

## Flexible Kyoto Mechanisms – Recent Developments and Potential Impact on the Electricity Industry in the New Member States

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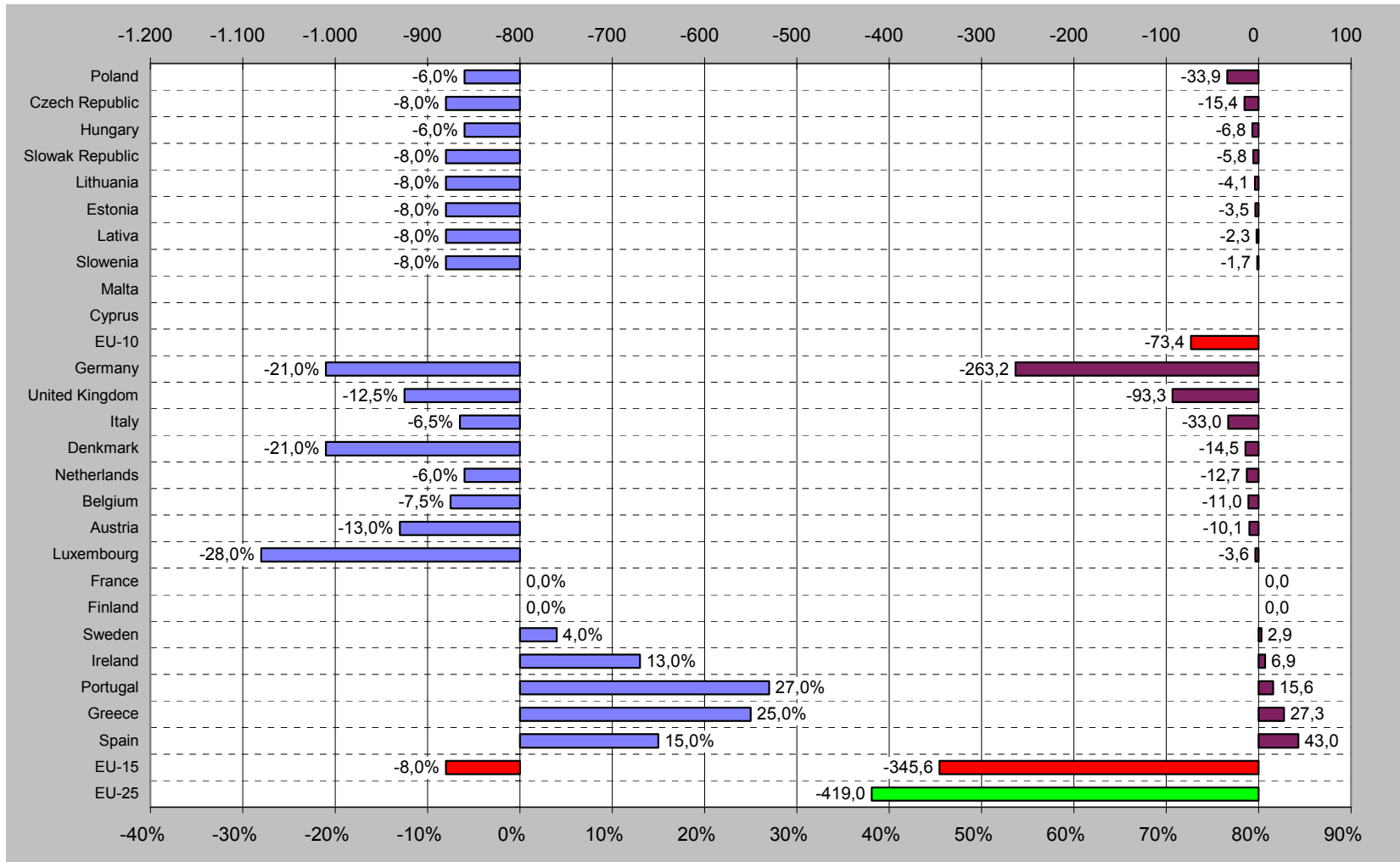
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## Flexible Mechanisms of the Kyoto Protocol

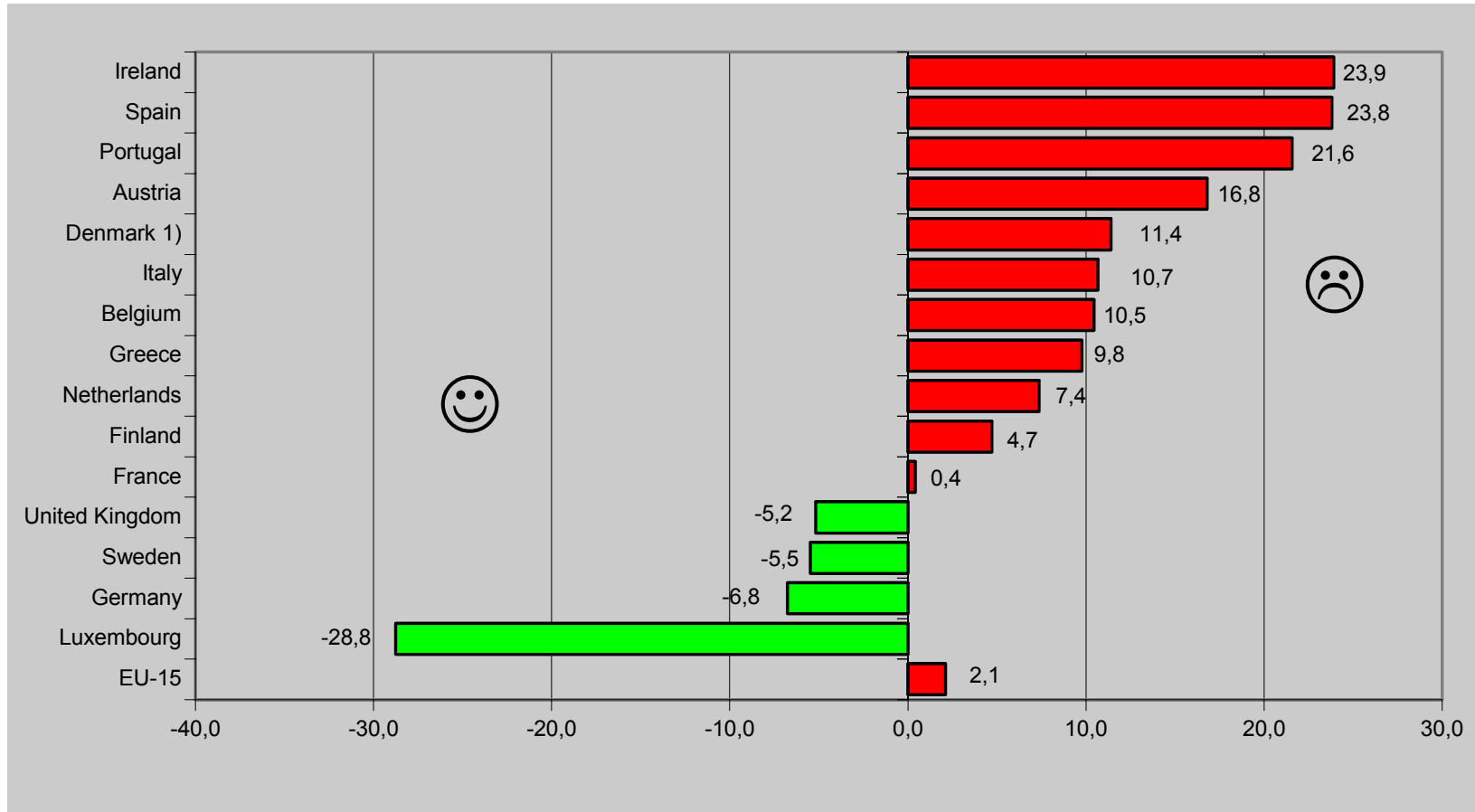
- ▶ ET: emissions trading (Art. 17) – inventory based, trading of Assigned Amount Units (AAU) within Annex I countries
- ▶ JI: joint implementation (Art. 6) – project based, trading of Emission Reduction Units (ERU) within Annex I countries
- ▶ CDM: clean development mechanism (Art. 12) – project based, trading of Certified Emission Reductions (EUR) between Annex I and non-Annex I countries
- ▶ EU Bubble (Art. 4) – “fulfil their commitments under Article 3 jointly”

