



# Current promotion strategies

RES-E, CHP, DSM and CLIMATE CHANGE.

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## RES-E POLICY IN THE EU

- The EU Renewable Electricity Directive
- Classifying RES-E Policy Support Mechanisms
- Policy Schemes in the EU: Present and future

## CLIMATE POLICY

- The CO<sub>2</sub> Directive.
- The Linking proposal
- Brief overview of Climate Policy in MS.

## ENERGY EFFICIENCY

## CHP PROMOTION POLICY



## The EU Renewable Electricity Directive

### RES-E Directive

- Indicative targets for EU and for MMSS
- National support schemes and EU community framework
- Mandatory guarantees of origin (GOs)
- Ensure grid access
- Reporting obligations for the Commission and for MMSS.



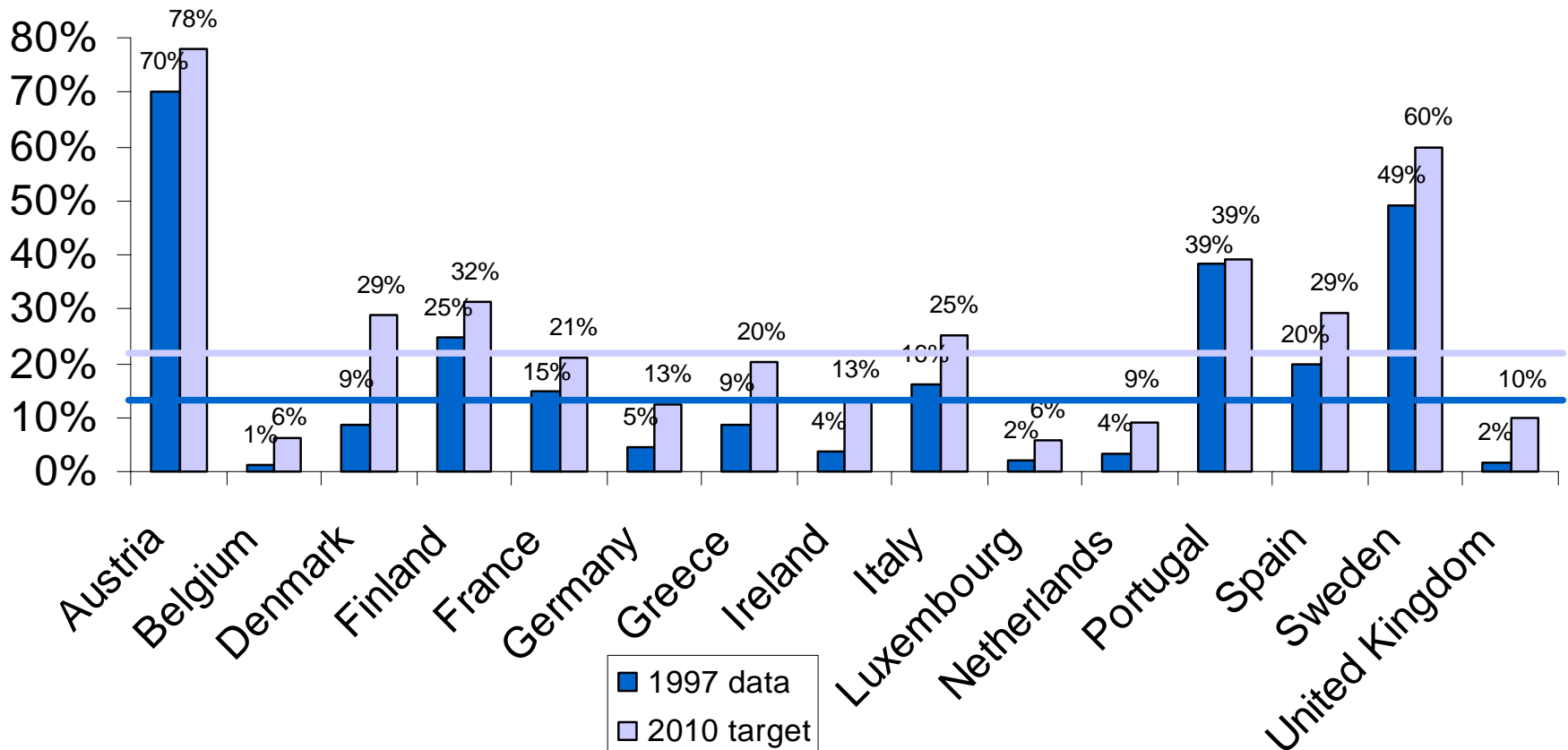
## Indicative targets

2010 (%)	RES-E 97 (%)	Target 2010 (%)	RES-E 97	Target
Austria	70	78.1	10.7	21.1
Belgium	1,1	6.0	0.9	5.8
Denmark	8,7	29.0	8.7	29.0
Finland	24,7	31.3	10.4	21.7
France	15	21.0	2.2	8.9
Germany	4,5	12.5	2.4	10.3
Greece	8,6	20.1	0.4	14.5
Ireland	3,6	13.2	1.1	11.7
Italy	16	25.0	4.5	14.9
Luxembourg	2,1	5.7	2.1	5.7
Netherlands	3,5	9.0	3.5	12.0
Portugal	38,5	39.0	4.8	21.5
Spain	19,9	29.4	3.6	17.5
Sweden	49,1	60.0	5.1	15.7
U.K.	1,7	10.0	0.9	9.3
<b>E.U.</b>	<b>13,9</b>	<b>22</b>	<b>3.2</b>	<b>12.5</b>



## RES-E DIRECTIVE

**EU target: from 14% to 22%**





## RES-E DIRECTIVE

- **Mandatory guarantees of origin (GOs)**

By 10/27/2003 at latest MMSS shall ensure that the origin of RES-E can be guaranteed as such according to objective, transparent and non-discriminatory criteria laid down by each MMSS.

