

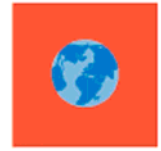


ENTE PER LE NUOVE TECNOLOGIE,  
L'ENERGIA E L'AMBIENTE



WORLD ENERGY COUNCIL  
CONSEIL MONDIAL DE L'ENERGIE  
COMITATO NAZIONALE ITALIANO

ADEME



Agence de l'Environnement  
et de la Maîtrise de l'Énergie



INSTITUTE OF ENERGY  
FOR SOUTH-EAST EUROPE

# International Conference “2nd South East Europe Energy Dialogue”

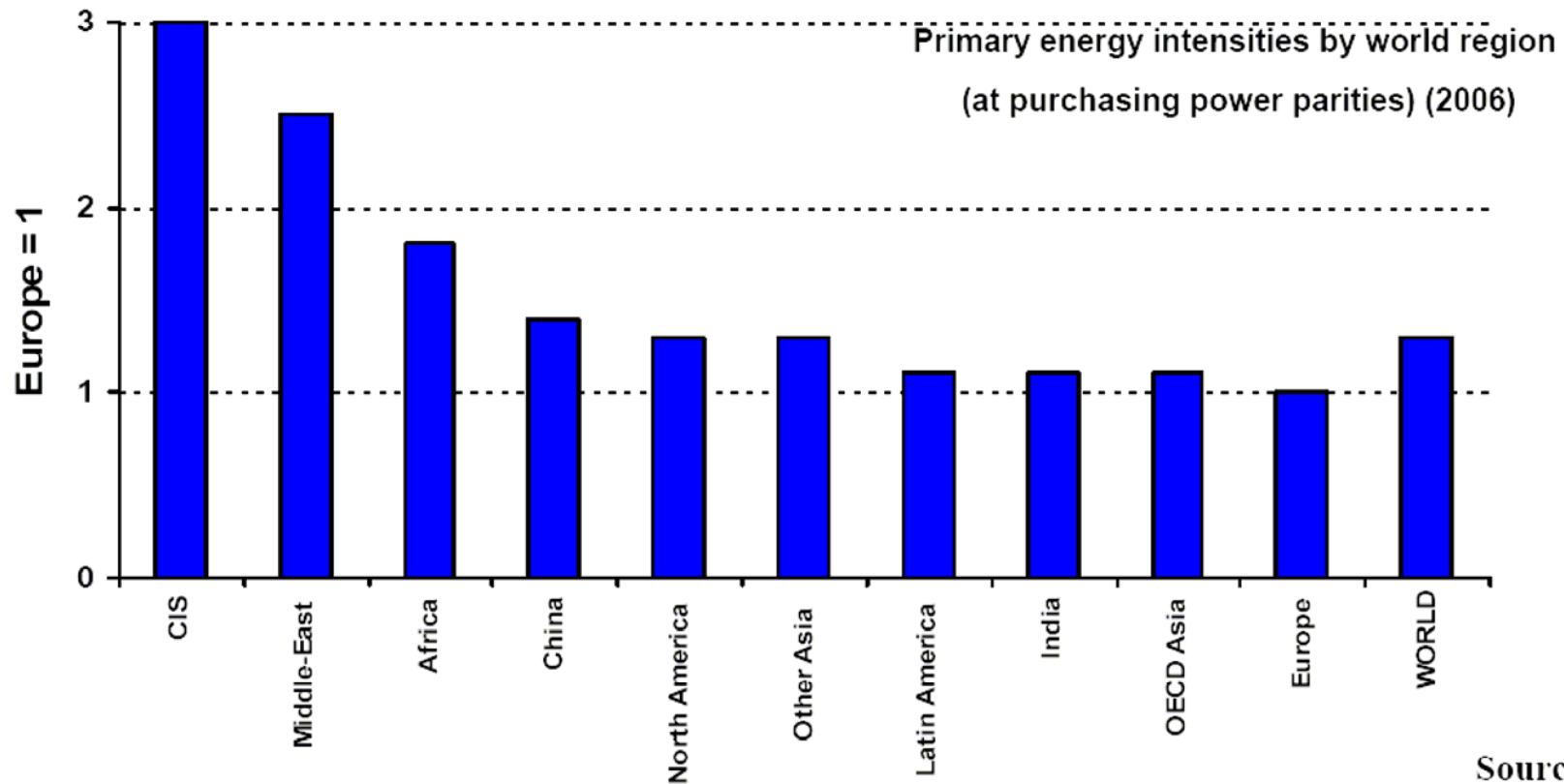
Emidio D'Angelo

Energy Efficiency at International and European Levels

ENEA

Thessaloniki, 21 - 22 May, 2008

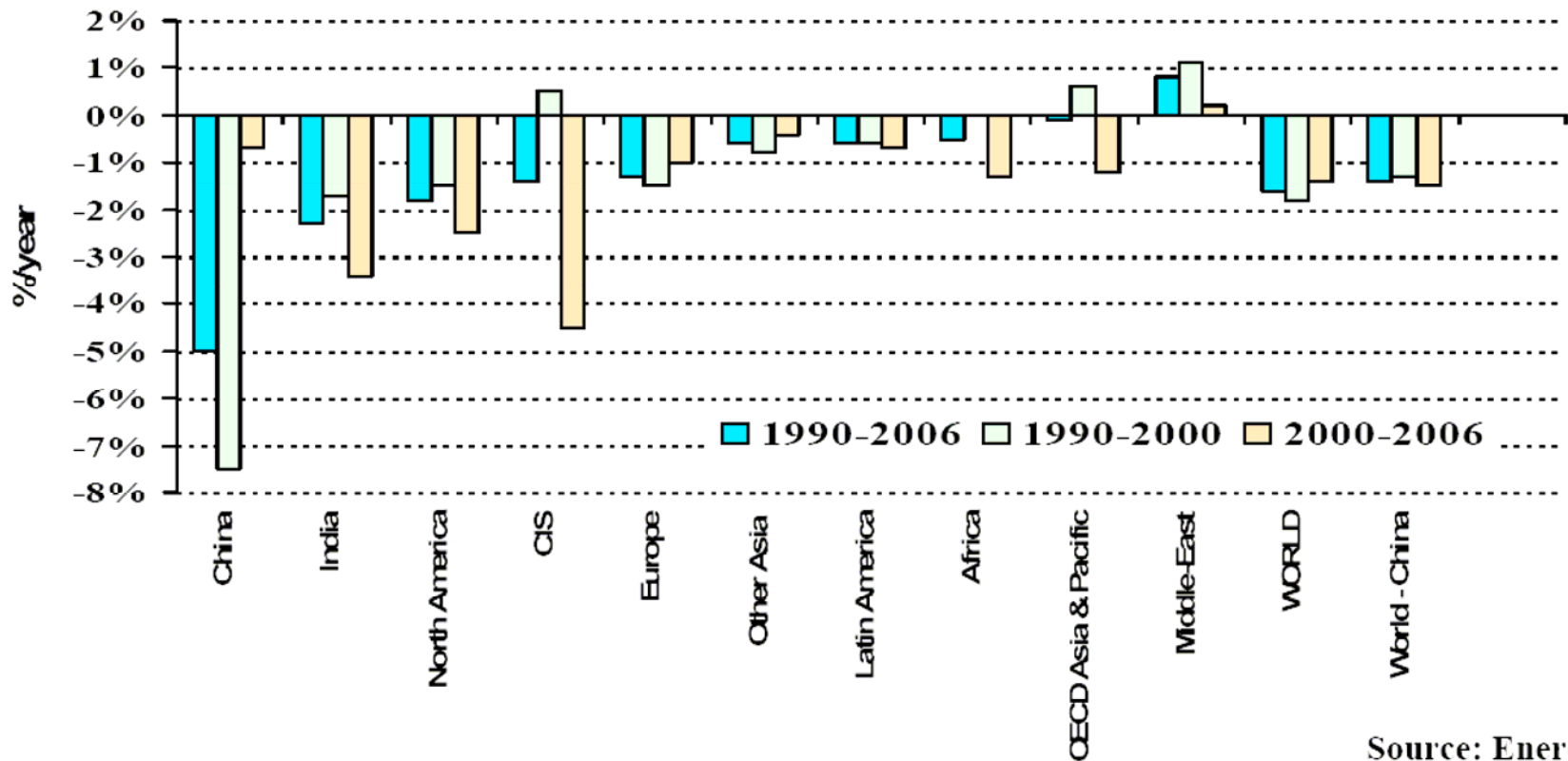
Large disparities by region in the energy intensities: a factor 3 between CIS, 2.5 for Middle East and Europe; OECD Asia, India and Latin America (close to Europe); North America, Other Asia and world average: about 30% above Europe; China 40% above



Source: Enerdata

In most world regions the amount of energy used per unit GDP is decreasing steadily: 1.6% p.a. since 1990 for the world → 4.4 Gtoe saved in 2006 and 10 Gt of avoided CO2 emissions; significant slow down in China since 2000; but acceleration in most other regions due to oil price