## Targets and required reduction or stabilisation, 2008-2012



Sources: EEA (2004). Analysis of gas emission trends and projections in Europe 2003; own calculations

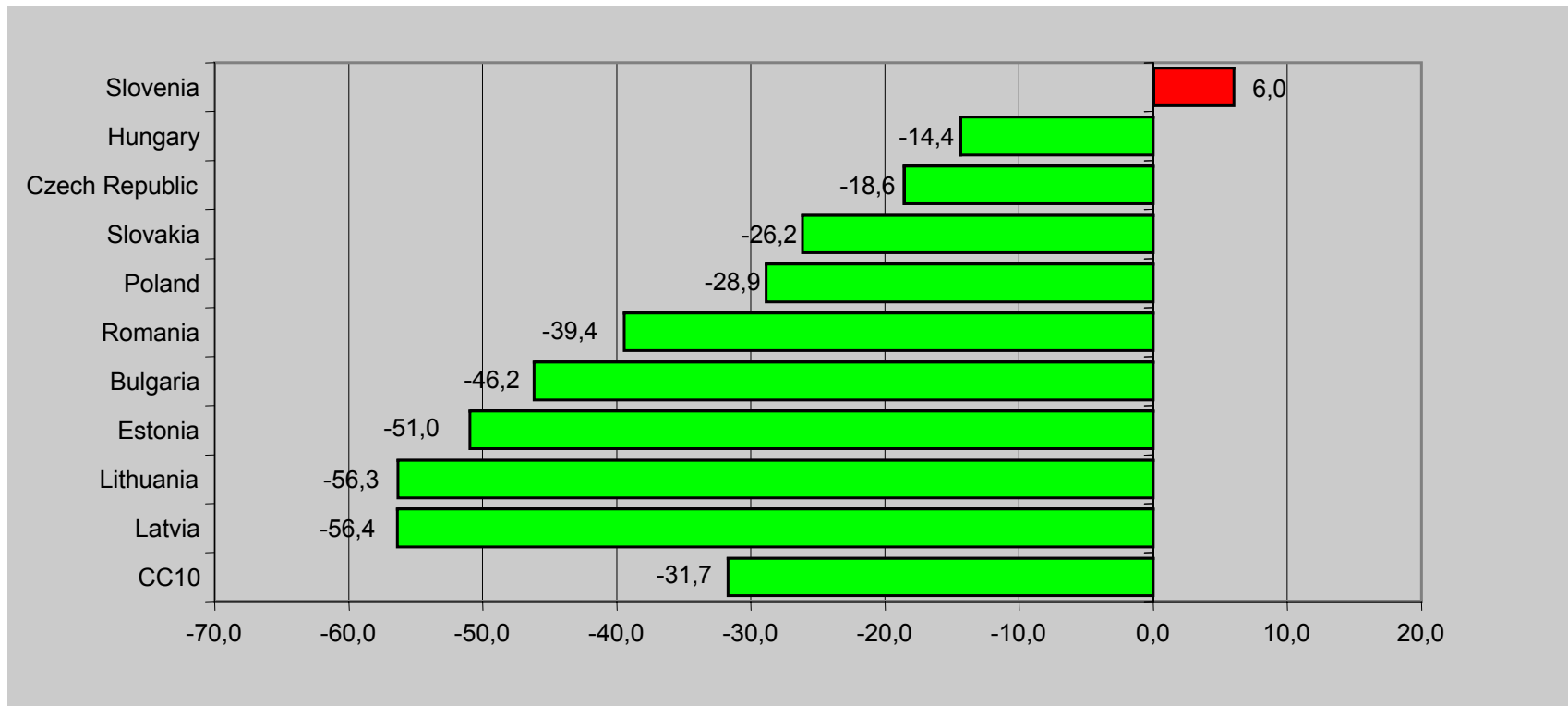
## Distance-to-target indicators (in index points) for the Kyoto Protocol and the EC burden sharing targets of EC Member States, 2001



1) The Danish DTI is +2.6 index points, if Danish GHG emissions are adjusted for electricity trade in 1990.

Source: EEA (2004). Analysis of gas emission trends and projections in Europe 2003

## Distance-to-target indicators (in index points) for the Kyoto Protocol of new Member States, 2001



Source: EEA (2004) - Analysis of gas emission trends and projections in Europe 2003

## The EU Emissions Trading Scheme

- ▶ **An EU-wide scheme for all 15+10 EU member states**
- ▶ **Based on the EU Directive 2003/87/EC as of 13 October 2003**
  - ▶ Downstream scheme for large CO<sub>2</sub> emitters
  - ▶ Pilot phase 2005-2007, first period 2008-12 (= Kyoto period)
  - ▶ 95 to 90% free allocation of allowances to installations, based on National Allocation Plans
  - ▶ Strong compliance regime (penalties of 40 €/t CO<sub>2</sub>e in the pilot phase and 100 €/t CO<sub>2</sub>e beyond 2007)
- ▶ **Many degrees of subsidiarity for national implementation**
- ▶ **Notification and approval of National Allocation Plans (NAPs) by the Commission**
- ▶ **In most EU member states no tradition in using flexible mechanisms in environmental policies and legislation**

## The EU Emissions Trading Scheme Legal Framework

- ▶ EU ETS Directive (2003/87/EC, 13 October 2003).
- ▶ Commission Guidance on National Allocation Plans (COM(2003) 830 final, 7 January 2004)
- ▶ Commission Guidelines for monitoring and reporting (2004/156/EC, 29 January 2004)
- ▶ EU Linking Directive (2004/101/EC, 27 October 2004)
- ▶ Commission Regulation for a standardised and secured system of registries (agreed, 24 June 2004)

## Many degrees of subsidiarity for national implementation

- ▶ Definition of installation
- ▶ Implementation of opt-in, opt-out and pooling provision
- ▶ National Allocation Plans
  - ▶ Determining the total quantity of allowances
  - ▶ Allocation of allowances to individual installations
- ▶ Treatment of closures
- ▶ Treatment of new entrants, reserves
- ▶ Banking
- ▶ Special provisions for early action, CHP, nuclear etc.