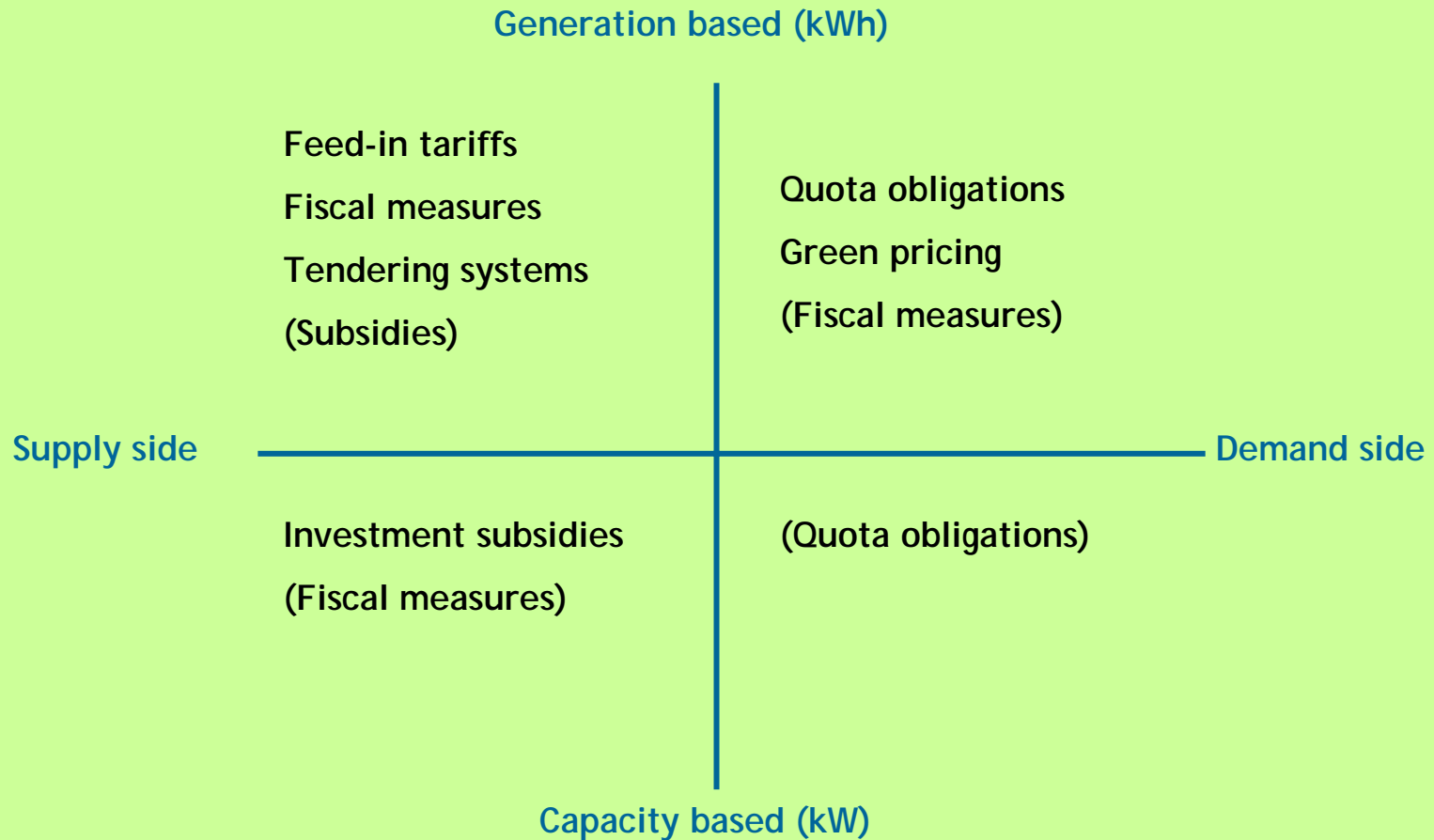
- **Ensure grid access**

MMSS shall take the necessary measures to ensure that transmission system operators and distribution system operators in their territory guarantee the transmission and distribution of RES-E.