Variation of primary energy intensity by world region

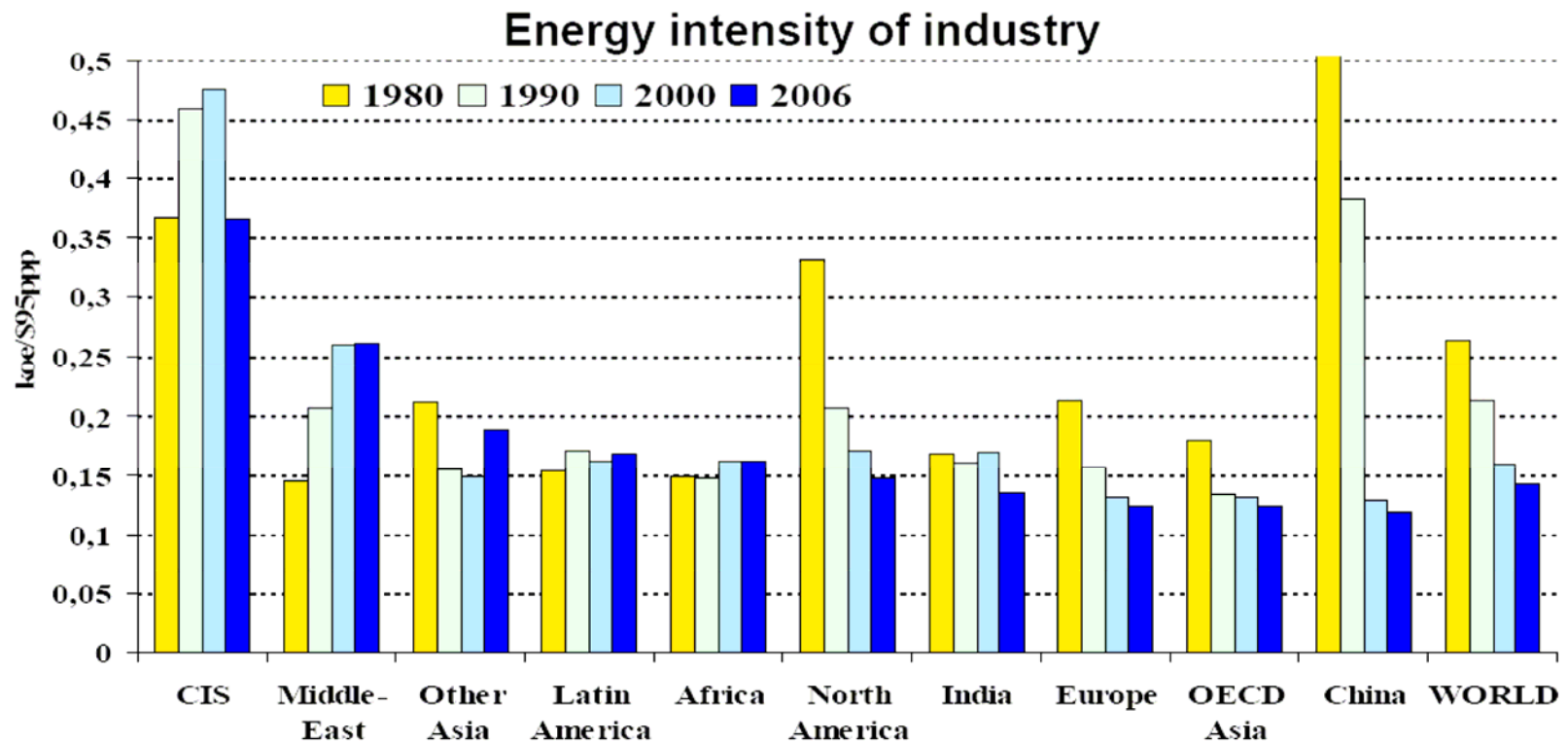


Source: Enerdata

# Convergence of performance in industry because of globalisation

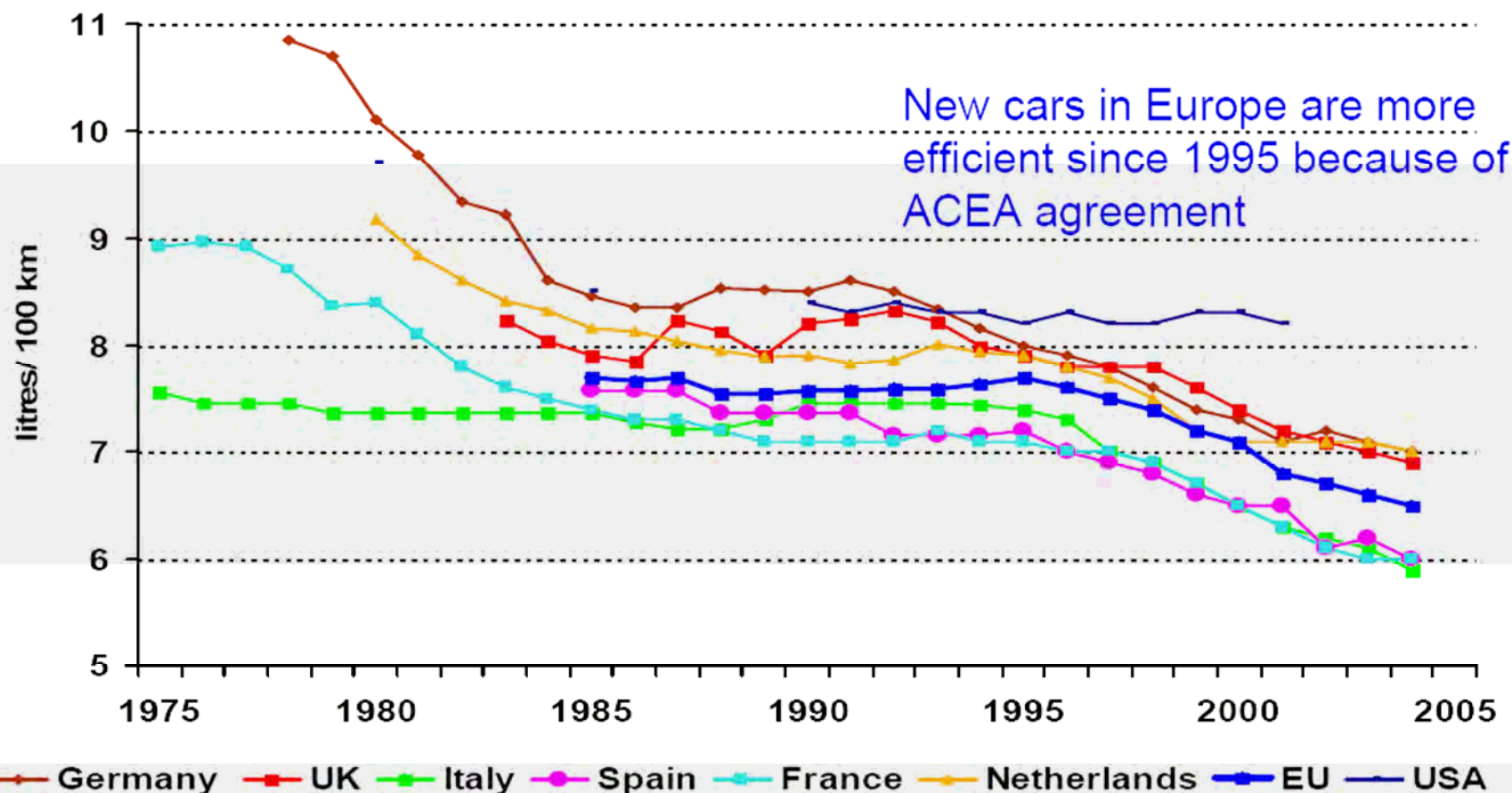
Slow down since 2000 in Europe, China, OECD Asia; reverse trend in Other Asia and Latin America; acceleration in India

Part of the variation due to structural changes in industry (e.g. Middle East): difficult to assess at regional level because of data constraints



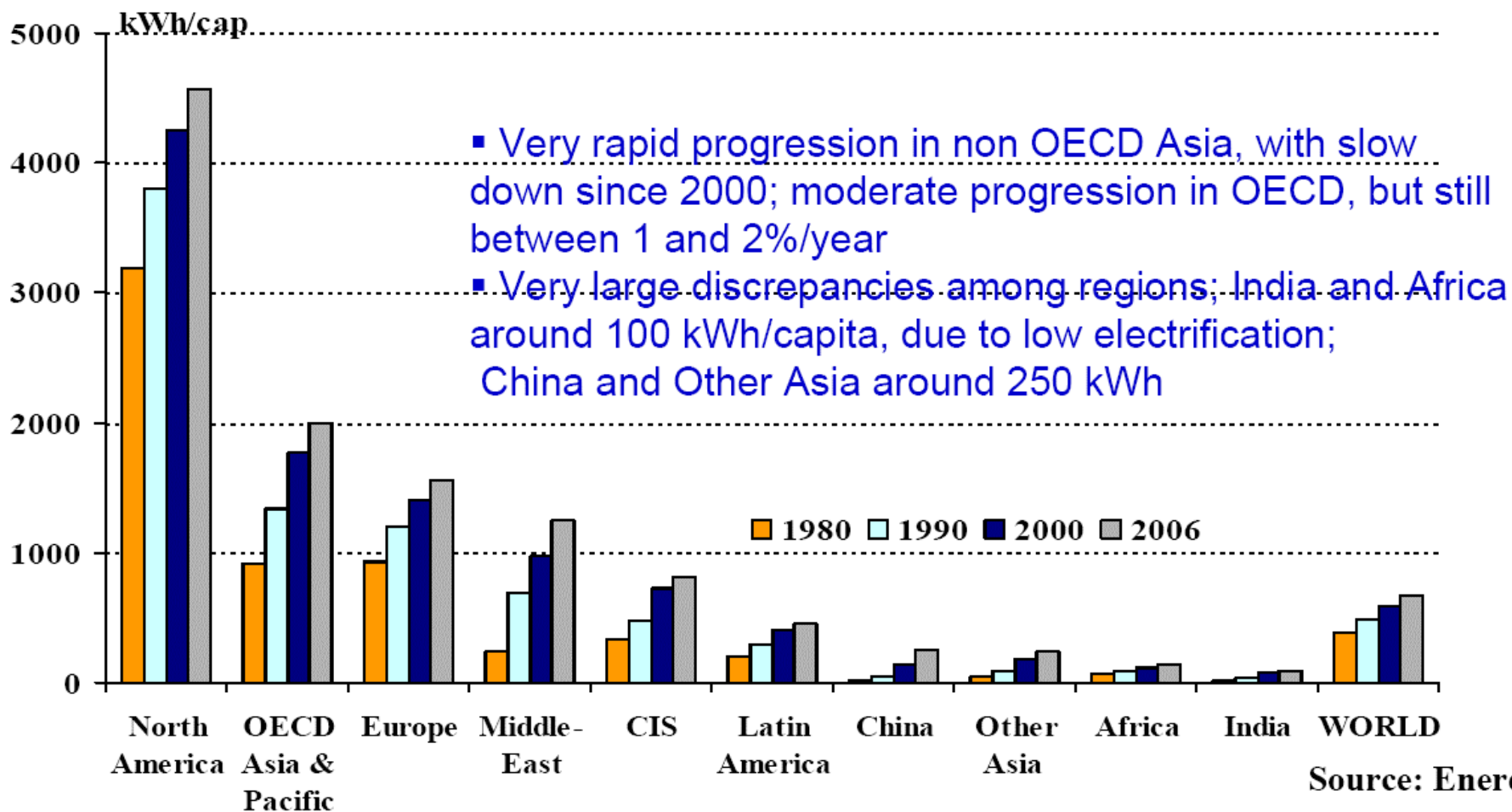
# In transport, part of the energy efficiency gains have been offset by non technical factors