## Status of National Allocation Plans, 27 October 2004

<b>Accepted</b>	<b>Accepted with technical modifications</b>	<b>Not yet assessed</b>	<b>Not yet notified</b>
Belgium Denmark Ireland Luxembourg Netherlands Portugal Sweden	Austria Finland France Germany United Kingdom	Italy Spain	Greece
Estonia Latvia Slovak Republic Slovenia		Cyprus Czech Republic Hungary Lithuania Malta Poland	

## Definition of installation

- ▶ **Wide: all combustion installations in all sectors**
  - ▶ Belgium, Denmark, Finland, Ireland, Netherlands
- ▶ **Medium: steam crackers & melting furnaces**
  - ▶ Austria, France, Germany, Luxembourg, Portugal, Sweden, United Kingdom
- ▶ **Narrow: only combustion installation in the sectors mentioned in Annex I of the Directive**
  - ▶ Italy, Spain

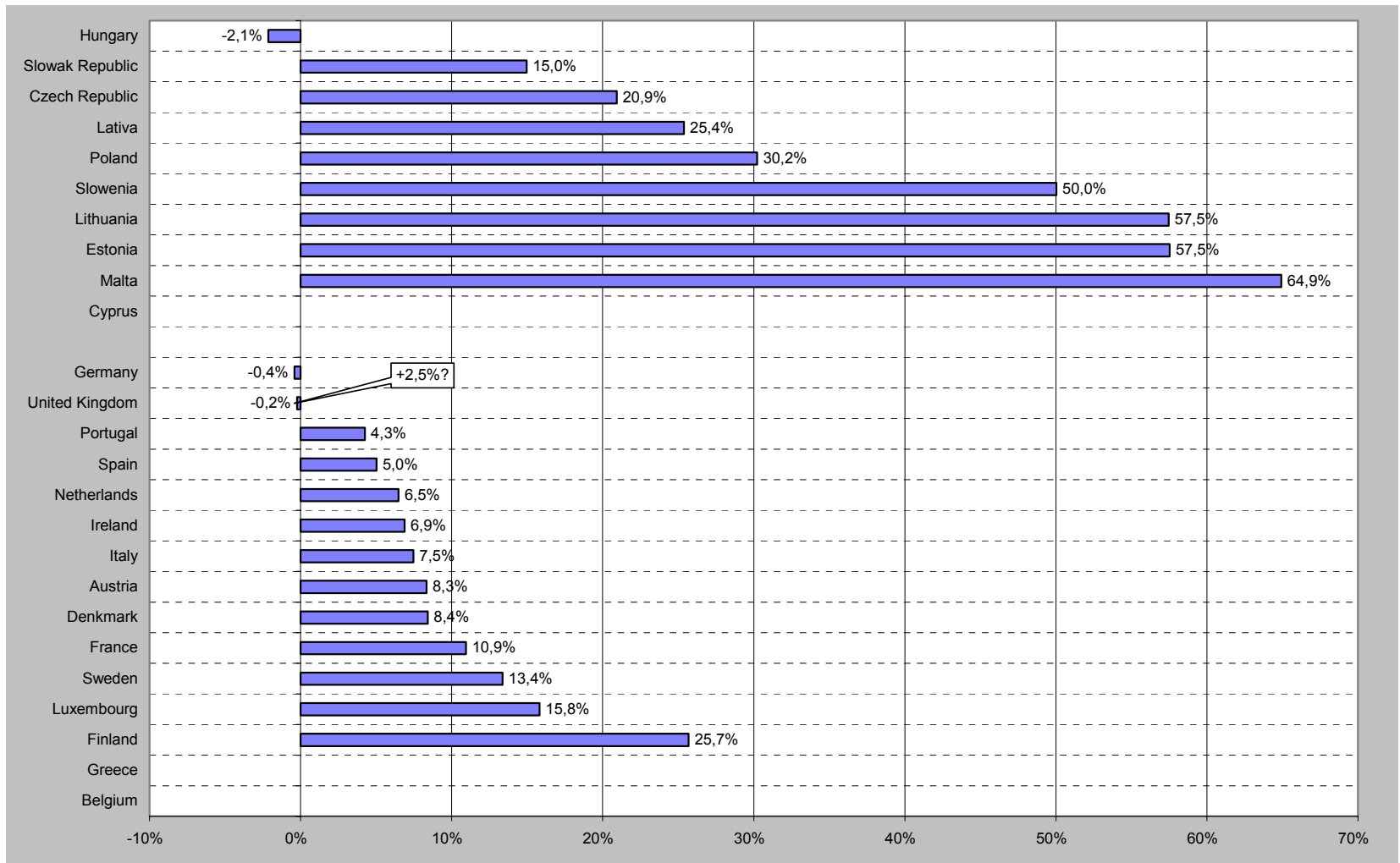
## Provisions on opt-in, opt-out and pooling

Opt-in		Opt-out		Pooling	
Yes	No	Yes	No	Yes	No
Austria Finland Sweden	Belgium Denmark France Germany Ireland Italy Luxembourg Netherlands Portugal Spain United Kingdom	Belgium France Netherlands United Kingdom	Austria Denmark Finland Germany Ireland Italy Luxembourg Portugal Spain Sweden	Austria Denmark France Germany Ireland Italy Poland Portugal Spain United Kingdom	Sweden
Latvia Lithuania Slovenia	Czech Republic Estonia Hungary Malta Poland Slovak Republic	Czech Republic Poland	Estonia Hungary Latvia Lithuania Malta Slovak Republic Slovenia	Czech Republic Hungary Lithuania Slovenia	Estonia Malta Slovak Republic