- **Reporting obligations for the Commission and for MS:**



## Classifying RES-E Policy Support Mechanisms





## RES-E national support schemes: situation 2003

supply	<p><b>Feed-in tariff / green prices</b></p> <p>Germany, Austria, Spain, Portugal, Greece, Finland, France, Netherlands Sweden, Denmark</p>	<p><b>Tender</b></p> <p>Ireland France (wind)</p> <p><b>Obligation for producers</b></p> <p>Italy</p>
demand	<p><b>Price support of the demand</b></p> <p>Netherlands</p>	<p><b>Obligation (%) for consumers or suppliers</b></p> <p>UK Belgium</p>
	price	quantity





Countries \ Schemes	Investment Subsidies	Feed-in	Quota Obligation	Tendering / Bidding	Fiscal or Financial	Green Pricing
Austria	Orange	Orange			Orange	
Belgium	Orange	Orange	2002-All		Orange	
Denmark	Orange	Orange	*2004-All		Orange	
Finland	Orange	Orange				Orange
France						
Germany	Orange	Orange			Orange	Orange
Greece	Orange	Orange			Orange	
Ireland				Orange		
Italy		Orange	2002-All			
Luxembourg	Orange	Orange			Orange	
Netherlands	Orange	MEP - 2003 REB			Orange	
Portugal	Orange	Orange				
Spain	Orange	Orange			Orange	
Sweden	Orange	Orange	2003-All			
UK	Orange		2002-All	Ended 2002		



## Quota and TGC schemes in the EU

Country	Start year	Technology	Quota (%)	Penalty Price (€cents/kWh)
Belgium Flanders	2002	All RES-E	2% - 6% (2002 - 10)	12,5
Belgium Wallonia	2003	All RES-E	3% - 12% (2003 - 10)	10
Italy	2003	All RES-E	2% (per year)	8,42
Sweden	2003	All RES-E	6,40% - 15,30% (2003 - 10)	2,17
UK	2002	All RES-E	3% - 10,40% (2002 - 10)	4,78 - 4,93



## RES-E Policy incentives in the EU: Present (I)

Wide range of RES-E Policy promotion Schemes in the EU.

Complicated and differentiated rules and planning procedures apply in each country.

RES-E promotion based on three main systems (feed-in tariffs, TGCs and tendering/bidding schemes). Also, complementary mechanisms (investment subsidies, fiscal measures...).

Level of support of feed-in tariffs vary significantly among countries and technologies.

Design of TGC schemes is different between countries.



## RES-E Policy incentives in the EU: Present (II)

**Feed-in Tariffs** have proved effective to promote RES-E in National markets. They may have efficiency problems. They may not be suited for an EU-wide RES-E market (too expensive political option).

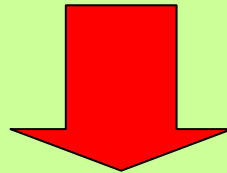
**TGCs.** Fewer and shorter experiences. As price is determined by the market (demand and supply factors) in theory more efficient but possibly less certain to investors as well. Coordination would be needed for the viability of an EU wide TGC market.

Use of **tendering/bidding schemes** has been gradually abandoned (U.K. NFFO and Ireland AER in the near future).



## **RES-E Policy incentives in the EU: Future (I)**

Investment decisions depend both on the level of support for RES-E and on the stability of promotion schemes. Continuously changing mechanisms generate uncertainty and risk on the part of the investor.



Relevance of main trends in support schemes at the EU and MMSS levels

Widespread feeling that RES-E promotion schemes are in a transition stage.



## **RES-E Policy incentives in the EU: Future (II)**

In reality, the EU Directive does not prejudge what RES-E policy scheme should be used in the future. Not even if a common RES-E promotion scheme should be implemented.

Perception of advantages and disadvantages of harmonisation on the part of the sector.

Wide array of changes in RES-E policy incentives in MMSS



## CLIMATE CHANGE POLICY.

- The European Climate Change Programme
- The CO<sub>2</sub> Directive.
- The Linking proposal.
- GHG emissions trends.



## **THE CO2 DIRECTIVE. Main features.**

Entity-based domestic cap and trade allowance scheme

### **Timing**

Start on January 1<sup>st</sup> 2005. The first phase: 2005-2007.  
Second phase: 2008-2012.

### **Coverage**

- Emissions from large stationary sources including power and heat generators, oil refineries, ferrous metals, cement, lime, glass and ceramic materials, and pulp and paper (thresholds)(Annex I)
- start with CO2 only.
- 46% of the Community's CO2 emissions in 2010.





## THE CO2 DIRECTIVE. Main features.

### Allocation

- Free Allocation. Member States may auction up to 5% for 2005 to 2007 and up to 10% for 2008 to 2012
- Each Member State draws up an ex- ante national allocation plan (NAP)
- Member States observe some common allocation criteria (Annex III of the Directive).
- The CO2 cap per country translates into a CO2 cap per installation/firm.



## THE CO2 DIRECTIVE. Main features.

### Surrendering allowances

Four months after the end of each year.

### Sanctions

- for every tonne of emissions that is not covered by an allowance a company will have to pay a penalty of 40 € in 2005 to 2007 and 100 € thereafter
- companies will also have to surrender a compensating amount of allowances in the subsequent year



## THE CO2 DIRECTIVE. Main features.

### Banking and borrowing

- "Intraperiod banking".
- "Interperiod banking".