## Specific consumption of new cars (l/100km)

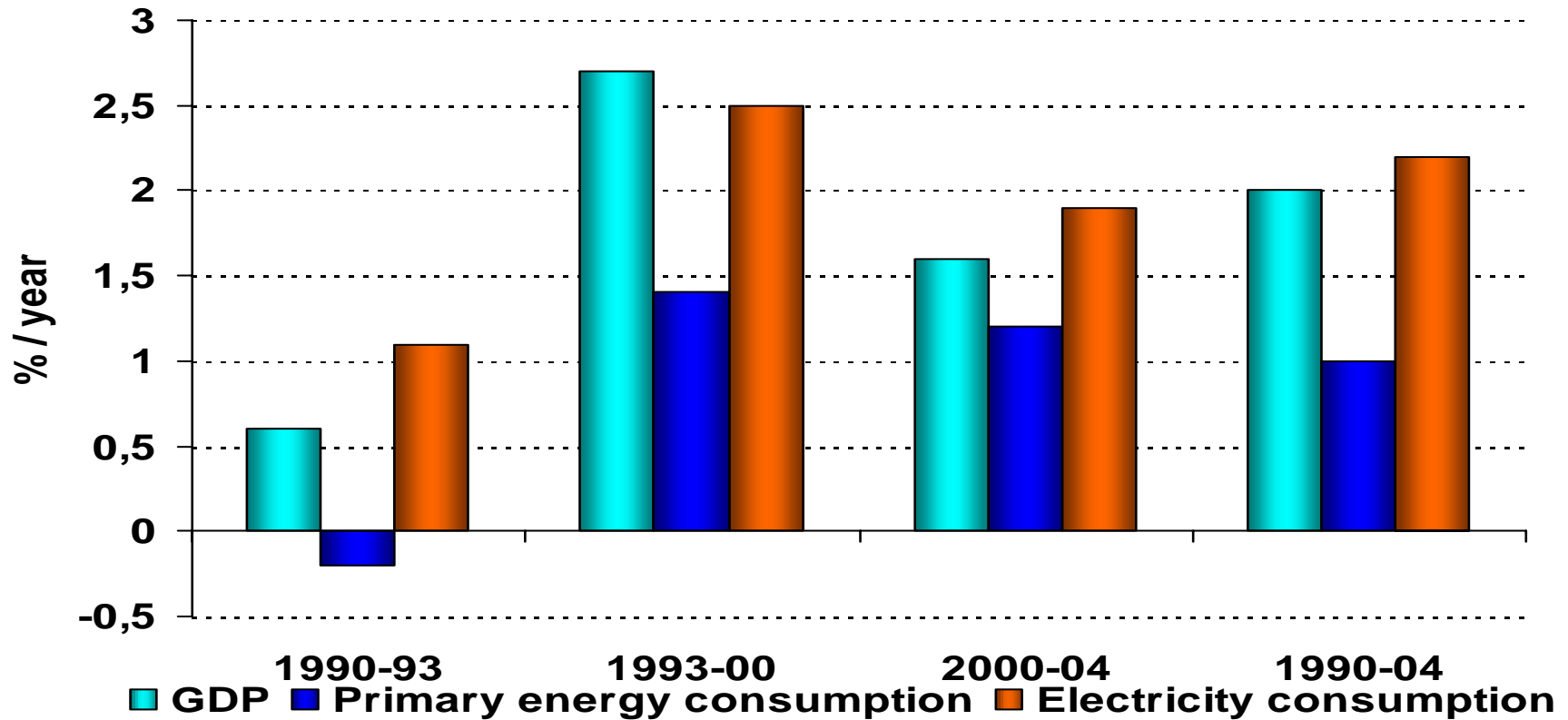


# For households, effect of policies on large appliances visible but lifestyle offset part of the progress achieved

## Household electricity consumption per capita

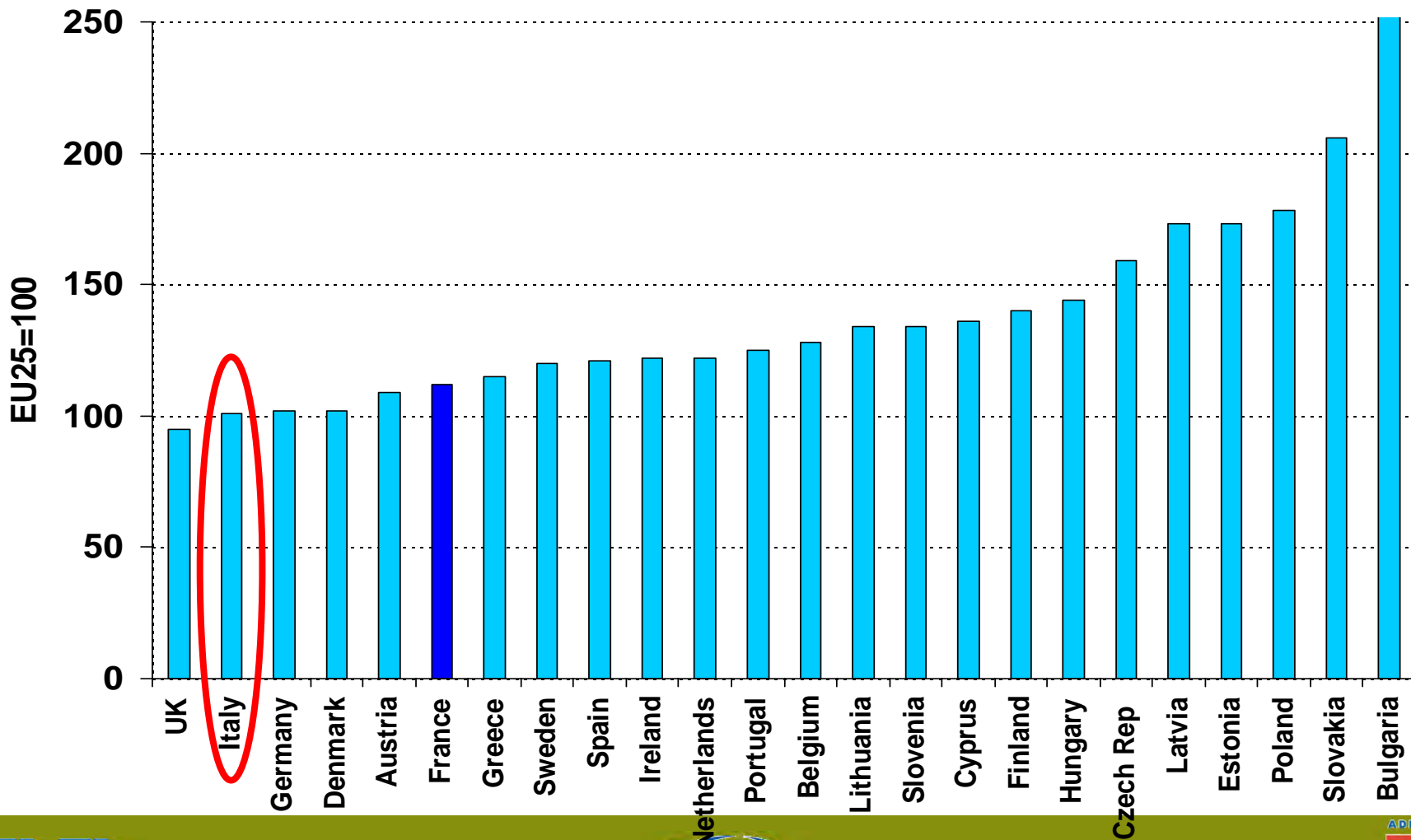


# Energy consumption trends (EU-15)



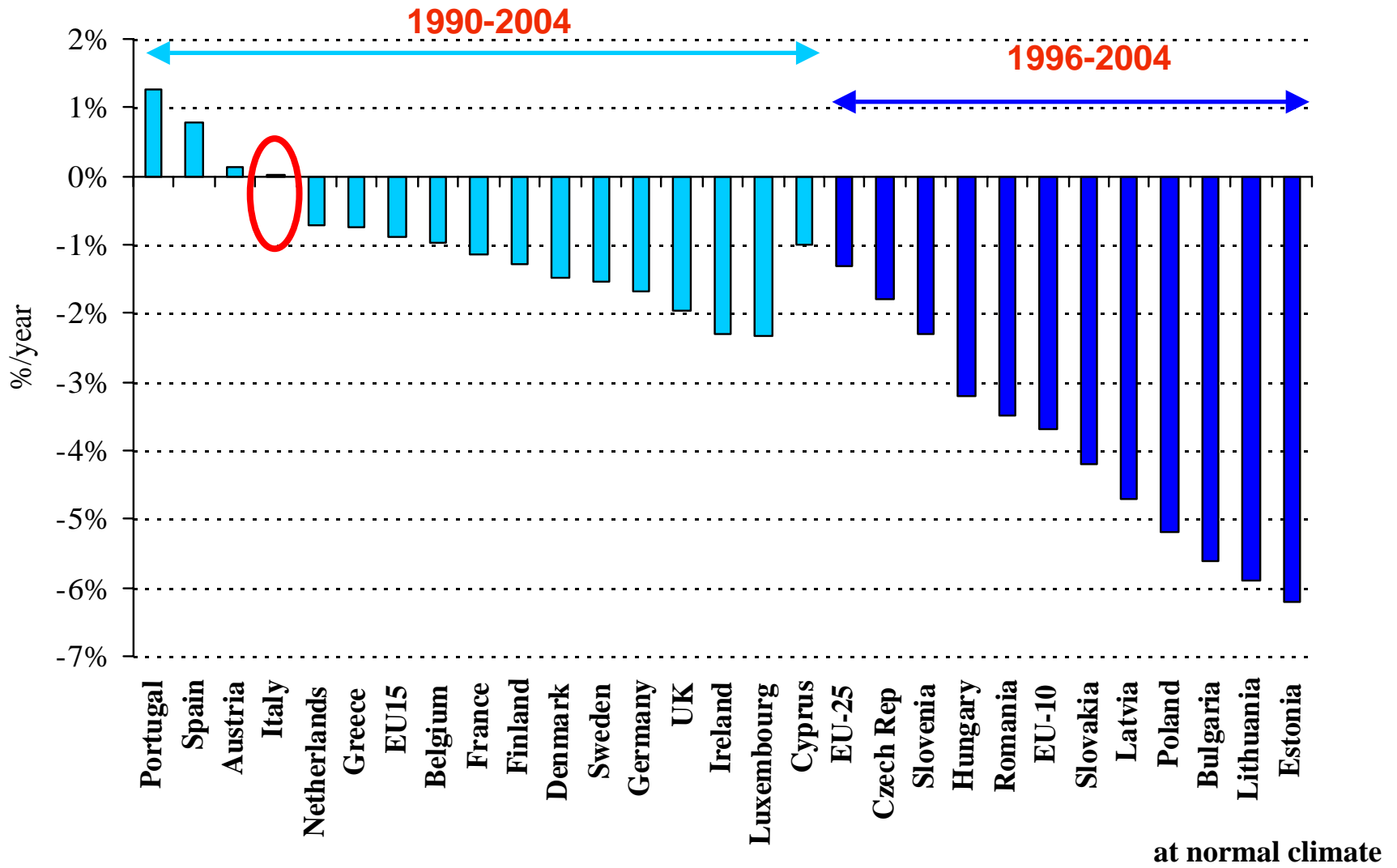
# Adjusted final energy intensities in the EU-25

Final energy intensities adjusted to EU average climate, economic/ industry structures, and international air transport (at purchasing power parities)





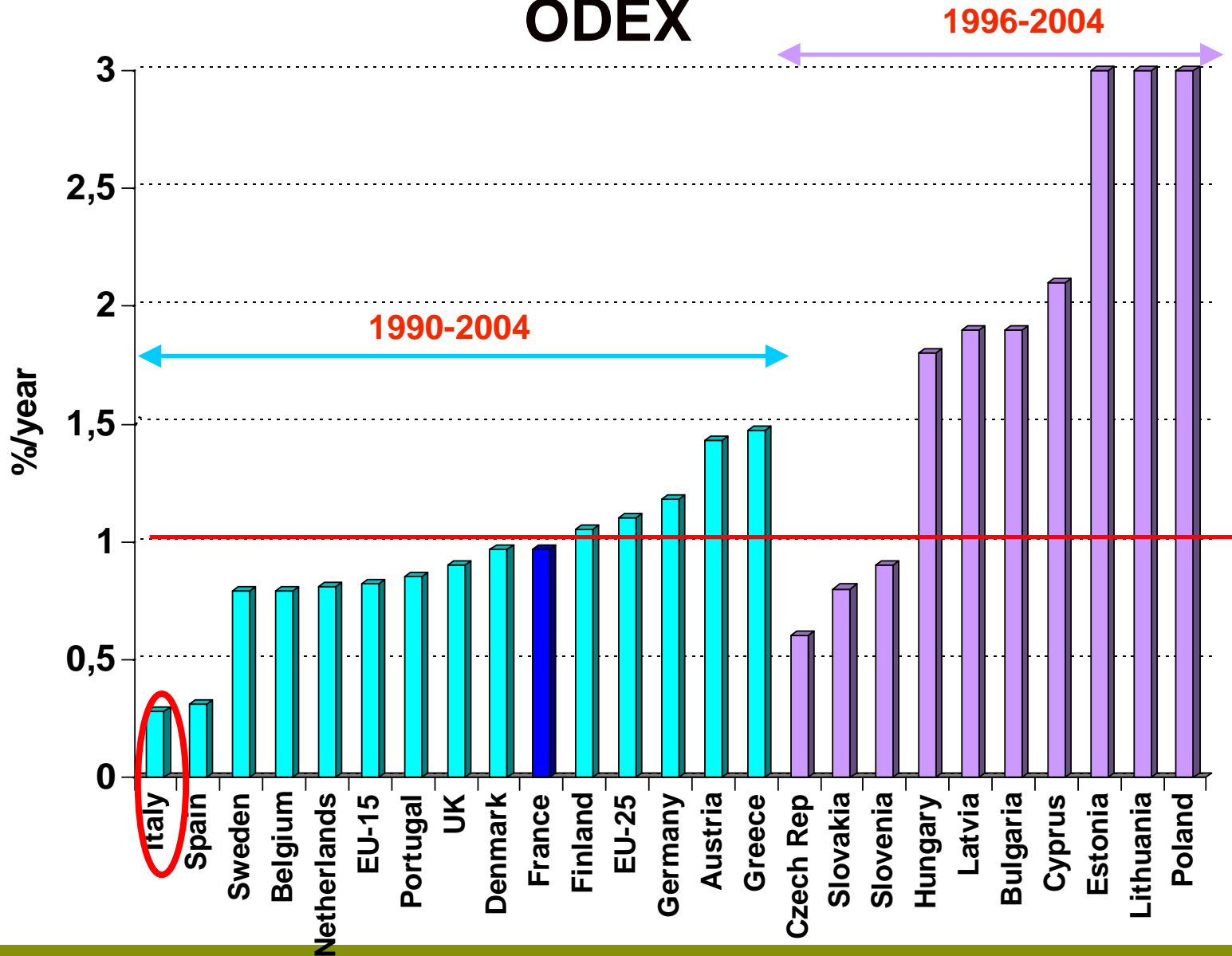
# Variation of final energy intensities in EU