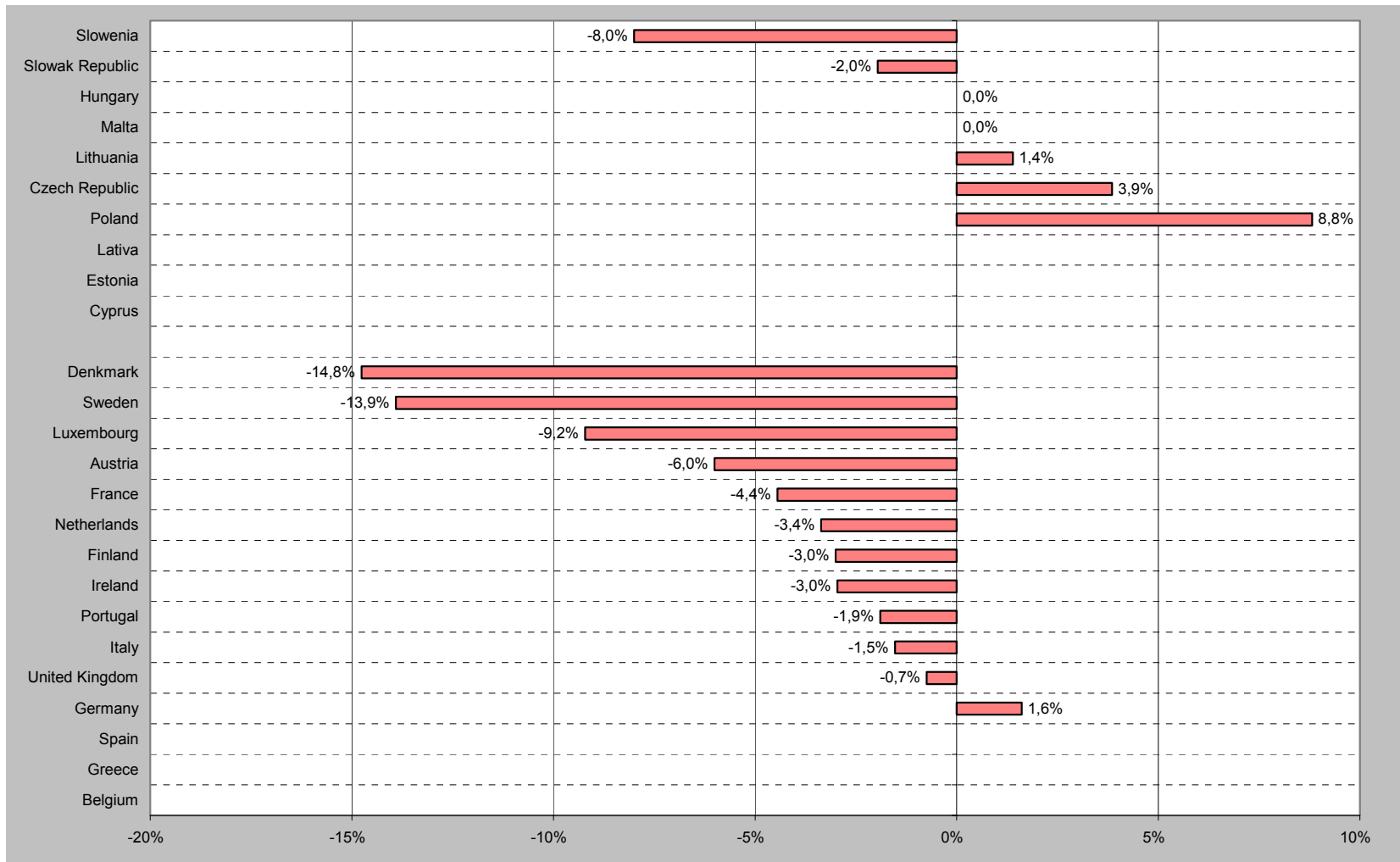
## Number of installations & share of emissions

	No	Opt-out	Opt-in	Total	share of CO <sub>2</sub> emissions
<b>EU-25</b>	<b>9.913</b>	<b>345</b>	<b>314</b>	<b>9.882</b>	
<b>EU-15</b>	<b>7.653</b>	<b>124</b>	<b>276</b>	<b>7.805</b>	
Austria	209		1	210	43,0%
Belgium	360			360	
Denmark	357			357	62,0%
Finland	485		209	694	59,0%
France	643			643	25,0%
Germany	2.419			2.419	59,0%
Greece					
Ireland	111			111	52,0%
Italy				0	42,0%
Luxembourg	19			19	28,0%
Netherlands	333	58		275	50,0%
Portugal	239			239	42,5%
Spain	1.100			1.100	41,5%
Sweden	300		66	366	30,0%
United Kingdom	1.078	66		1.012	46,0%
<b>EU-10</b>	<b>2.260</b>	<b>221</b>	<b>38</b>	<b>2.077</b>	
Cyprus	13			13	
Czech Republic	477			477	
Estonia	43			43	69,0%
Hungary	261			261	
Latvia	96		23	119	38,0%
Lithuania	107			107	38,9%
Malta	2			2	
Poland	945	221		724	
Slovak Republic	236			236	52,3%
Slovenia	80		15	95	60,0%