### Opt-out ("temporary exclusion").

### Pooling and force majeure



## Climate Policy in MS. Brief overview.

### • Cross-sector policies

- \* Usually, general policy framework laid down in National Climate Plans (Strategies) or National Plans for Sustainable Development.
- \* In Federal states, subnational entities also relevant (i.e., in Austria, Belgium...).
- \* Austria, Denmark, Finland, France, Germany, Italy, the Netherlands, Sweden and U.K. have or are implementing some form of energy/carbon tax, although the link with the carbon content of energy is sometimes weak.



- Cross-sector policies

- \* Voluntary agreements now exist in most countries (Netherlands, Germany, Spain, Finland, France, Belgium, Ireland and Italy).

- \* UK: domestic emissions trading scheme.

- \* Common to all countries:

- Participation in the European CO2 Emission Trading market.

- Significant reliance on the use of Kyoto Mechanisms (CDM and JI) to comply with targets (from 2008 onwards).



## • **THE UK EMISSION TRADING SYSTEM. Main features.**

\* **Complex system.**

\* **Participation is voluntary. Three ways of participating:**

1) **Firms may bid an absolute CO<sub>2</sub> emissions cap for a share of £30 million per-year after taxes, offered as an incentive by the government for five years.**

2) **Firms in energy intensive industries can negotiate agreements with the government under which they agree to achieve reduced emissions rate targets in exchange for a reduction in the new Climate Change Levy.**

3) **Firms may opt-in to the programme by investing in projects that generate tradable emissions reduction credits.**



## **•THE UK EMISSION TRADING SYSTEM. Main features.**

- \* Allocation: Firms bid on emissions reductions in a “descending clock” auction.**
- \* The government has allocated £215 million over five years to be awarded to participating firms.**
- \* The government will first propose a rate at which it will compensate participating firms for each tonne reduced**



## •**SECTORAL MEASURES**

- MS policies to tackle climate change rely mostly on measures for the mitigation of emissions in the energy sector and, to a lesser extent, in the transport sector.

- More or less widespread planned or implemented measures:

- Energy. Promotion of RE, investment support (tax reductions, subsidies, R&D support) for energy efficiency, information and awareness measures aimed at reduction of energy demand and energy efficiency (demonstration projects), voluntary agreements with energy-intensive industries in order to optimise energy efficiency (or cost-efficient GHG reductions) in these sectors. Measures in the energy sector are really cross-sector measures.

- Waste Management: minimisation of waste landfilling, reduction of disposal of waste on landfills, promotion of waste recycling and waste recovery.





- **Building, commercial and residential sectors**: energy savings and energy conservation, increased energy efficiency for public buildings, insulation standards for buildings (ordinances...), improvement in the energy efficiency of household appliances, labelling schemes...
- **Transport**: promotion and improvement of public transport (multimodal systems), fiscal incentives for low fuel consumption vehicles, promotion of biofuels, increased fiscal pressure on private transport aimed at internalisation of external costs of road transport/private traffic, promotion of economic driving, public awareness raising measures aimed at reduction of individual private traffic, speed limits, spatial/physical and transport planning to reduce traffic...



- **Industry**. Measures aimed at energy savings and efficiency (investment support, voluntary agreements...), actions to reduce nitrous oxide and to limit fluoride gas emissions, measures aimed at reduction of non-energy related emissions, implementation of BATs in the context of the IPPC Directive...

- **Agriculture and forestry**. Measures to reduce methane and NO<sub>2</sub> emissions, actions to reduce the factors of production and to improving farming practices. Production of biofuels. Promotion of reforestation and forest conservation (grants). Maintenance and enhancement of diversity, productivity, regeneration capacity and vitality of forests.