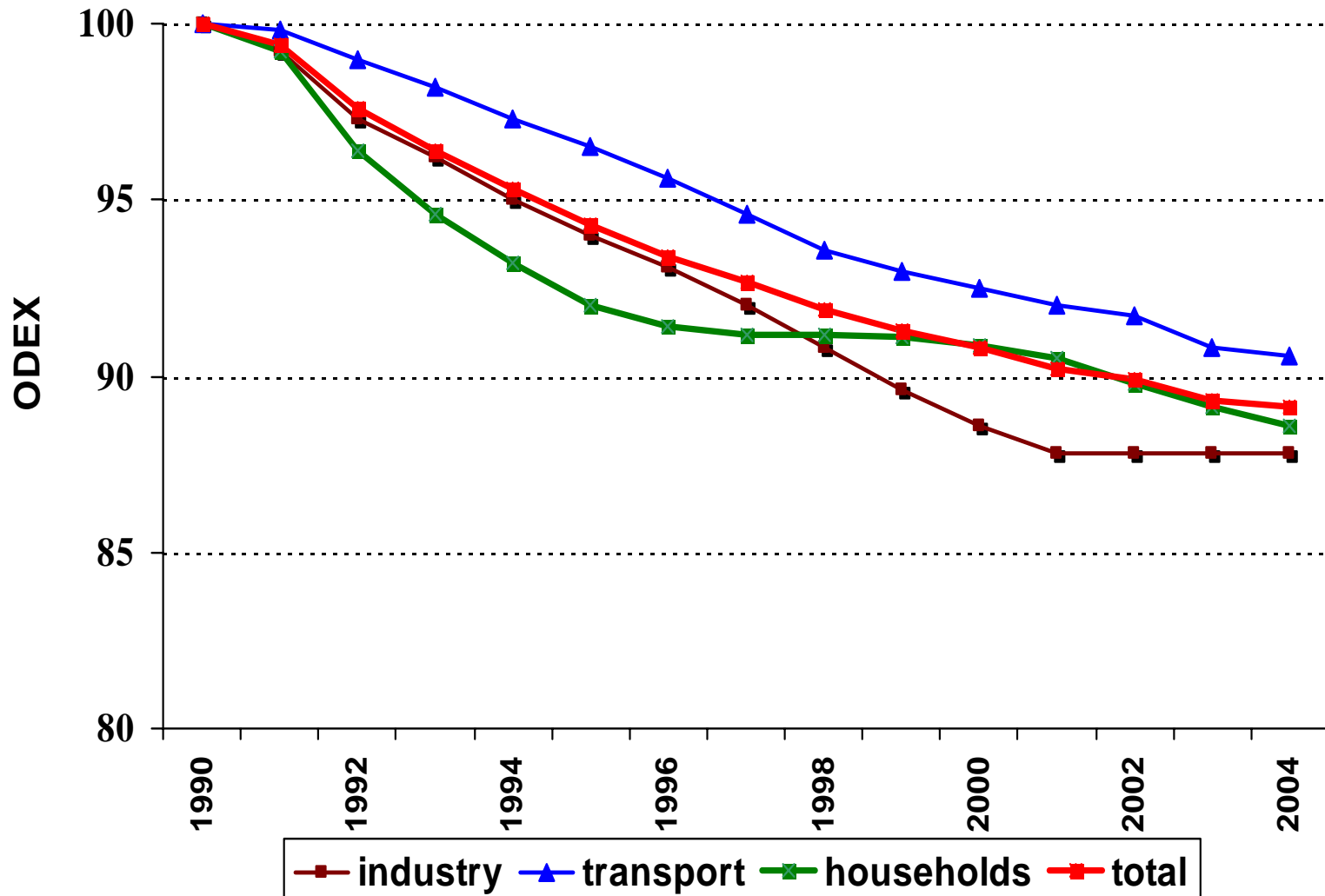
at normal climate

# Energy efficiency trends for final consumers

## ODEX



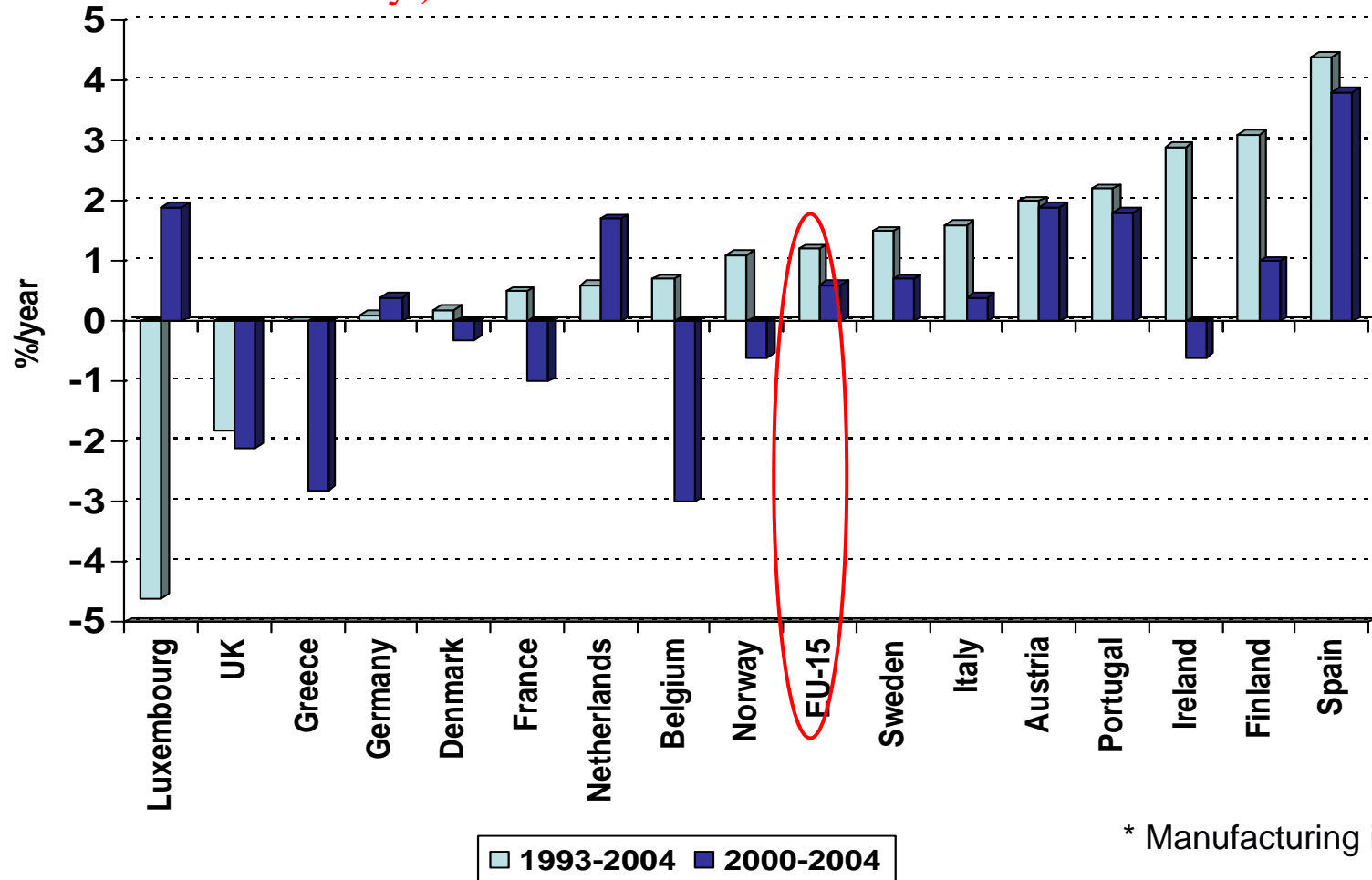
# Energy efficiency index (ODEX) for final consumers (EU-15)



