



On the path of achieving EU goals by 2020: Policy Option for Austria & the Czech Republic

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Outline



- ❖ Introduction: Background and Research Questions
- ❖ Literature Review
 - Energy Consumption and Emission
 - Policy Option: Energy Efficiency and GHG Emission Reduction
- ❖ Methodology: Statistic Descriptive Analysis
 - Understanding the trade-off
 - Policy Option: Energy Efficiency and GHG Emission Reduction
- ❖ Analysis: AZ 'on the track or not' in responding the EU agenda?
- ❖ Conclusion



INTRODUCTION

BACKGROUND

- ❖ Emission → Economic goods

Has a value

Tradeable

Cost: by producing vs NOT producing emission

- ❖ The growing agenda on Energy Efficiency and GHG emission reduction

RESEARCH QUESTION

- ❖ How AZ respond EU goals by 2020? How both countries look like among EU members?
- ❖ How AZ participate on ET?



REVIEW LITERATURE: Energy Consumption and Emission

- ❖ Schipper and Hass (1997)
'The political relevance of energy and CO₂ indicators-An introduction'
«.....the link between **energy use** and **emission**
- ❖ **Arouri et al (2012), Energy Consumption, Economic Growth and CO₂ Emissions in Middle East and North African Countries**
“....that real GDP exhibits a quadratic relationship with CO₂ emissions..”
- ❖ **M.J. Bradley & Associates (2007) Comparison of Energy Use & CO₂ Emissions From Different Transportation Modes**
“.....fery, transit bus, car-1 person, domestic air flight...”



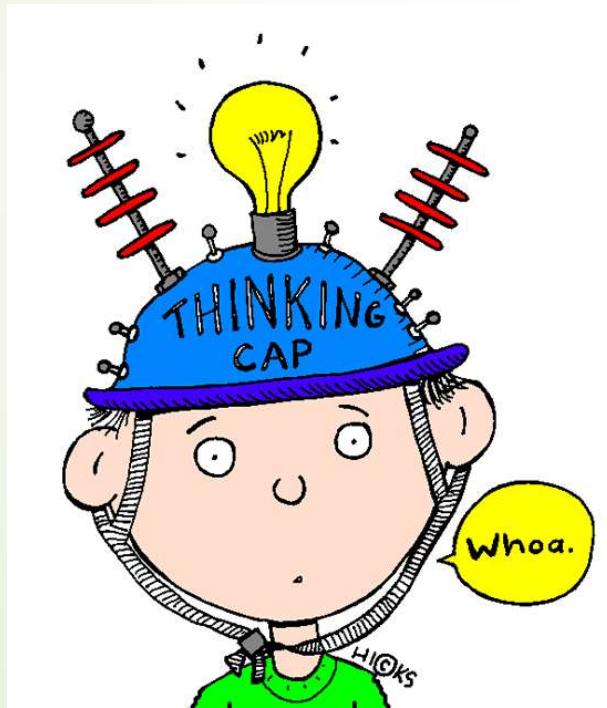
Continued: Energy Efficiency

- ❖ Bleischwitz and Andersen (2009)
Informational Barriers to Energy Efficiency-Theory and European Policies
«.... the development of measures base remuneration on energy performance the information on technologies and the education of consumers and installer on EF
- ❖ _____(2005) The private cost effectiveness of improving energy efficiency
Productivity Commission
“.... an independent evaluation of building energy efficiency standards and that local governments should not create variations in these standards
- ❖ Haas and Schipper (1997), Residential Energy Demand in OECD-countries and the role of irreversible efficiency improvements
“....price elasticity is different implying low rebound-effect, technical efficiency is an important parameter on forecasting energy demand, the effect of technological efficiency on income elasticity”

METHODOLOGY:

Statistic Descriptive Analysis

Understanding the problem
→ The policy option

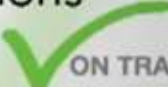




The Fact of AZ: on the track?