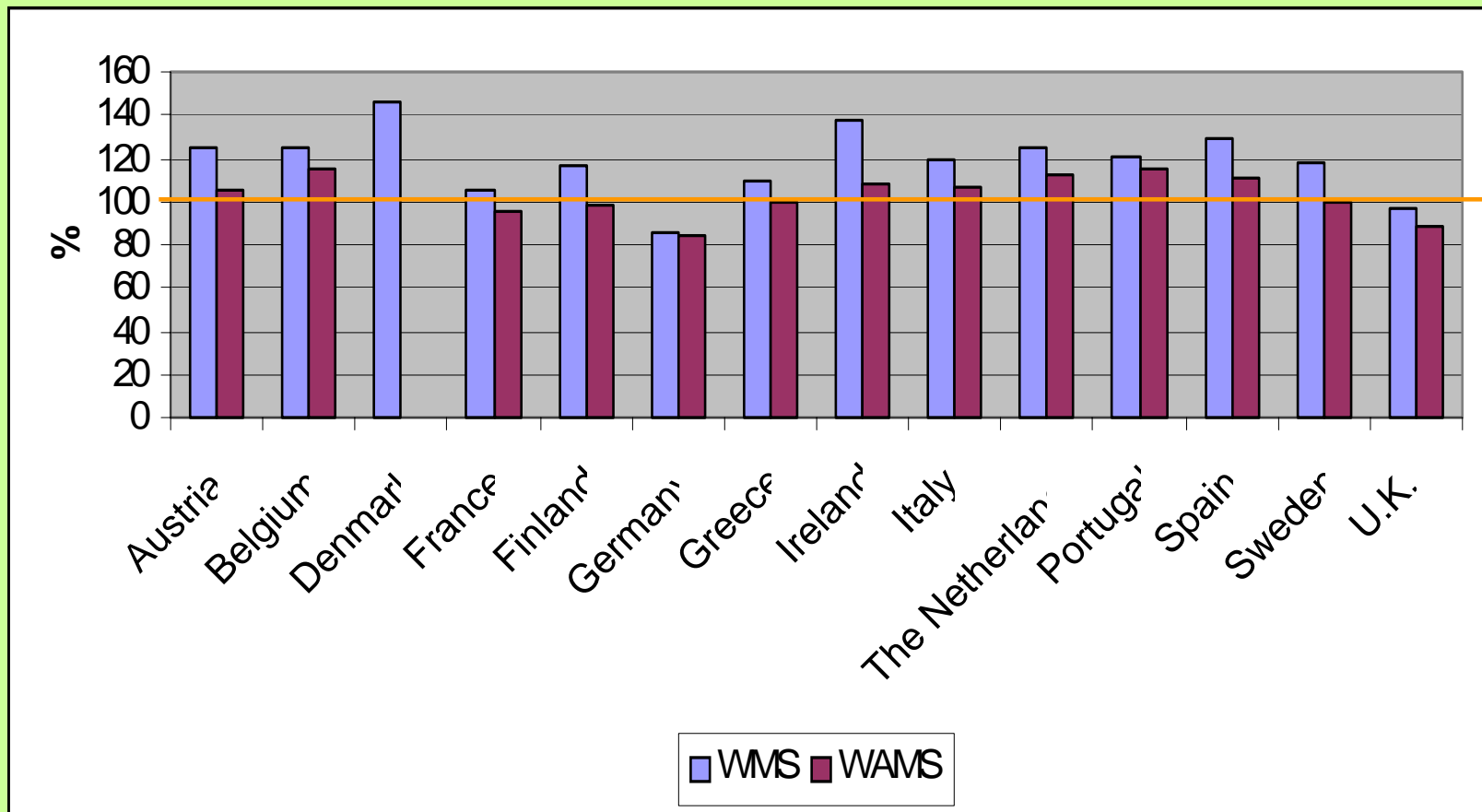
## **Climate Policy in MS. The Danish Emission trading scheme. Main features.**

- \* 8 companies are required to participate. Participation is mandatory.**
- \* More than 90% of the total CO<sub>2</sub> emissions from electricity (about 30% of total Danish GHG emissions).**
- \* Aimed at reduction of emissions from 23 MtCO<sub>2</sub> (2000), 22 MtCO<sub>2</sub> (2001), 21 MtCO<sub>2</sub> (2002), 20 MtCO<sub>2</sub> (2003).**
- \* Allocation of allowances based on grandfathering (average historical emissions in 1994-1998).**
- \* Penalty for non-compliance is set at 40 DKK/tCO<sub>2</sub>. The revenue from fines is to be invested in energy savings initiatives.**



## Climate Policy in MS. Trends according to TNCs.

Expected compliance with BSA targets (2008-2012 BSA =100)





## **THE LINKING PROPOSAL.**

- July 23<sup>rd</sup> 2003: proposal from the Commission to link credits from CDM and JI projects to the EU scheme.
- Linking means that JI/ CDM credits can be used by operators to fulfil their obligations under the EU ETS
- Linking implies the recognition of JI/CDM credits as equivalent to allowances from an environmental and economic point of view (single currency in EU ETS)



## THE LINKING PROPOSAL.

- Linking JI/ CDM to EU ETS implies a bridge between two different frameworks: Community Cap and Trade / Kyoto Project Mechanisms
- Participant in EU ETS delivers project credit to national authority and gets issued an allowance in exchange for it.
- All types of credits allowed for conversion except ERUs and CERs from:
  - nuclear facilities
  - carbon sink enhancement projects



## THE LINKING PROPOSAL.

- NO LINKING in the first EU ETS period (2005-2007):  
no ERUs before 2008 available but companies can accrue CERs before 2008 and convert them in 2008
  
- Limitation on linking: As soon as credits amounting to 6 % of initially allocated allowances have been converted the Commission must undertake a review and decide whether a quantitative limit of 8 % should be introduced`.



## **CHP POLICY.**

The overall share of cogeneration in total EU electricity production was 11% in 1998 .

The Commission's cogeneration strategy from 1997 set an overall indicative Community target of doubling the share of electricity production from cogeneration in total EU electricity production from 9% in 1994 to 18% by 2010 (COM(97) 514 final).





## **CURRENT BARRIERS TO CHP**

- low prices for electricity sold to the grid
- high grid connection costs
- high costs for use of the distribution system
- complex and lengthy administrative procedures
- asymmetric gas and electricity markets opening in the Union
- lack of internalisation of external costs , focus on short- term decisions, increased markets uncertainty
- continuous need for financial support in the short and medium term, as long as external costs are not reflected in energy prices



## REASONS TO PROMOTE CHP

- \* Cogeneration saves energy, improves security of supply and is cost- effective.
- \* Since cogeneration installations are usually close to the consumption point, there are less losses on the electrical grid;
- \* Cogeneration increases competition among producers;
- \* Cogeneration is an opportunity to create new enterprises;
- \* Cogeneration is well suited to isolated or ultraperipheral areas.