# Trend in the industrial energy consumption\*

Strong progression of the energy consumption in Spain and Finland

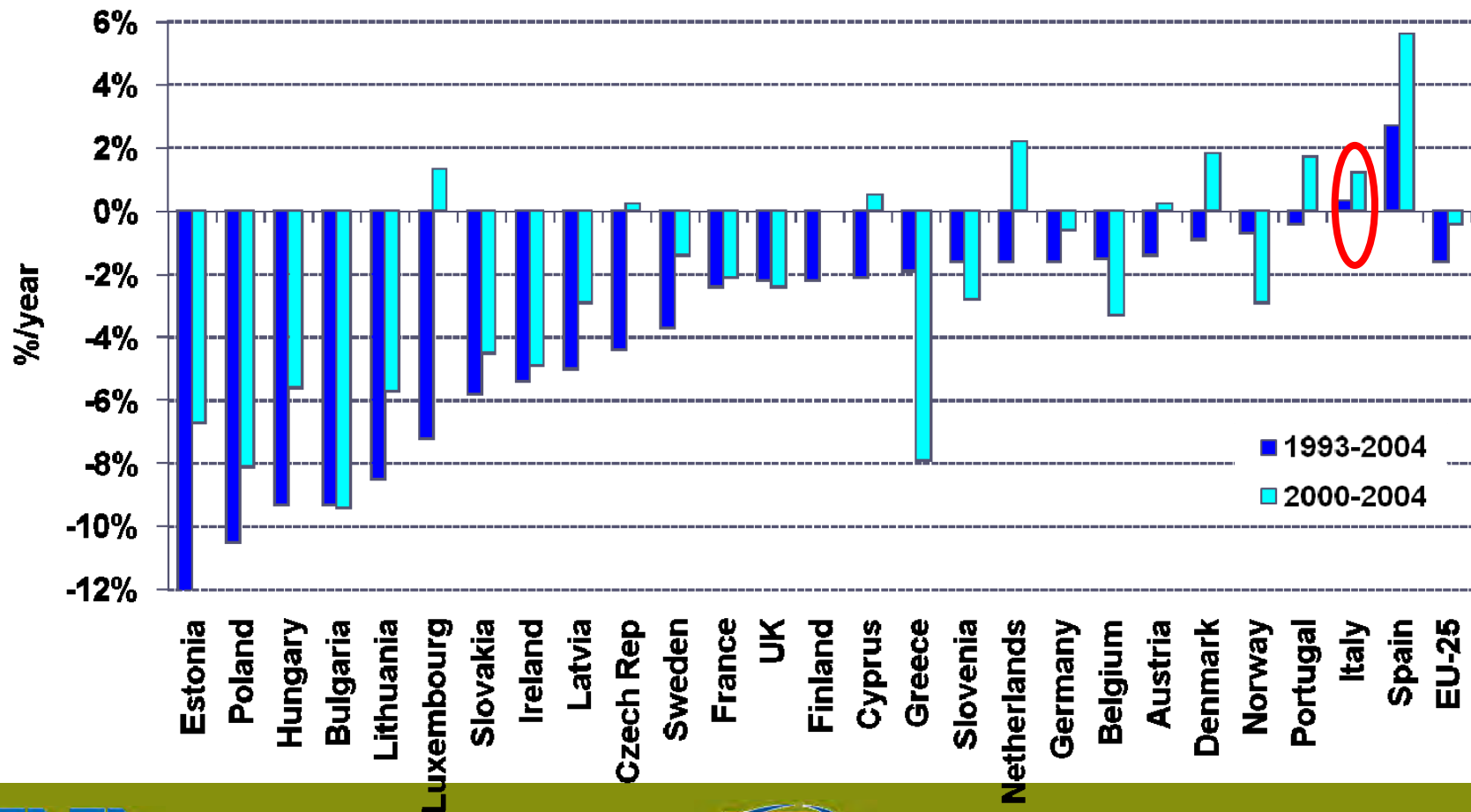
Slow down of the progression or decrease in almost all countries (except in the Netherlands and Germany )



\* Manufacturing industry

# Trends in industrial energy intensities in EU countries

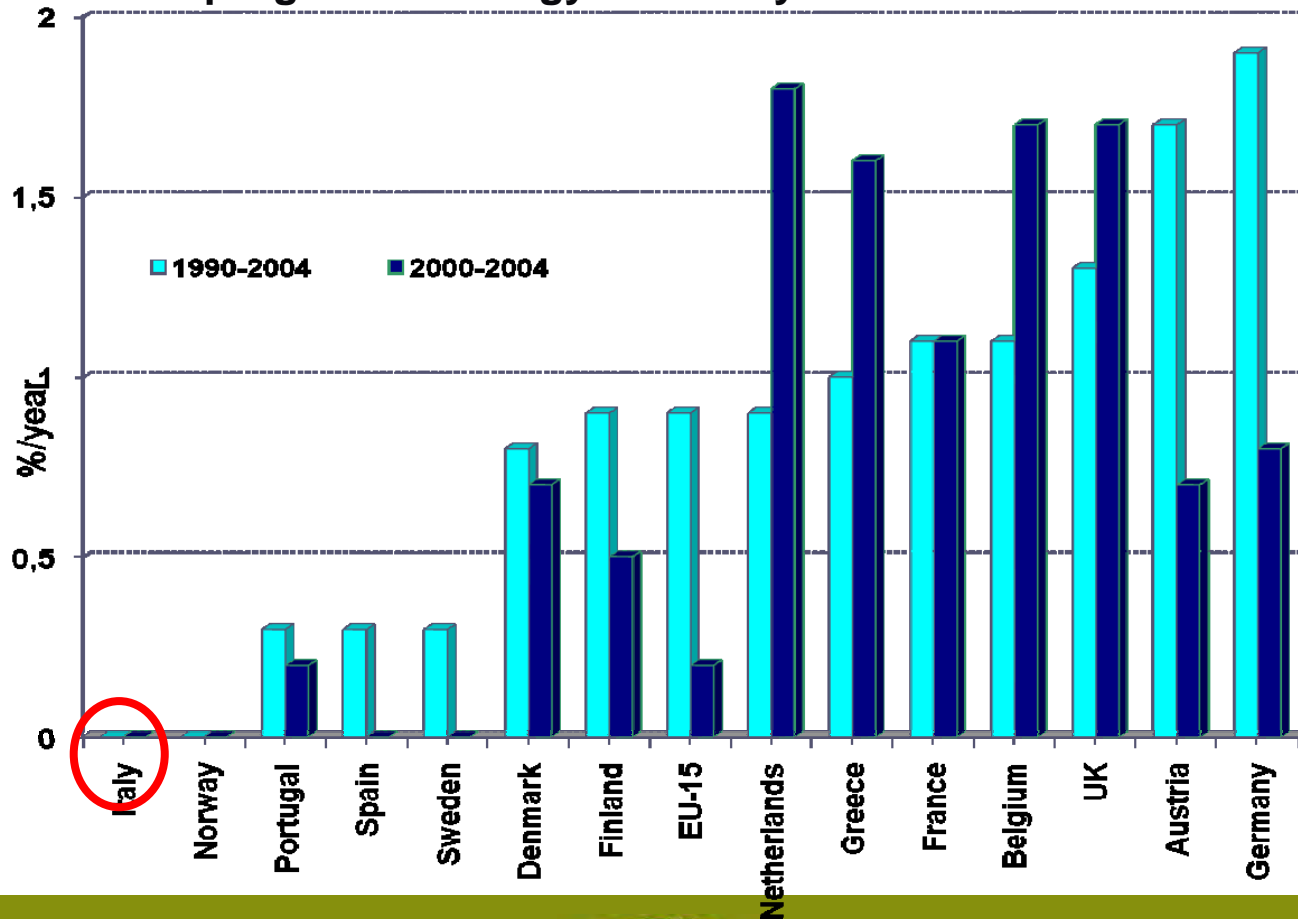
Decrease in almost all countries of the energy intensities of manufacturing , except in Spain, Portugal and Finland. Very rapid decrease in most NMC's ; 5 countries above – 8%/year . Much slower reduction in EU-15 countries and for the EU as a whole. Slower reduction since 2000 in most countries



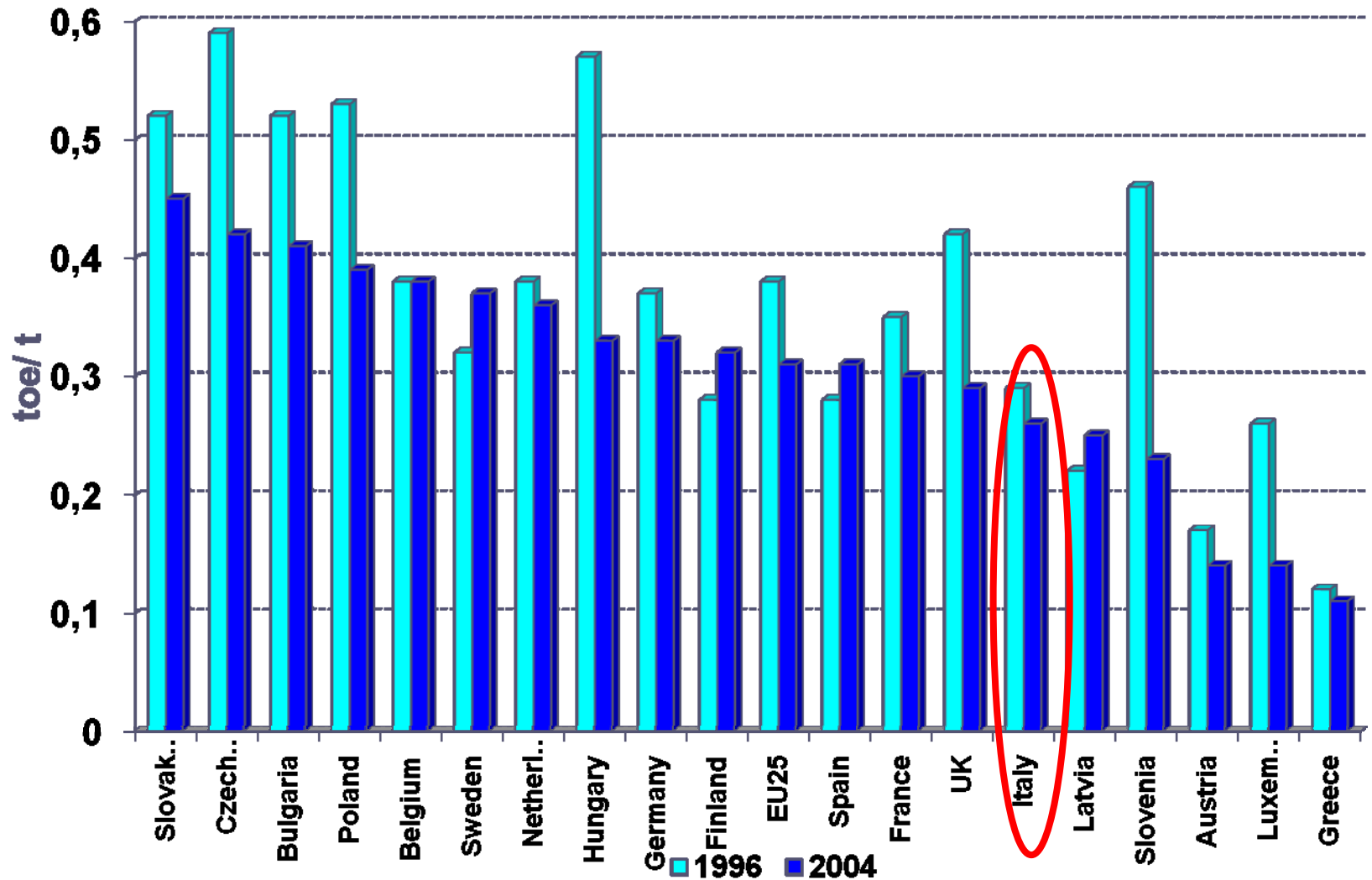
# Energy efficiency trends in industry in EU-15 countries

Energy efficiency improved on average by 1-1.5 % per year in industry in EU-15 countries between 1990 and 2004 , but quite unevenly across the countries; slow down since 2000 in most countries but acceleration in 3 countries