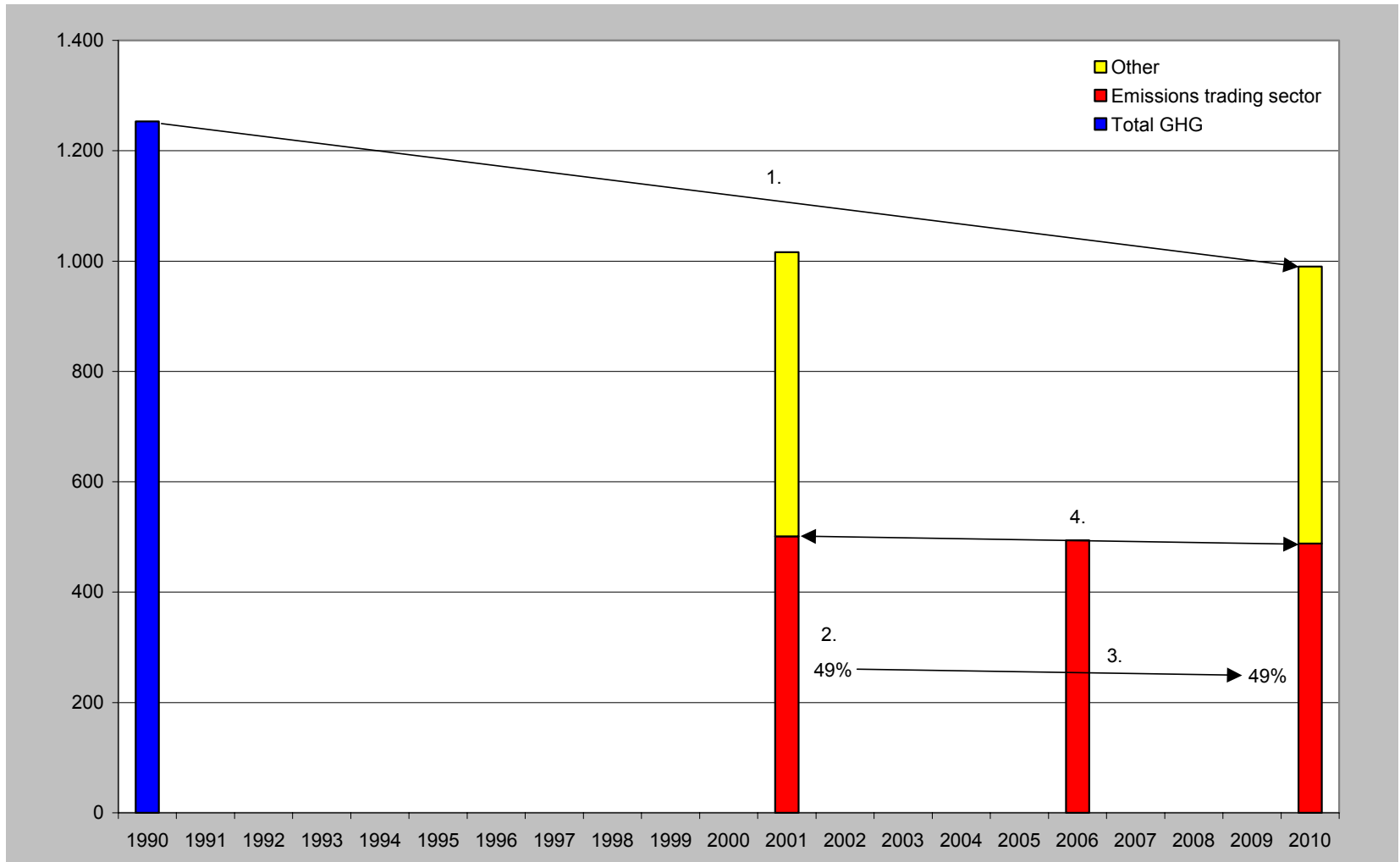
## Allocation compared to base period



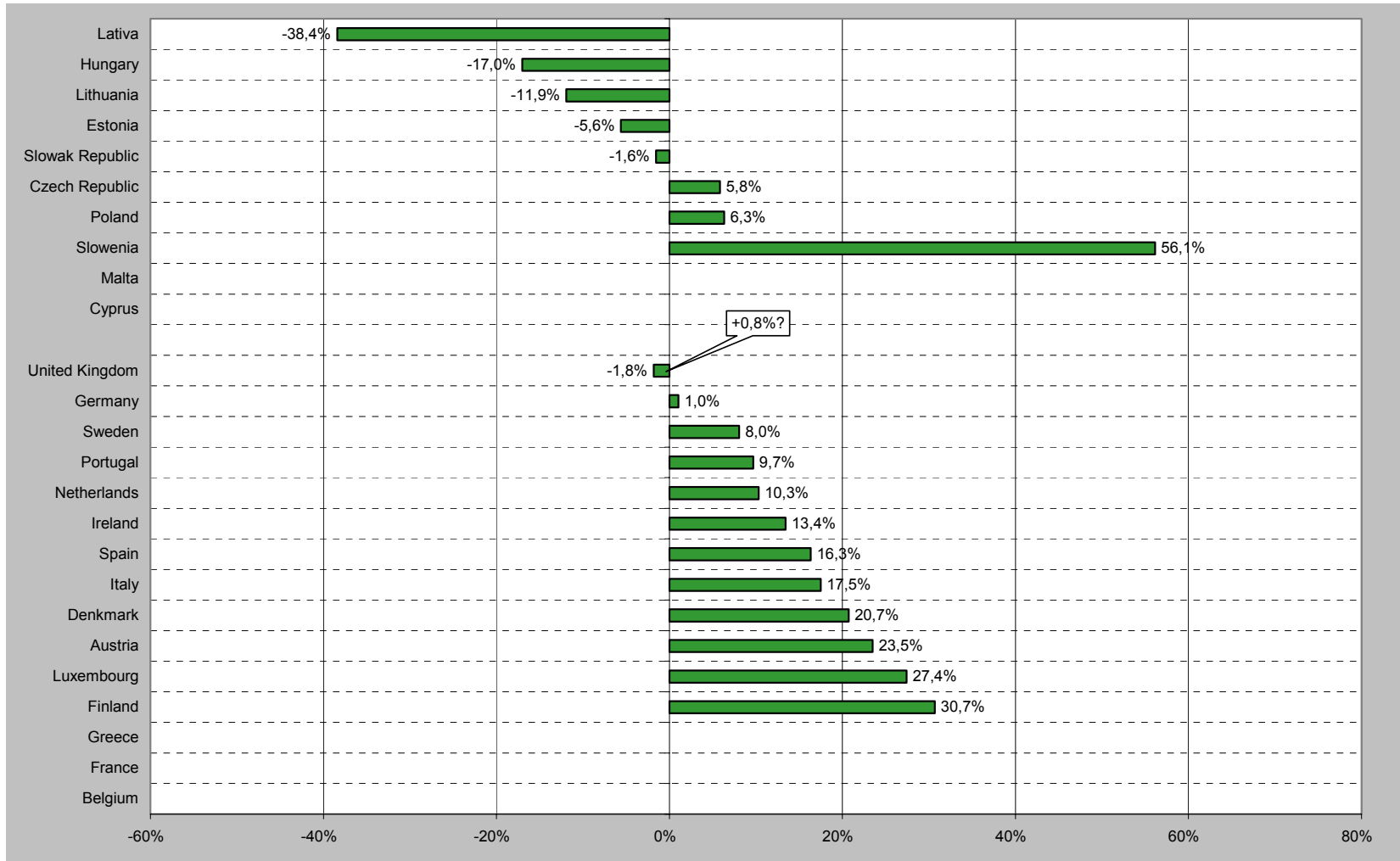
## Allocation compared to projection for 2006