## CHP DIRECTIVE (I)

**AIM:** To create a framework which can support and facilitate the installation and functioning of electrical cogeneration plants where a useful heat demand exists or is foreseen

- In the short term, the Directive should consolidate existing and promote new cogeneration installations
- in the medium to long term, the Directive should ensure that high- efficiency cogeneration is considered when decisions on investment in new capacity are made



## CHP DIRECTIVE (II).

### Obliges Member States to guarantee:

That electricity from cogeneration will be transmitted and distributed on the basis of objective, transparent and non-discriminatory criteria

### Obliges Member States to facilitate:

Access to the grid for electricity produced from cogeneration units using renewable energy sources and from units with a capacity less than 1 MW(e)



## CHP DIRECTIVE (III)

Obliges Member States to publish...

Introduces basic cogeneration definitions

Introduces guarantee of origins

Targets for CHP?



## **CHP-Current shares of CHP generation**

The overall share of cogeneration in total EU electricity production was **11% in 1998** but significant differences in the EU (data for 2000):

Austria 71,7%

Belgium 11,4%

Denmark 69,6%

Finland 78,2%

France 24,8%

Germany 14,2%

Greece 2,3%

Ireland 1,5%

Italy 17,8%

Luxembourg 74,2%

The Netherlands 46,7%

Portugal 10,4%

Spain 13,4%

Sweden 85%

U.K. 9,3%



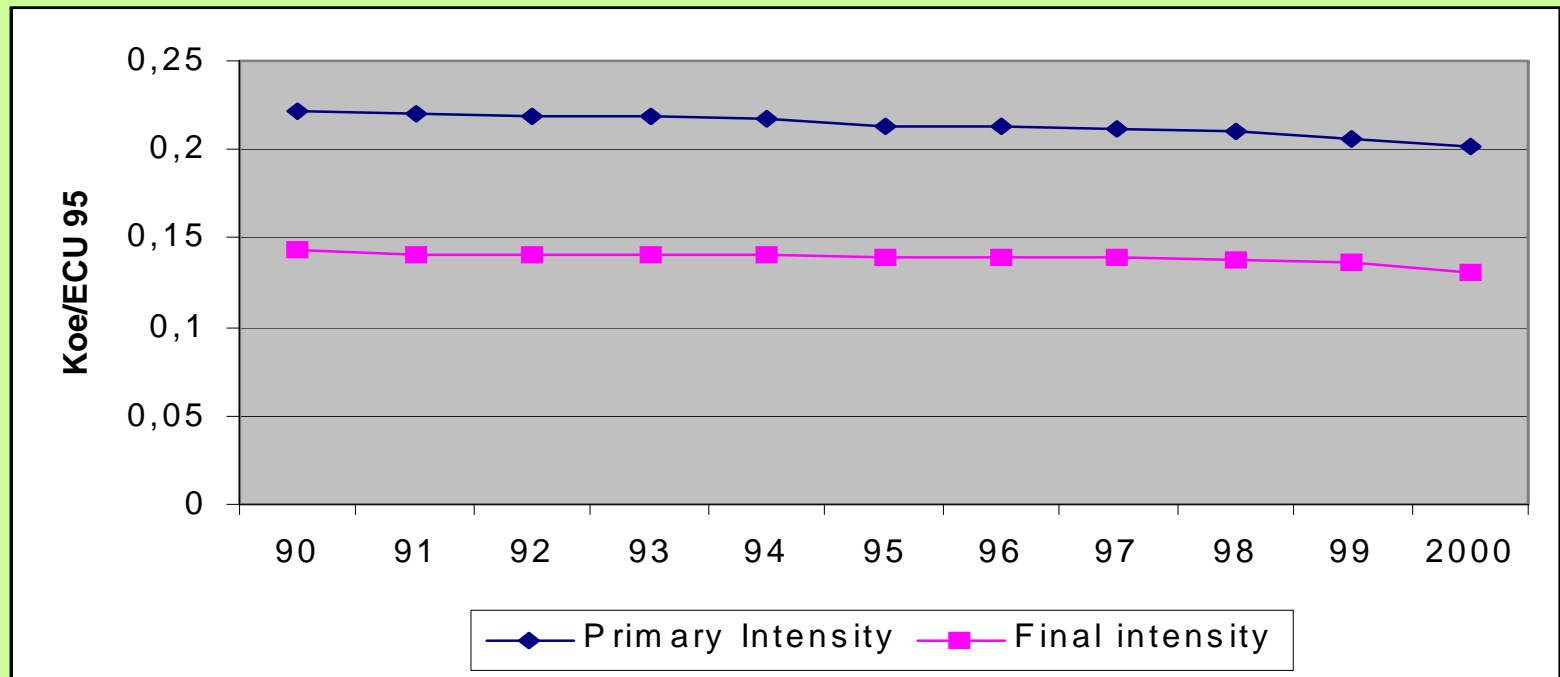
## **CHP- CURRENT SITUATION:**

- \* **Downturn of Cogeneration in France (reduction in new installed capacity since 1998 to 2002).**
- \* **Stalemate of cogeneration in the U.K.**
- \* **Weak recovery in Germany in 2002**
- \* **Moderate growth in Southern countries (Spain, Portugal and Italy)**