Annual progress in energy efficiency as measured from ODEX

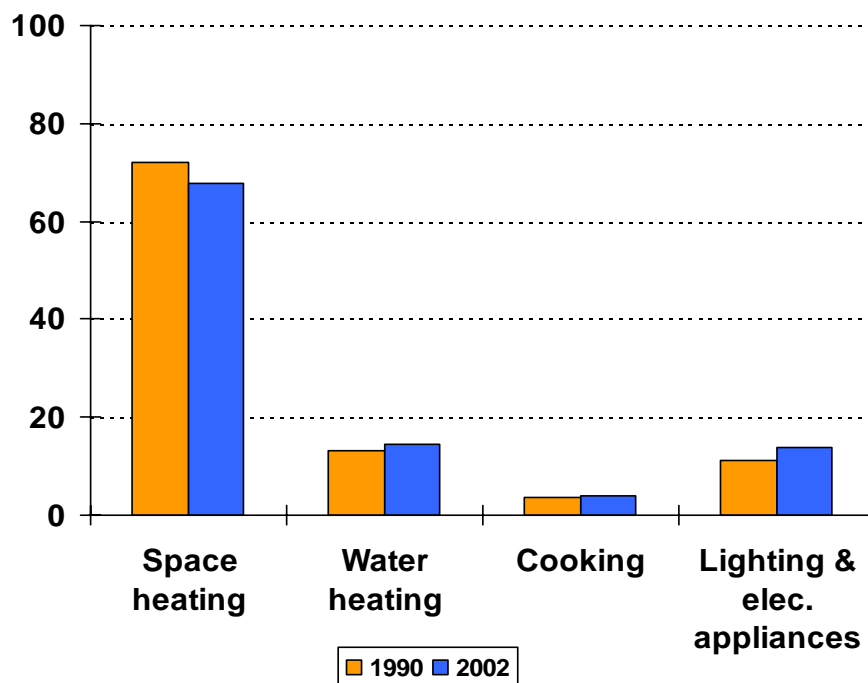
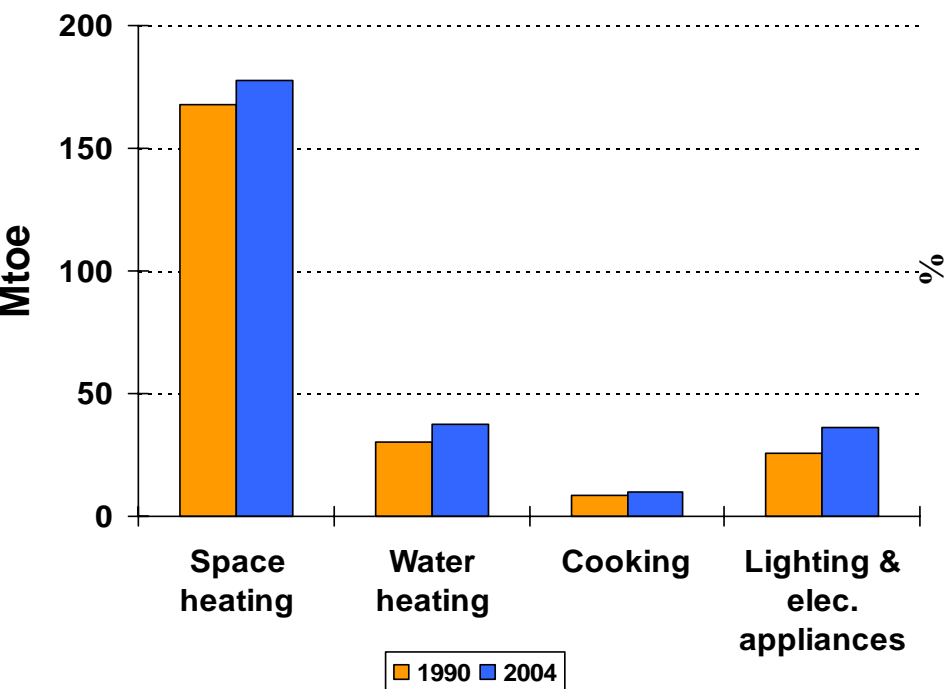


# Specific energy consumption per ton of steel in the EU



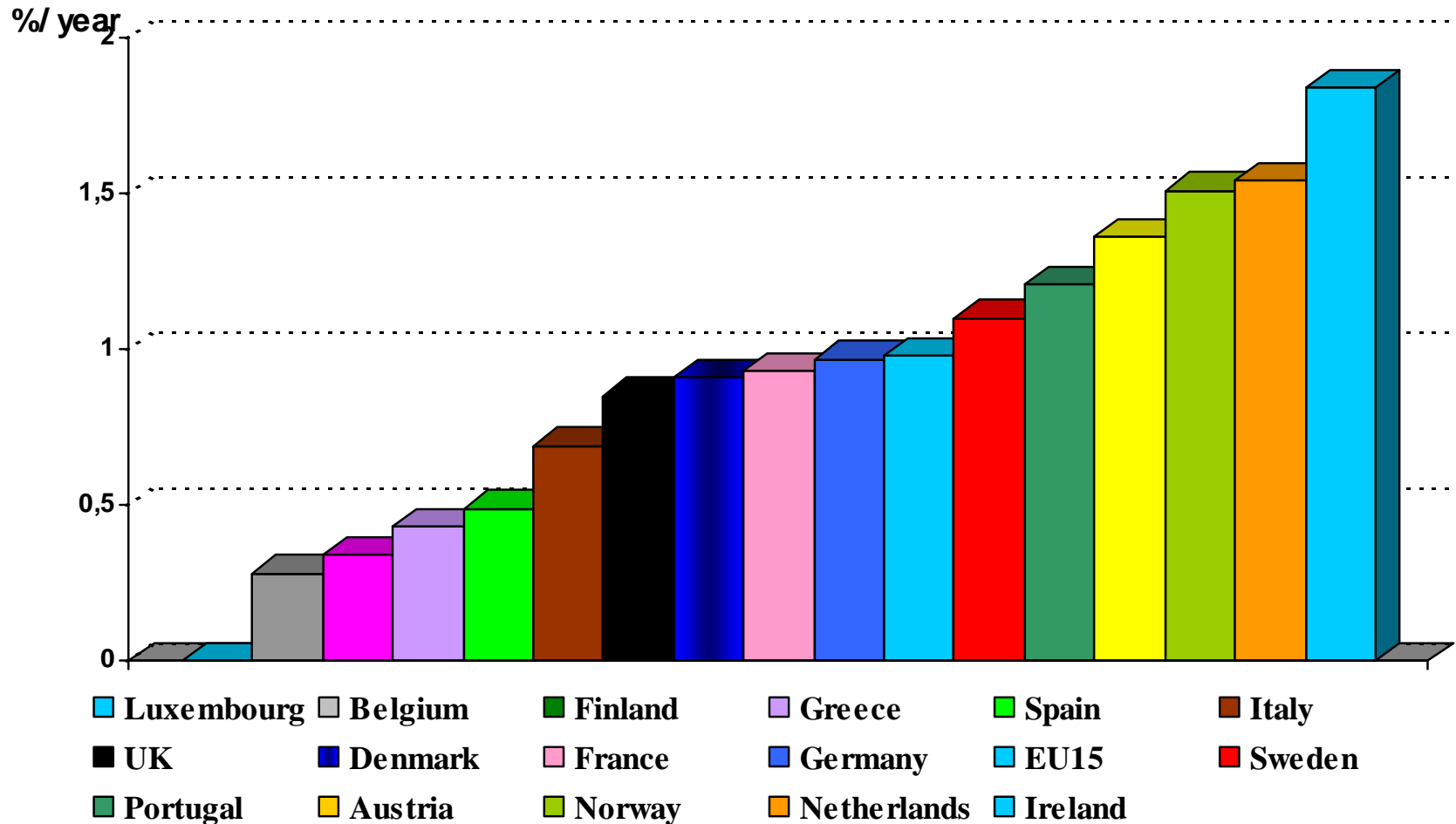
# Household energy consumption in the EU- 15

A progression of the household energy use in the EU-15 for all end- uses; declining share for space heating; increasing weight for electrical appliances and lighting





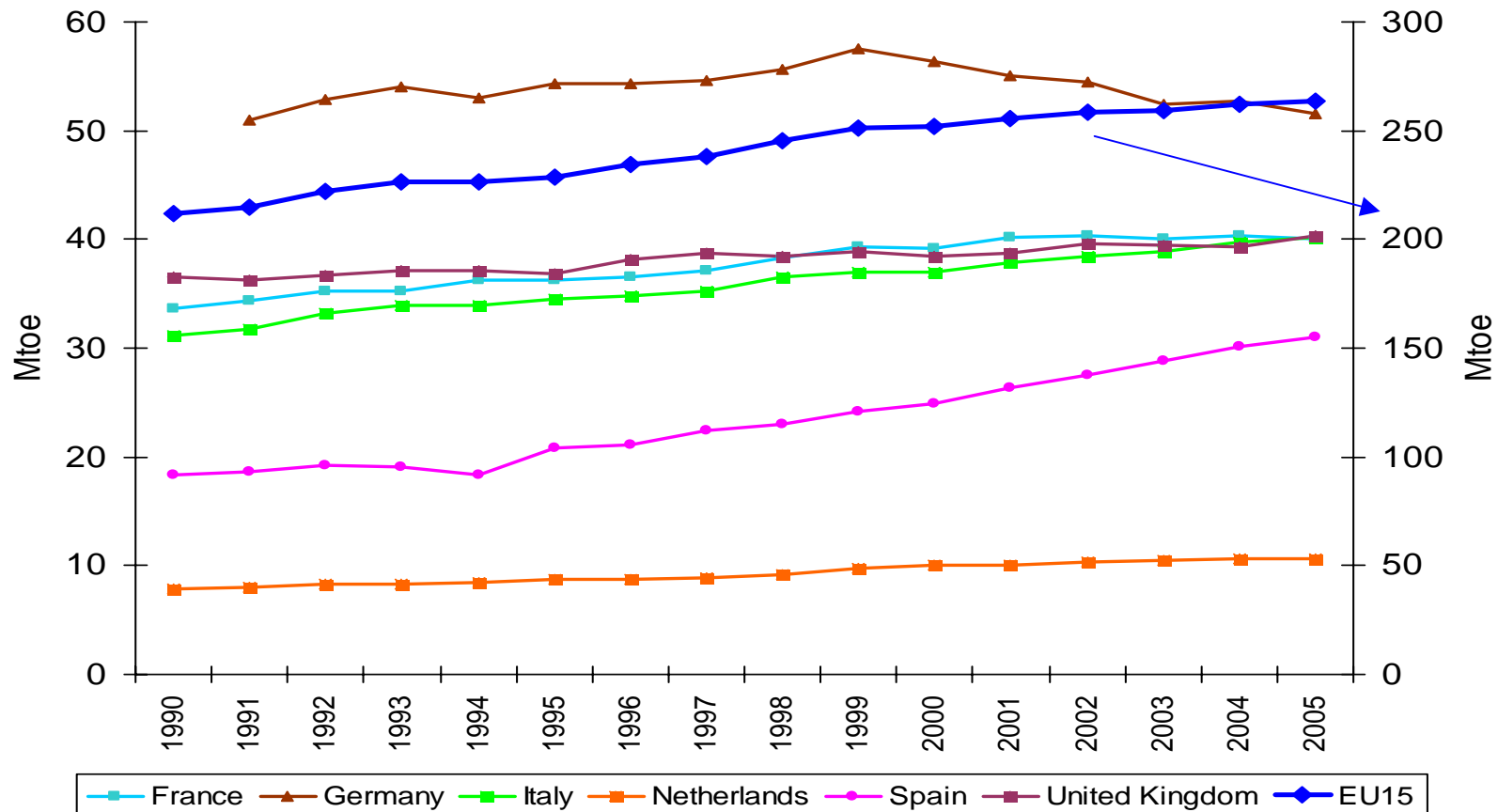
# Energy efficiency improvements in the household sector: EU-15 by country (1990/ 2004) (%/year)