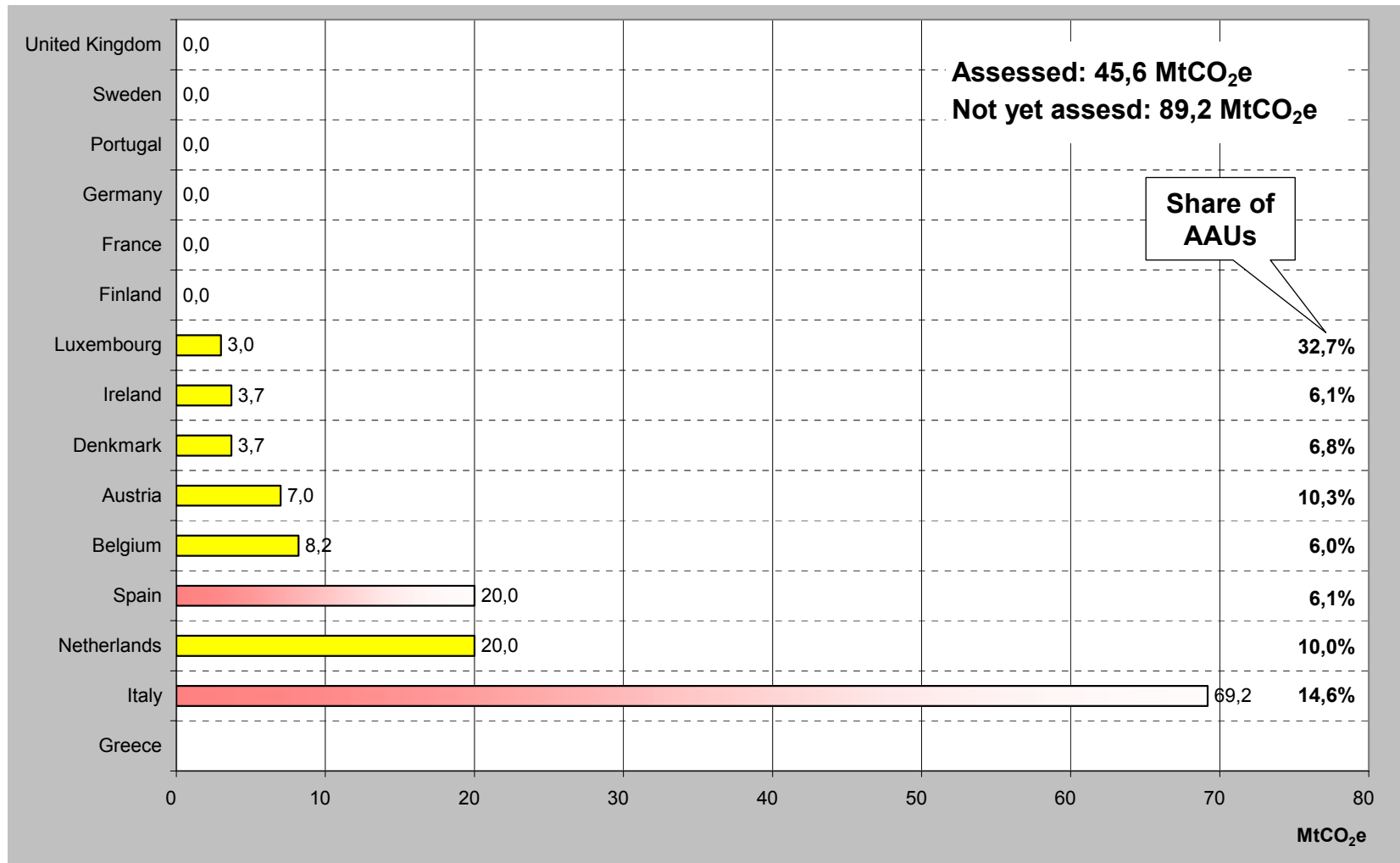
## Calculation of “2006 target”



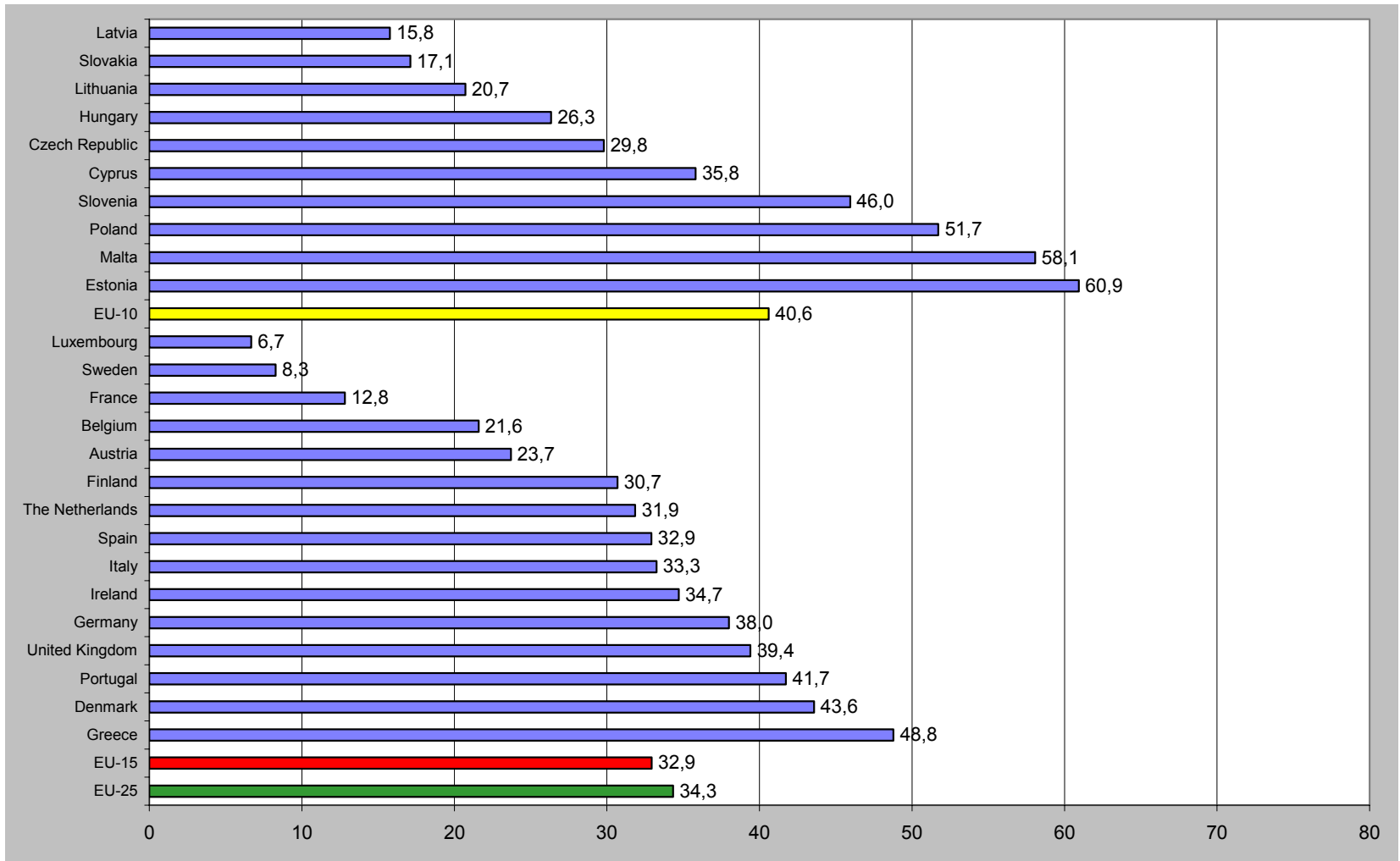
## Allocation compared to “2006 target”