## ENERGY EFFICIENCY. Trends

### Primary and final energy intensities in the EU



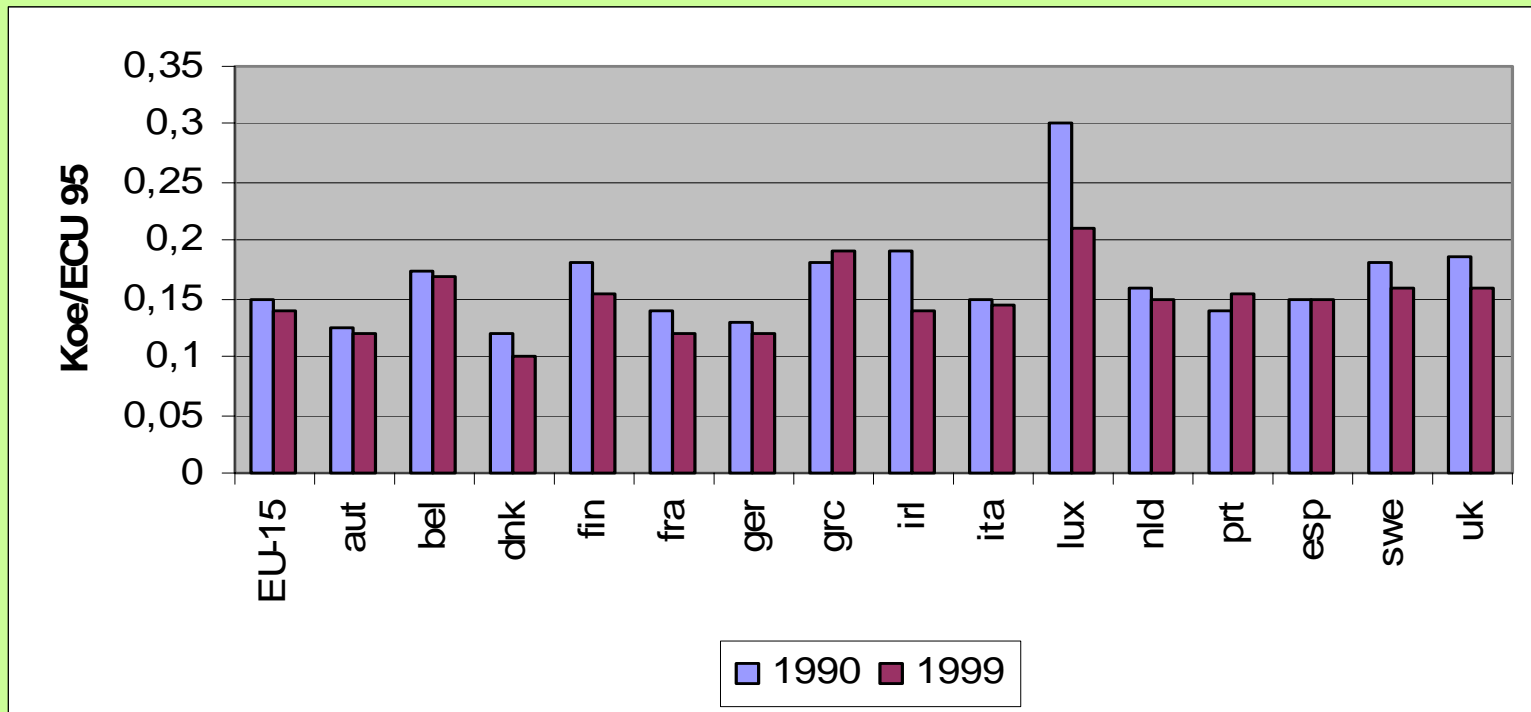
Source: SAVE-ODYSSEE Project on Energy Efficiency Indicators