# Energy consumption trends in road transport

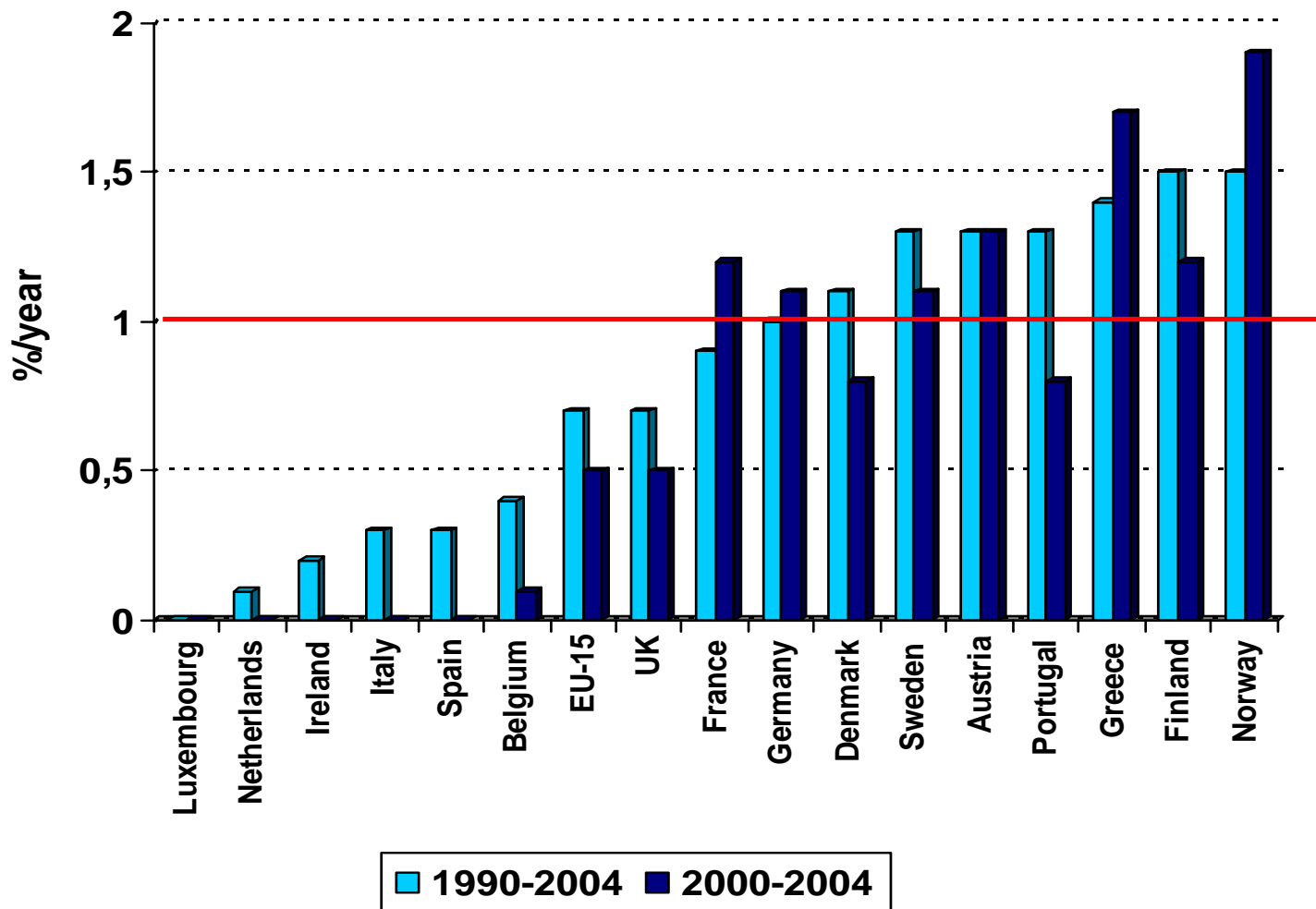
Stabilisation since 2000 in France and decrease in Germany: impact of the sharp increase in oil price in 2000 (+80% compared to 1999), pushed in certain countries by national measures (fuel tax increase in Germany and UK, speed meters setting in France...).

Slow down in the EU-15 since 2000



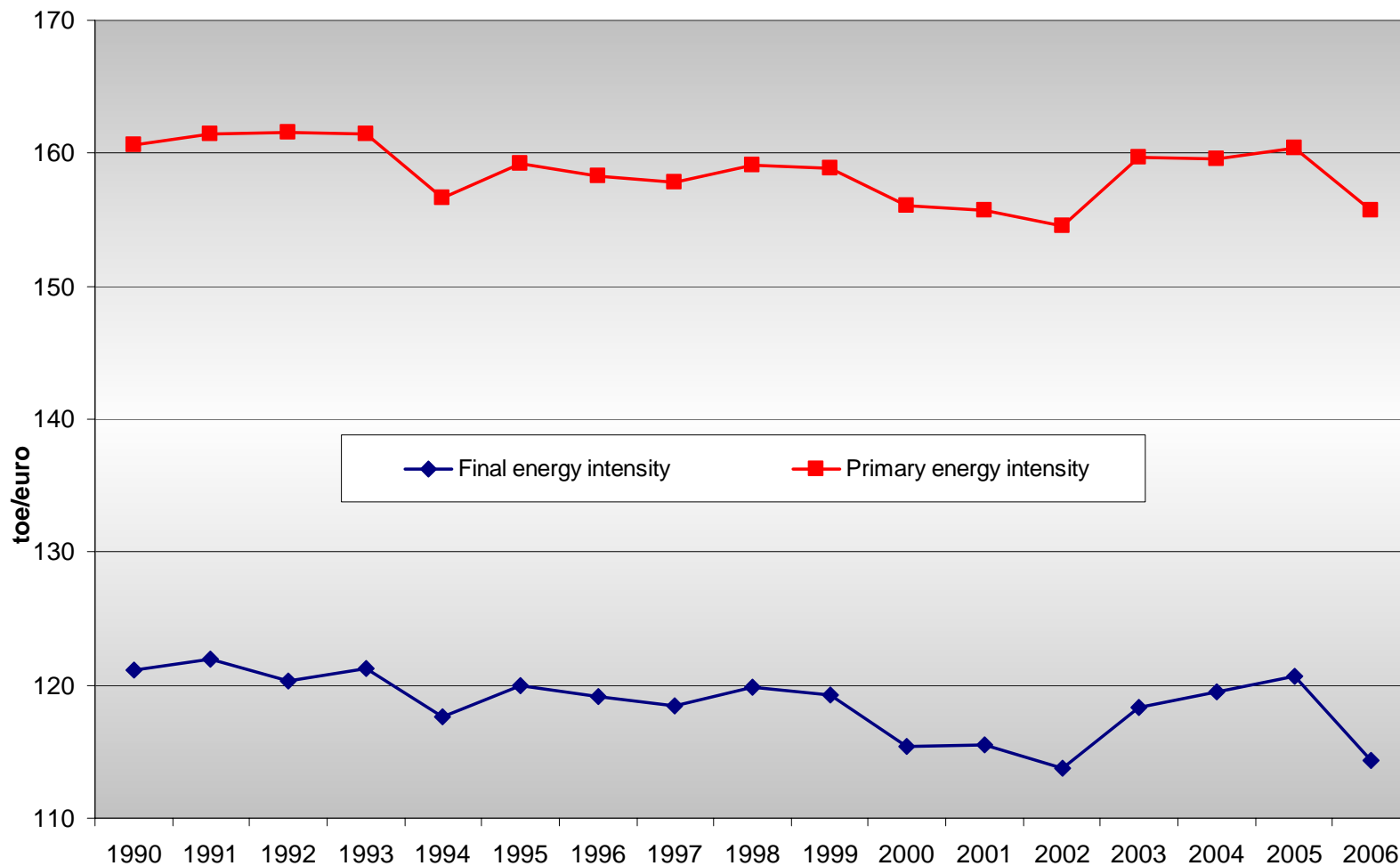
# Energy efficiency trends in transport

(as measured from the variation of the ODEX)

