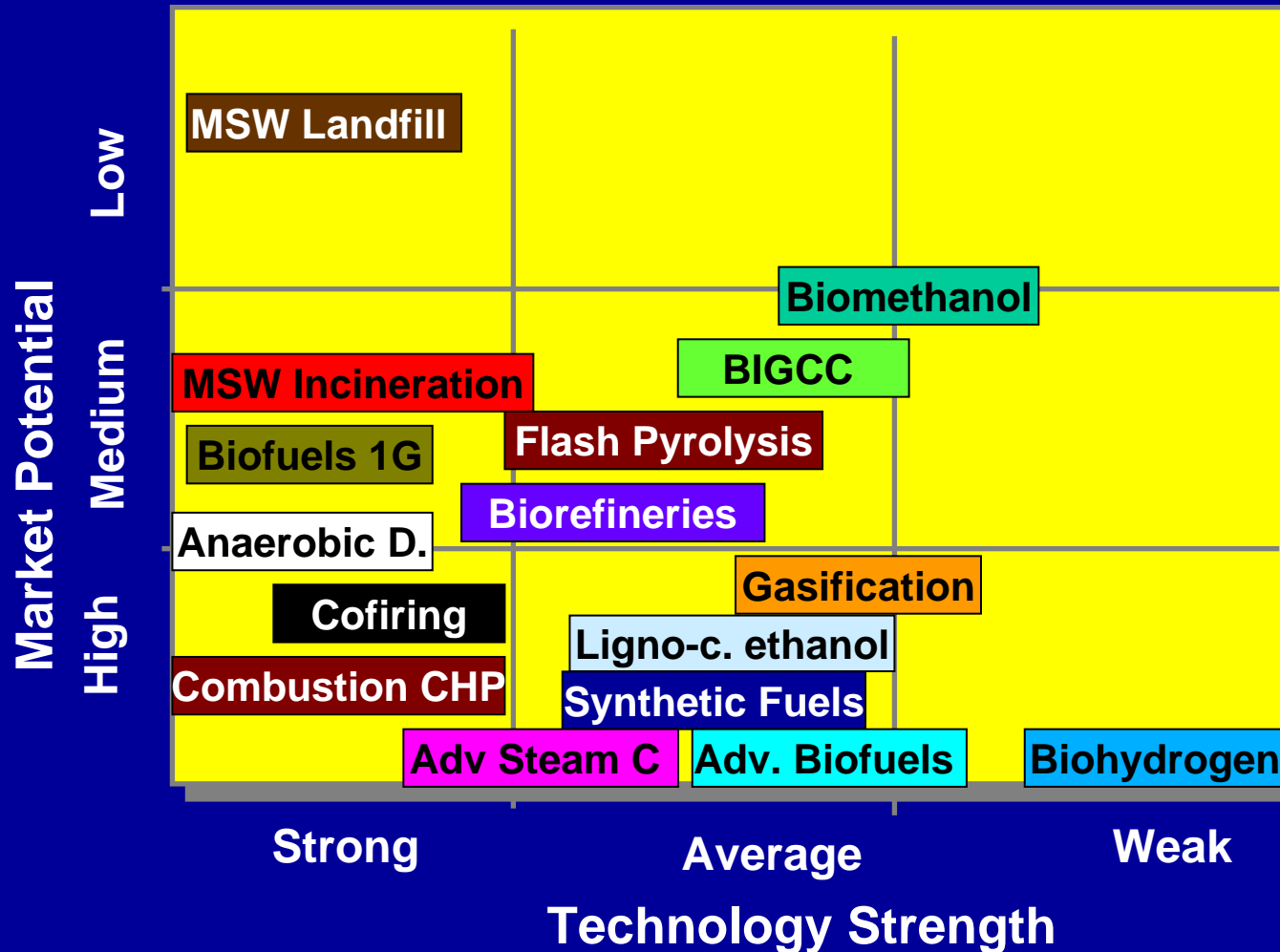
SET Plan



The European Industrial Bioenergy Initiative

- Under preparation in coordination with the Biofuels Technology Platform and other Biomass Associations
- Expected total recommended budget in the range of 6-8 billion €
- EC estimation at about 8 billion €
- Development of bio-resources (crops & waste) 1 billion €
- Implementation phase: 2010

Status of Processes



Should we pick the winners?

Do we have the necessary funds between industry & government for the development needs?

Summary

The EU has rapidly developed an integrated energy policy with a focus on reducing fossil CO₂ emissions

Legislation is in place with mandatory targets to reduce CO₂ emissions, increased energy efficiency and increase use of renewables.

Waste (MSW) is recognised as a key source of renewable energy

There will be increased challenges for the waste-to-energy sector to improve energy efficiency (recovery status) and reduce emissions still further

Thank you for your attention