## Intended use of flexible Kyoto Mechanisms

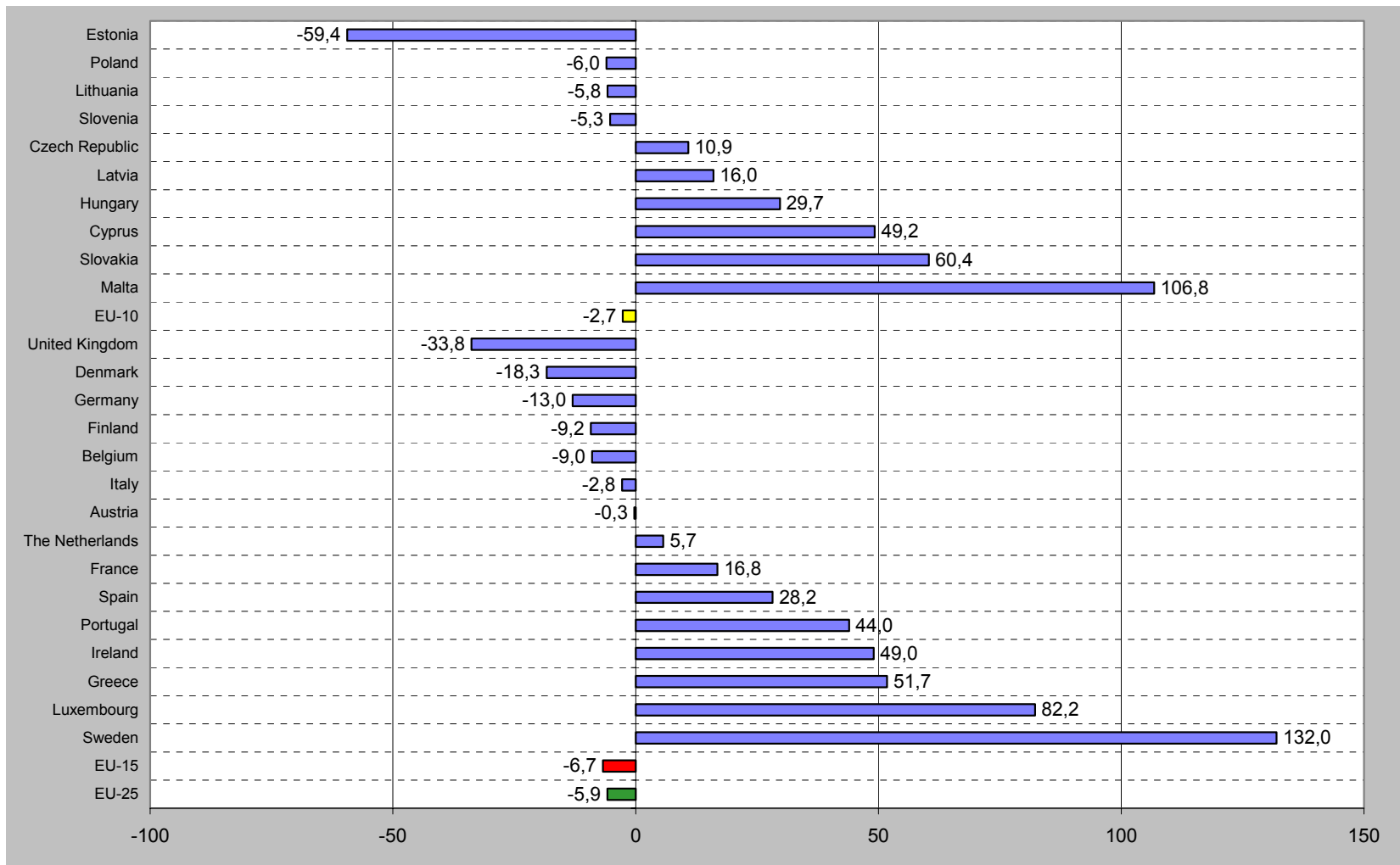


## Share of electricity and heat production in total CO<sub>2</sub> emissions, 1990 (%)

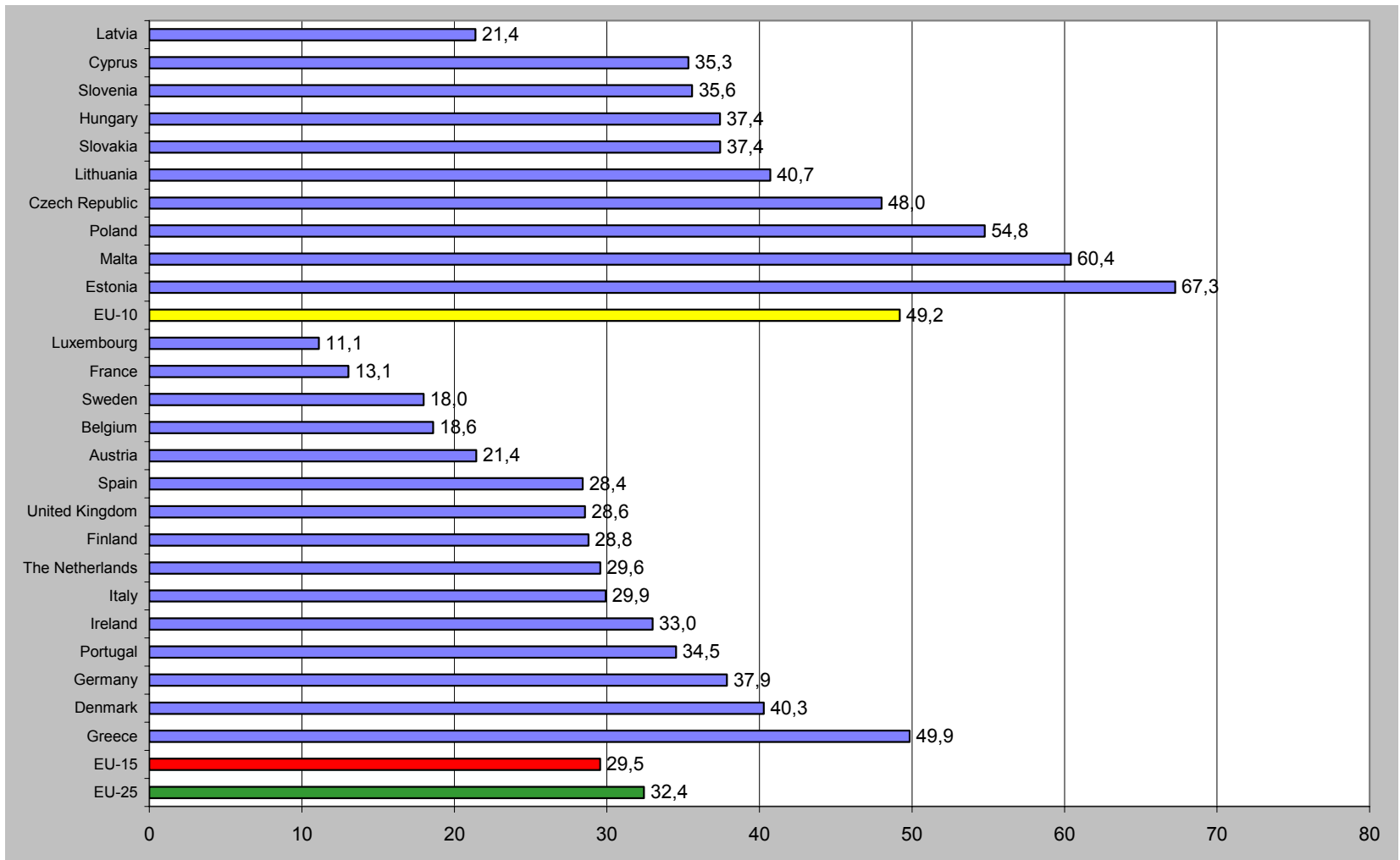


Source: EC (2003). European Energy and Transport Trends to 2020

## Change between 1990 and 2010 in CO<sub>2</sub> emissions from electricity and heat production (%)

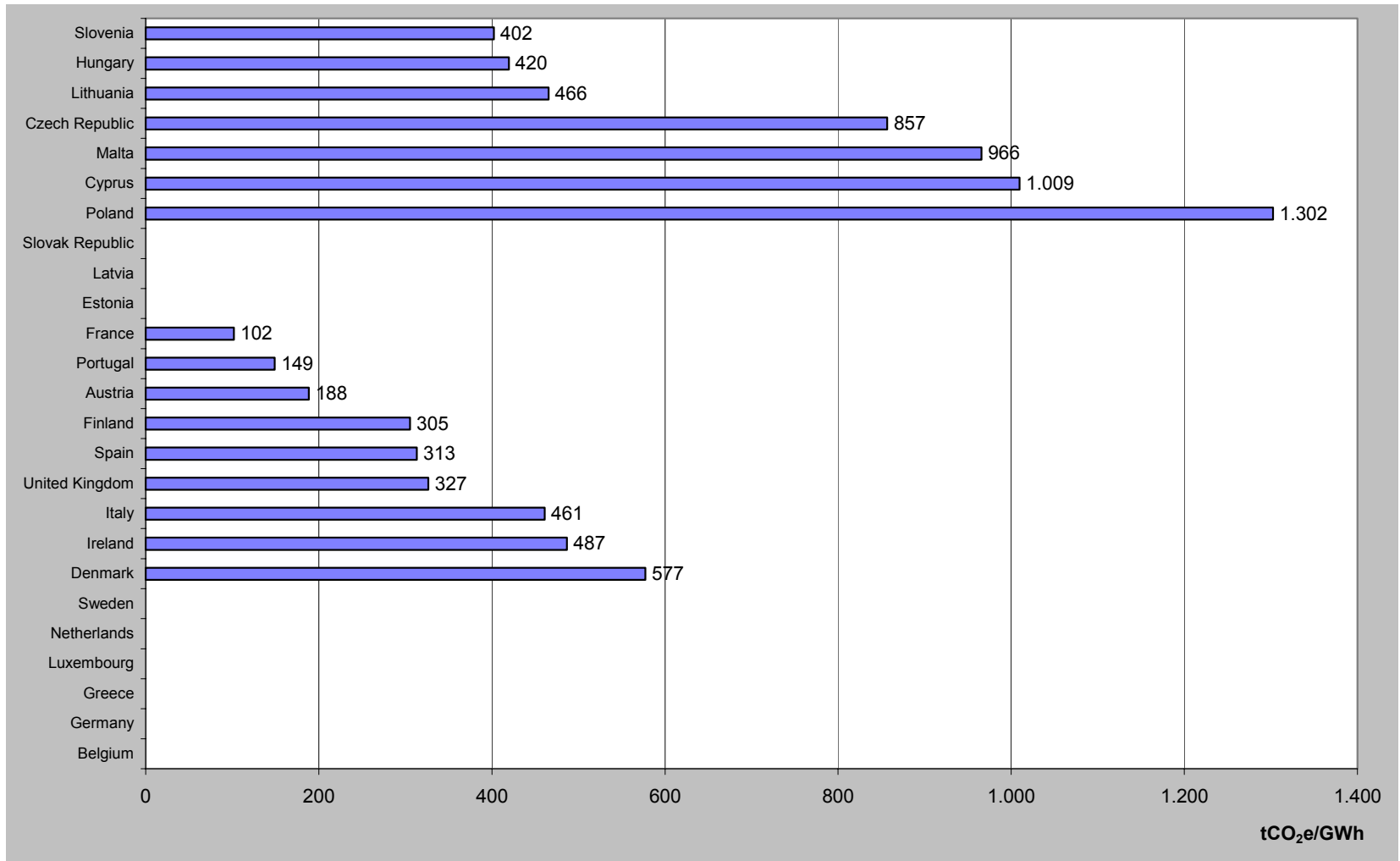


## Share of electricity and heat production in total CO<sub>2</sub> emissions, 2010 (%)



Source: EC (2003) - European Energy and Transport Trends to 2030

## Specific allocation for electricity generation



Sources: EC (2003) European Energy and Transport Trends to 2020; NADs; own calculations

## Potential impacts on the electricity industry in the new Member States

- ▶ It will be by far the largest player in emissions trading in the new member states
- ▶ Participation in joint implementation as a host is not allowed for all installations which are covered by the EU ETS
- ▶ If the NAPs are not rejected, electricity generation will be endowed with more allowances than needed; correspondingly they will be net-sellers
- ▶ The EU ETS will give incentives for generation technologies and fuels with less CO<sub>2</sub> emissions: CCGT, renewables etc.
- ▶ Investment decision might, however, be postponed until first experiences are gained with emissions trading (2006 onwards)

## Conclusions

- ▶ Most of the old EU Member States are not on track to achieve their burden sharing targets; the EU ETS was designed to bring the EU back on track
- ▶ However, the contribution from the EU ETS will be small
  - ▶ Too much heterogeneity in design options
  - ▶ Too generous allocation
- ▶ Improvements for the second period are needed
  - ▶ Homogeneous definition of installations
  - ▶ Harmonisation (benchmarks, closure & transfer rules etc.)
  - ▶ Stronger assessment of NAPs
- ▶ Despite the flaws of the current system it will create a new currency (EUA) which will change the incentive structure in electricity generation and all covered sectors substantially towards more climate friendly electricity generation in the long run

**Thank you for your attention!**

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