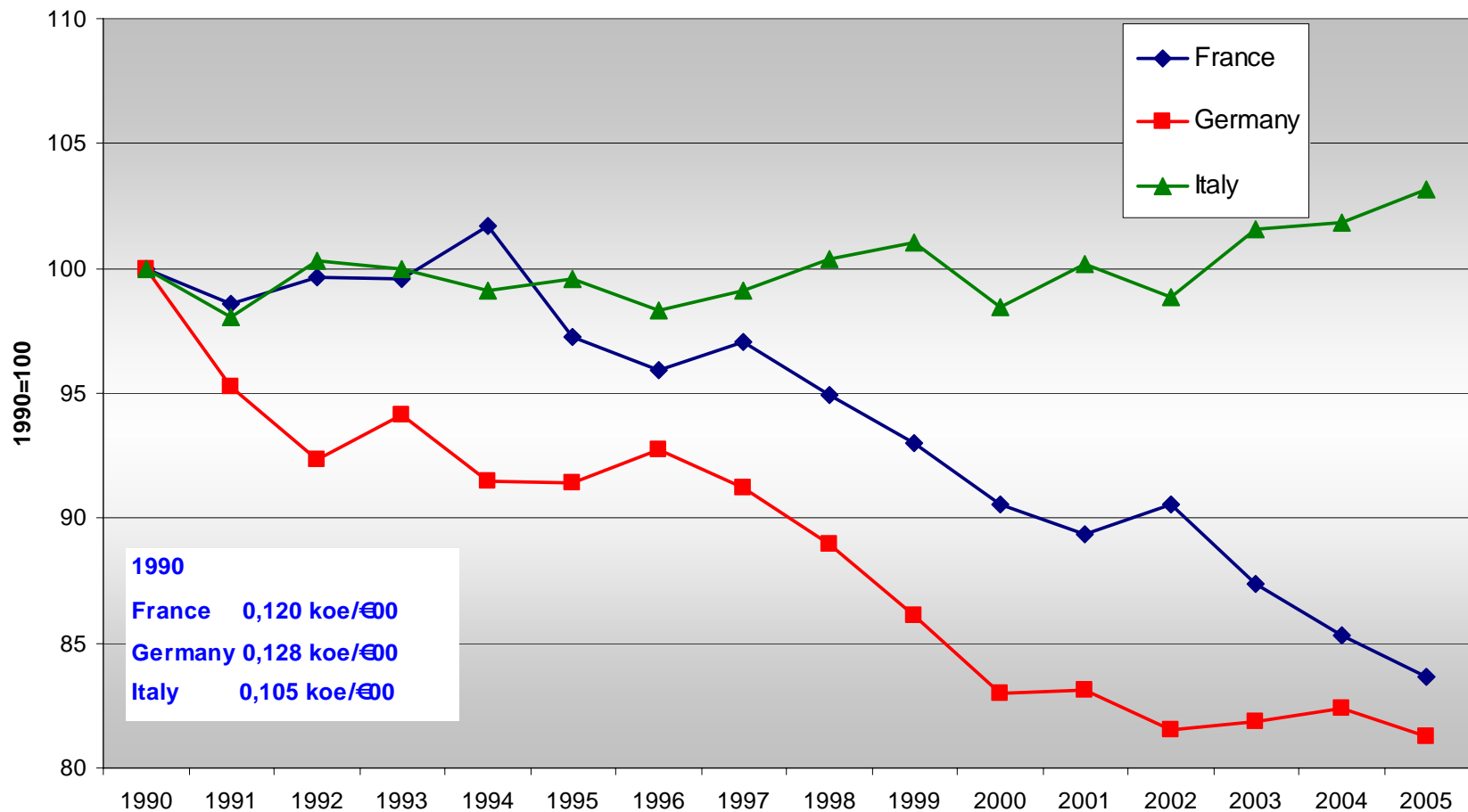


# Italy

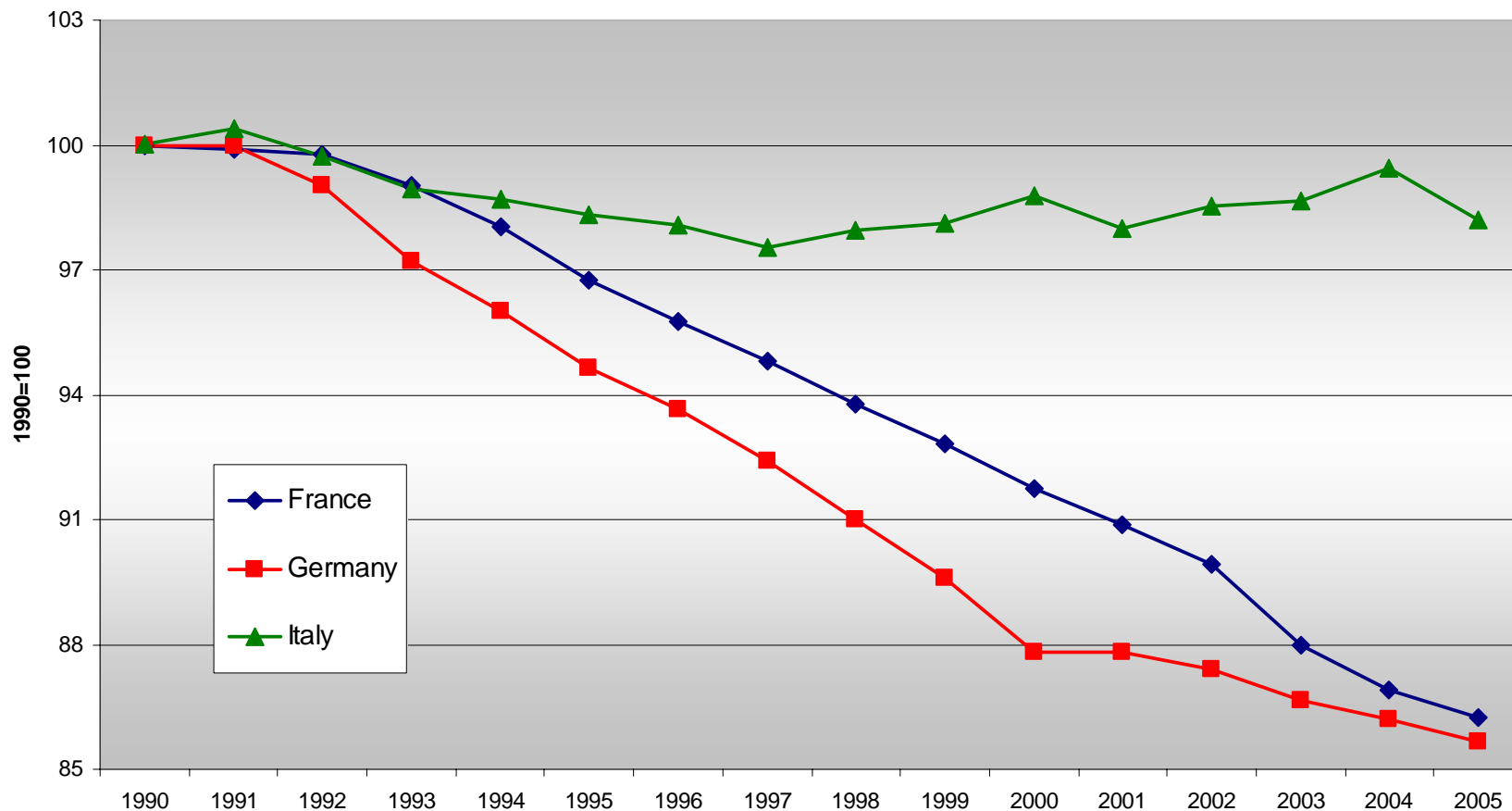
## Total energy intensity



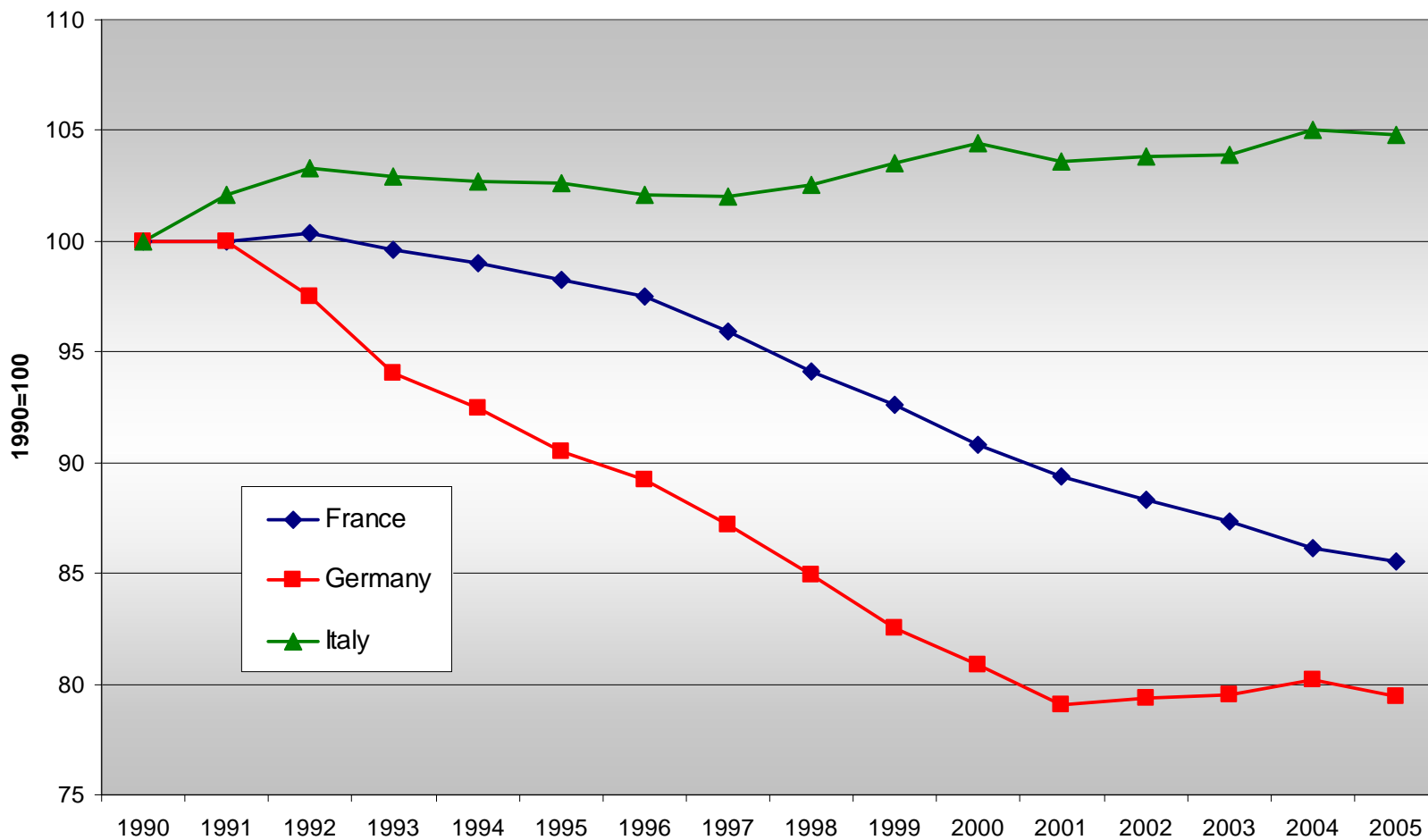
# Final energy intensities in some EU countries



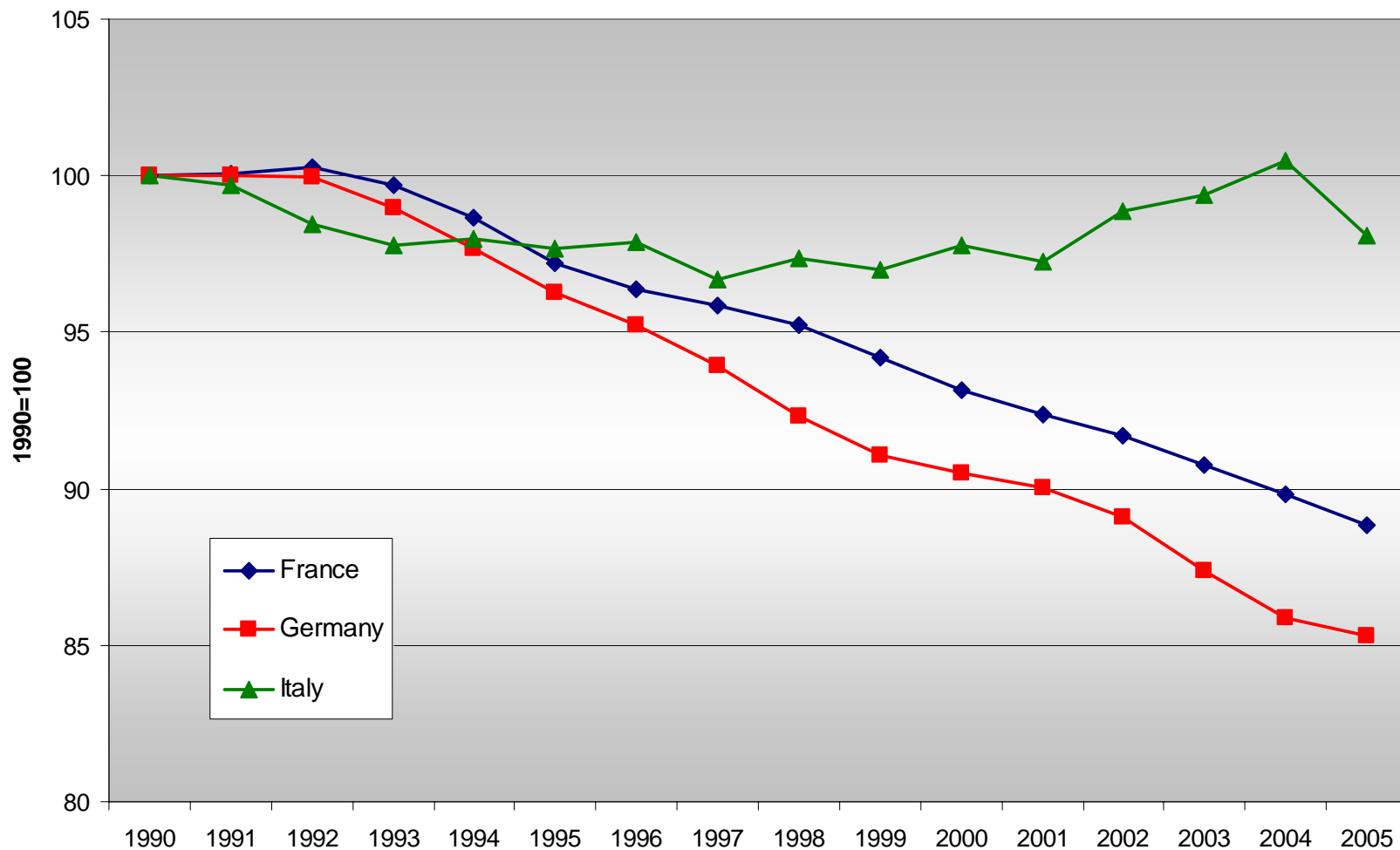
# Total energy efficiency indexes in some EU countries



# Manufacturing energy efficiency indexes in some EU countries



# Transport energy efficiency indexes in some EU countries





# Households energy efficiency indexes in some EU countries