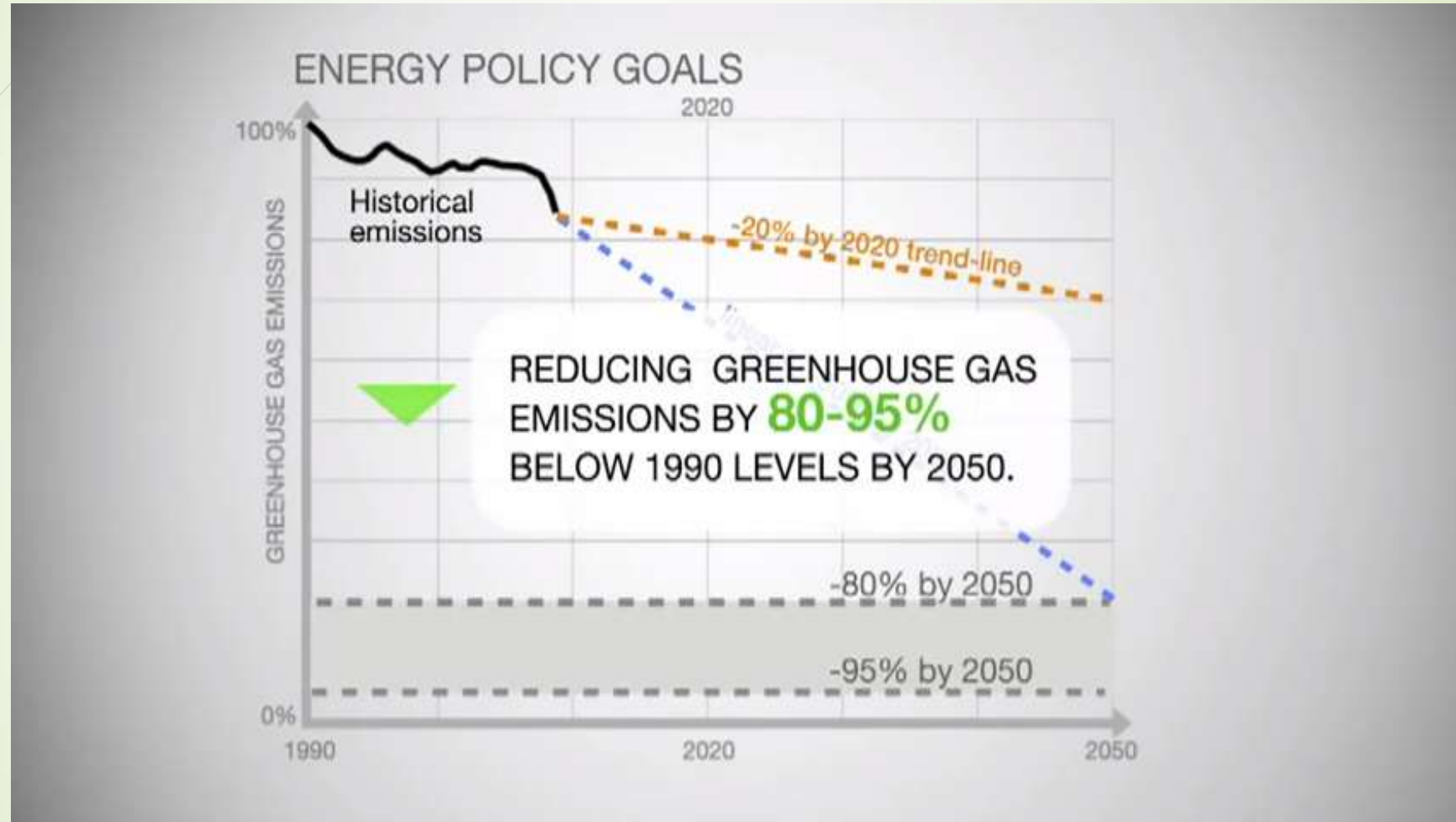


Understanding the problem: Aligning SR and LR EU Goals by 20-20-20

CLIMATE & ENERGY POLICY GOALS BY 2020

- 1 20% reduction in greenhouse gas emissions  ON TRACK
- 2 20% of energy from renewable sources  ON TRACK
- 3 20% reduction in energy use 