## ENERGY EFFICIENCY. Trends

### Variation of final energy intensities in the EU countries

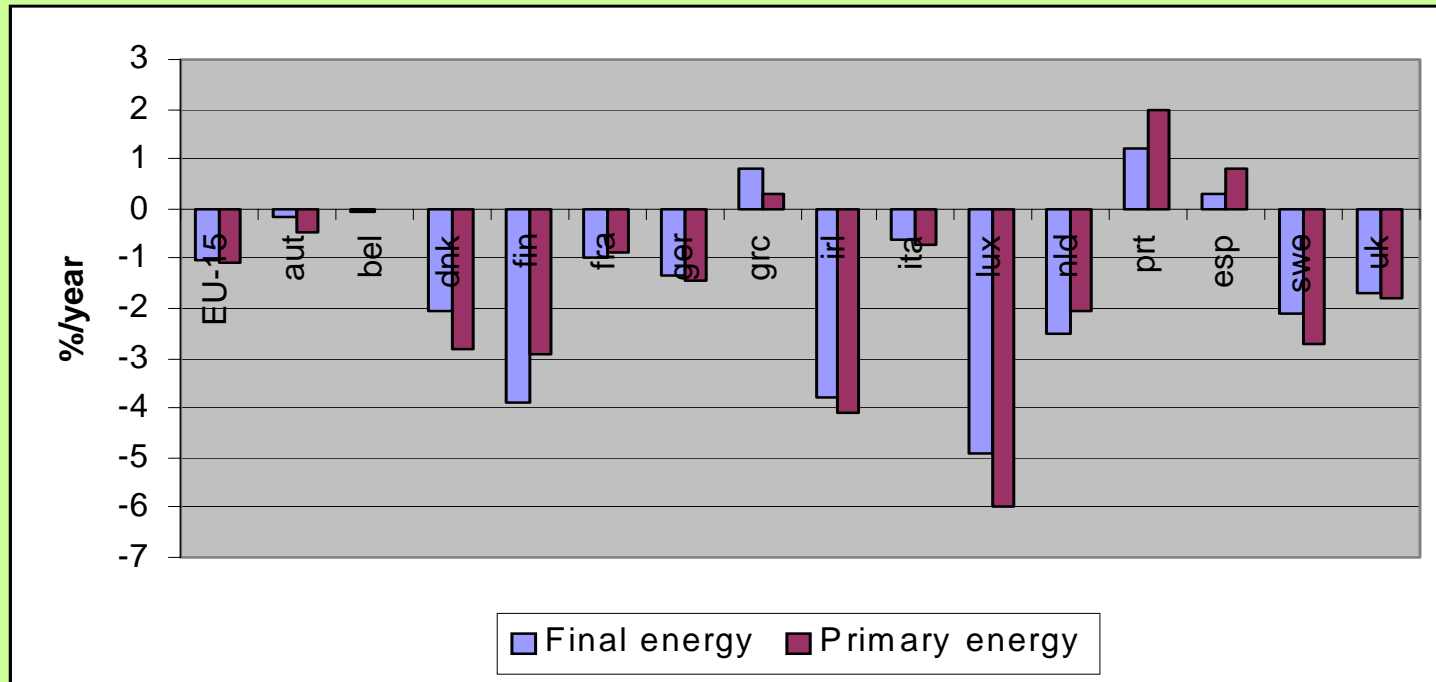


Source: SAVE-ODYSSEE Project on Energy Efficiency Indicators



## ENERGY EFFICIENCY. Trends

Variations of primary and final energy intensities in EU countries (1993 - 2000) at normal climate



Source: SAVE-ODYSSEE Project on Energy Efficiency Indicators



## **ENERGY EFFICIENCY Policy measures at EU level.**

**Commission has set up an objective of reduction of 1%/year of the energy intensity above a business as usual trend.**

- **Action Plan on Energy Efficiency**
- **Directives on labelling of households electrical appliances (refrigerators and freezers, washing machines and dryers) and lamps.**
- **Decisions on eco-labels of appliances: lighting bulbs, refrigerators, dishwashers;**



## **ENERGY EFFICIENCY. Policy measures at EU level.**

- **Voluntary Agreement with car manufacturers to decrease the emissions of CO<sub>2</sub> per car-km by 30% down to 120 g CO<sub>2</sub> in 2008.**
- **Directive on MEPS (Minimum Energy Efficiency Standards) for electrical appliances.**
- **Directives on the energy performance of buildings covering minimum standards of energy performance of new buildings, as well as certification schemes for new and existing buildings.**
- **Cogeneration Directive**
- **To promote energy efficiency, SAVE has supported the creation of energy agencies at regional, local or island level.**



## **ENERGY EFFICIENCY. Policy measures at MS level.**

**\* Voluntary agreements and ecotaxes.**

**\* With respect to regulations, buildings codes have been reinforced recently in several countries (2001 and 2002): Germany, France and Ireland. The buildings standards were revised previously in the Netherlands in most Austrian Provinces and in Denmark.**

**In the Netherlands: Energy Performance Advice (EPA) was launched to bring the energy efficiency of existing dwellings to the level of new dwellings built in 1985.**



## **ENERGY EFFICIENCY. Policy measures at MS level.**

**Several countries have recently initiated new sectoral programmes of actions or new laws with direct impact on energy efficiency:**

- Initiatives in cities and regions of Austria with a commitment of 50% reduction of CO<sub>2</sub> emissions.**
- Programme of Municipality advisory services in Sweden.**
- Transport Action Plans in Denmark, Austria and Italy.**
- Mandatory local transport plans for all large cities in France.**



## **THE SPANISH STRATEGY FOR ENERGY EFFICIENCY (2004-2012)**

A set of measures has been considered aimed at reduction of energy-related CO<sub>2</sub> emissions (3/4 of total CO<sub>2</sub> emissions).

Measures include: investment subsidies and others.

Without the measures considered in the Strategy, emissions would increase by 78% in 2012 compared to 1990. With the measures: a 58% increase is expected (369 vs. 327 Mt/CO<sub>2</sub>).