Energy Policy Goal: the scenario of GHG



Energy Saving vs Emission Trading

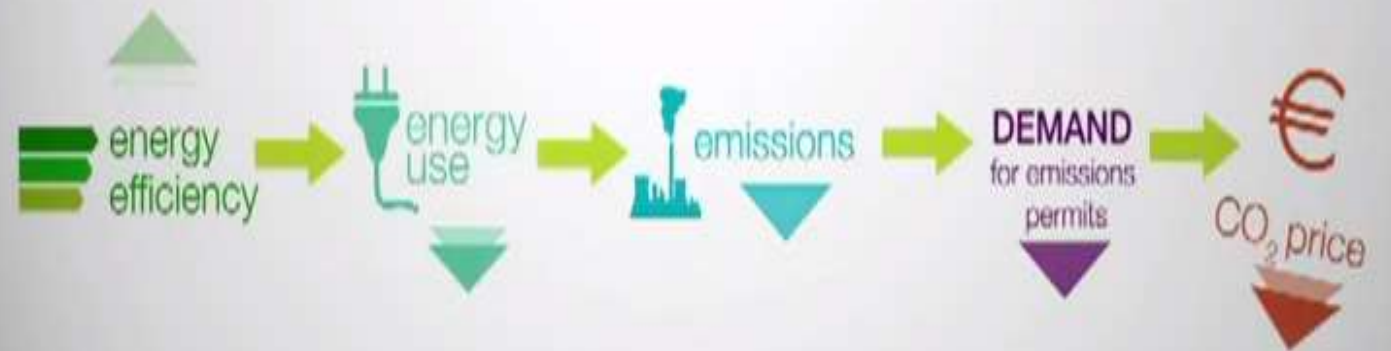
IMPACT OF ENERGY SAVING ON CO₂ PRICE
UNDER THE EU EMISSIONS TRADING SCHEME



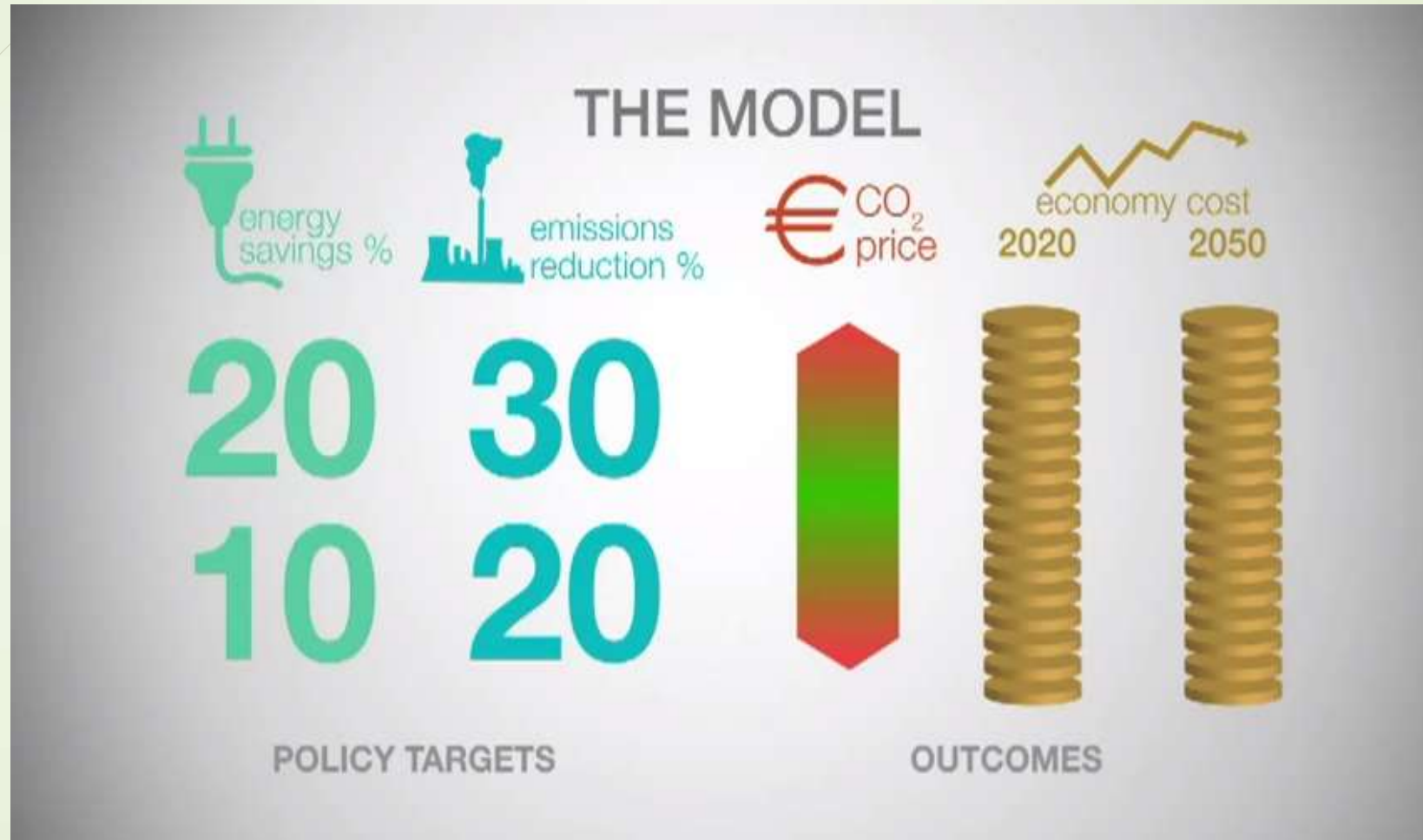


The Dilemma

How to achieve the energy savings target without undermining the price of emissions permits in the Emissions Trading Scheme?



The Base Model



SCENARIO I: BUSINESS AS USUAL



SCENARIO II: ACHIEVING EXISTING TARGETS



SCENARIO II: ACHIEVING EXISTING TARGETS



THE DANGER OF THIS SCENARIO IS OF A SUBSTANTIAL CARBON LOCK-IN BECAUSE THERE IS LITTLE SHORT-TERM INCENTIVE FOR LOW-CARBON INVESTMENTS.

In comparison: scenario I, II, and III



SCENARIO I



SCENARIO II



SCENARIO III

Policy Mix

OPTIMISING THE **SHORT TERM** EU CLIMATE
& ENERGY POLICY MIX REQUIRES:

20% energy savings target
must be achieved

at least **25%** emissions reduction

OPTIMISING THE **SHORT TERM** EU CLIMATE
& ENERGY POLICY MIX REQUIRES:

Align emissions reduction target (including ETS)
with energy savings target

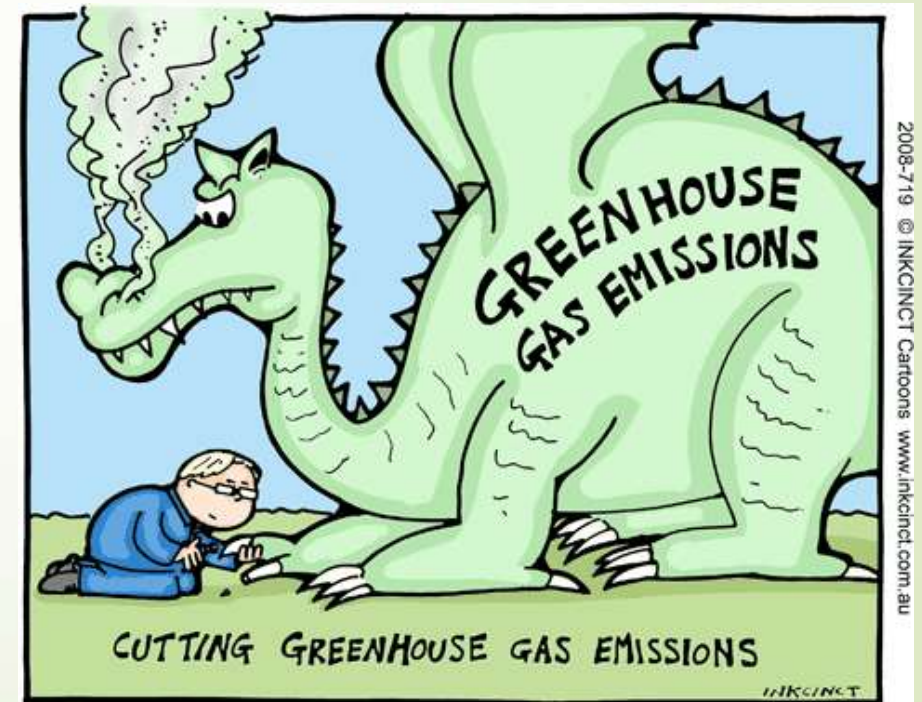


THE POLICY OPTION

Investment on Energy Efficiency



GHG Emission Reduction



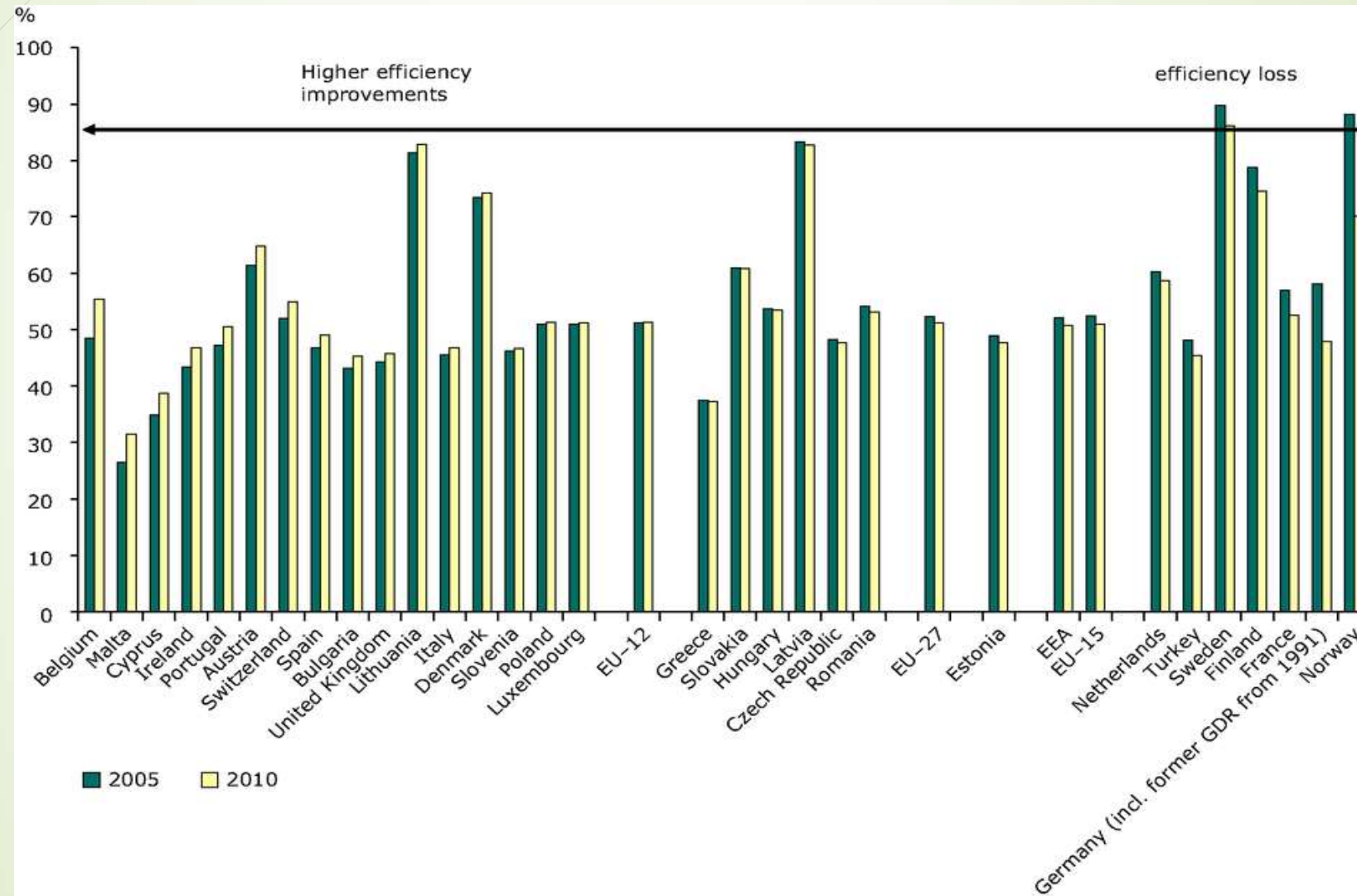


The Fact of AZ : Are AZ on the track on responding this agenda?

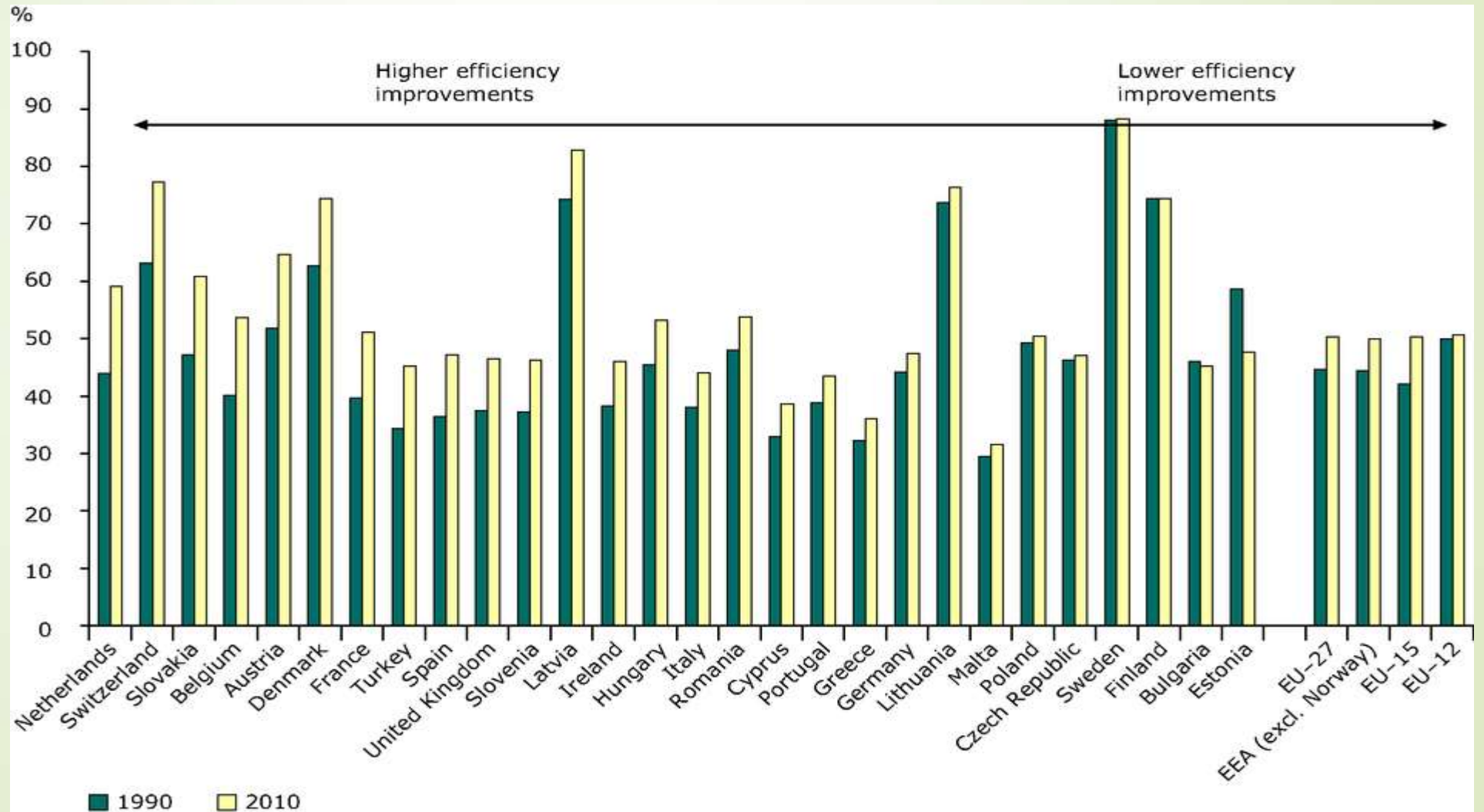
A statistic descriptive analysis:

- ▶ Energy Efficiency
 - ▶ GHG emission reduction
- 

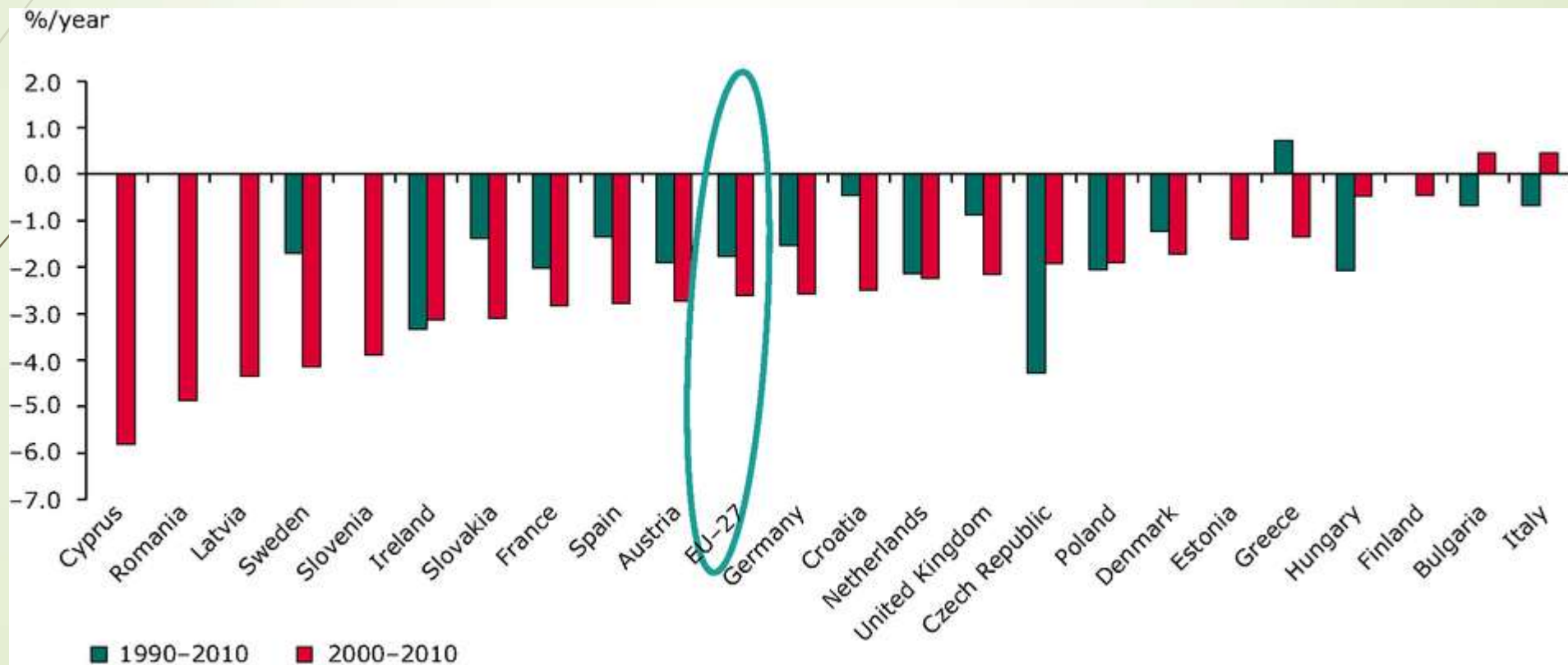
Efficiency (electricity and heat) production from conventional thermal plants, 2005, 2010



Efficiency (electricity and heat) production from conventional thermal plants, 1990, 2010

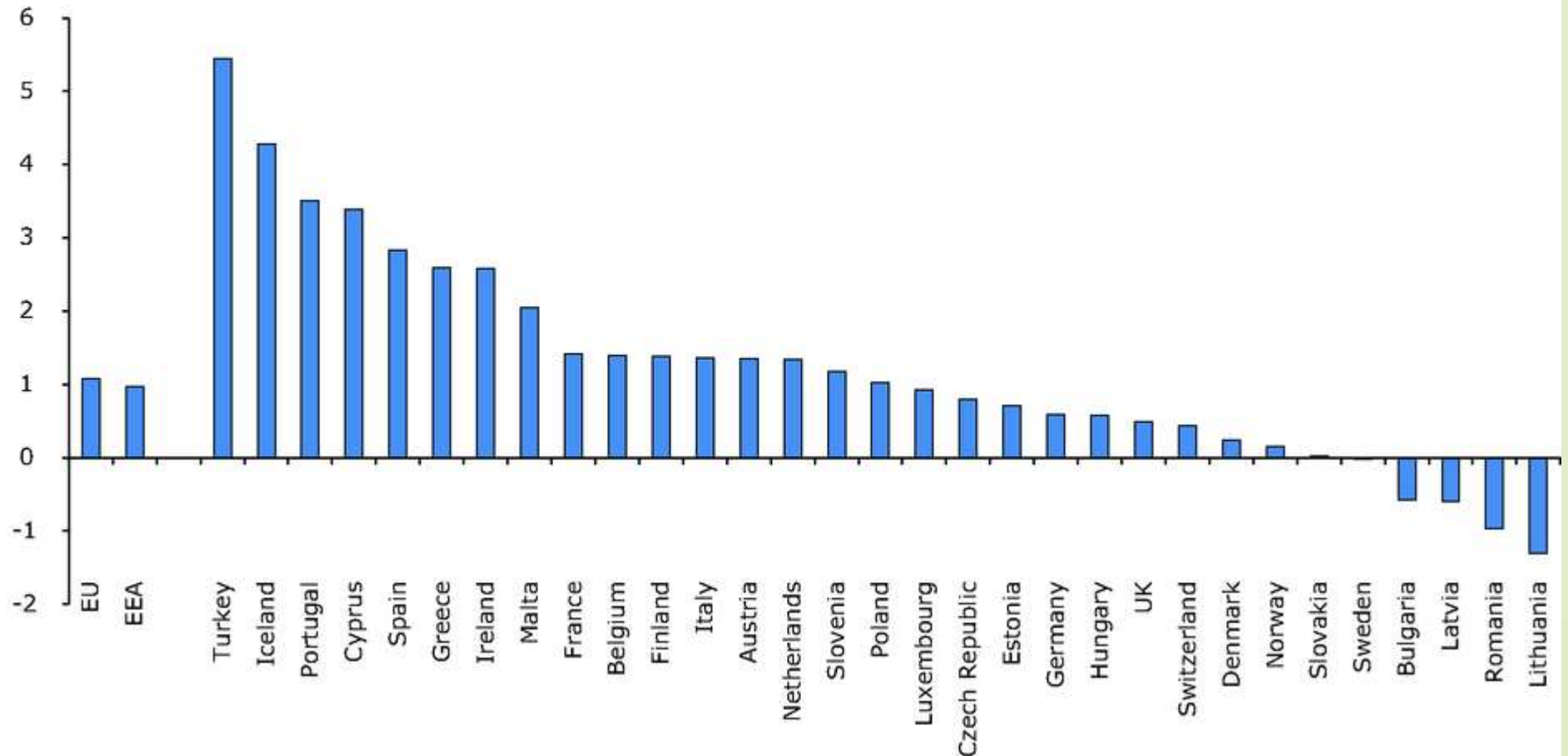


Trends in household energy consumption for space heating per m2 (climate corrected)

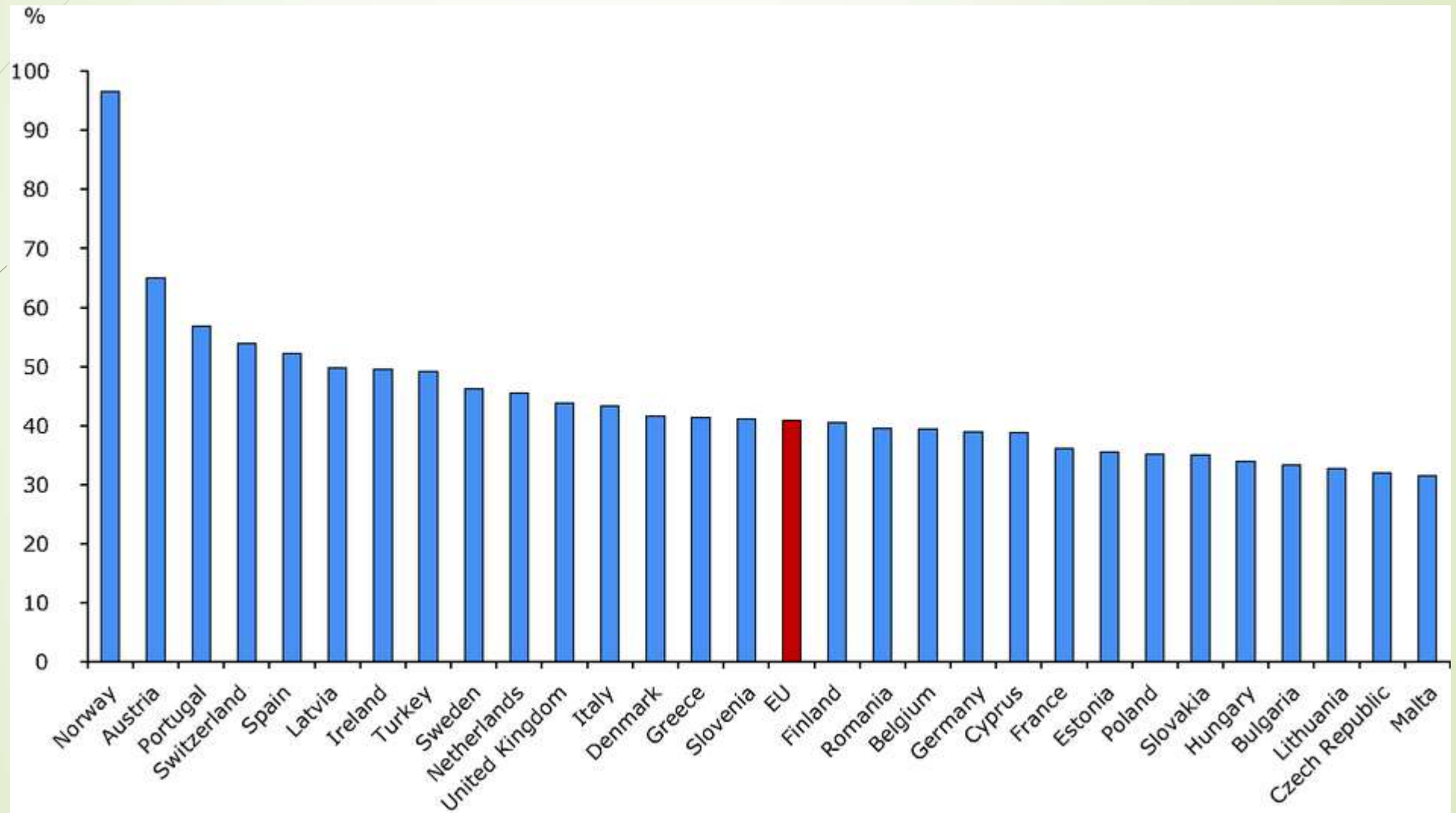


Trends in electricity consumption per capita (1990-2010)

Average annual percentage change in electricity consumption



Average efficiency of the electric sector (2010) → contribution EE by each sectors





CONCLUSION

Austria

- ▶ Has already took the second rank of energy efficiency (EF)

Challenge: Spending on EF and EF improvement?

- ▶ Has already applied 'second best solution' by applying tax and fee to protect environment

Challenge: Spending on environment vs environment performance?

Czech Republic

- ▶ The need to improve EF
- ▶ Has been enabling emission trading, particularly on coal
- ▶ Has been enacting several energy tax and environmental fee in order to reduce emission

REFERENCE (attached)

