

Global Forum on Sustainable Energy  
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# **Energy Efficiency: Priority in an All-Energy Portfolio**

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**World Energy Council**

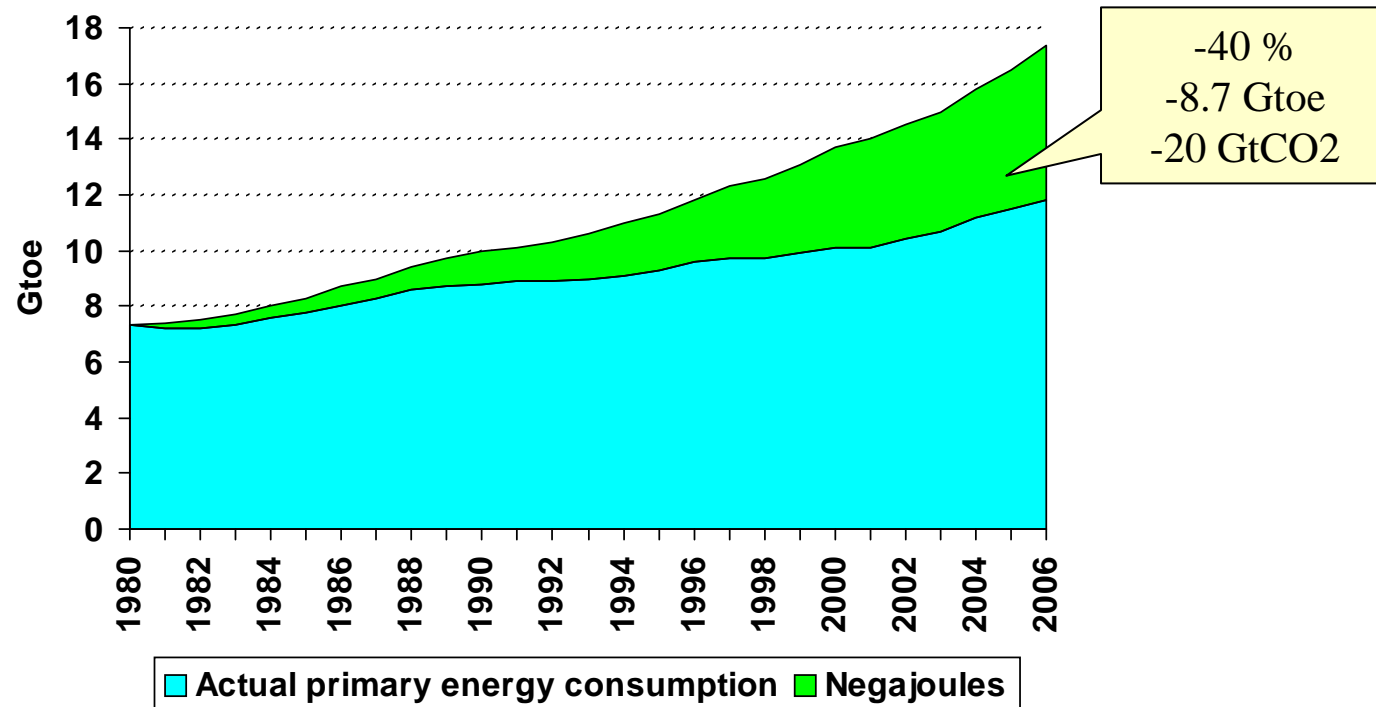
CONSEIL MONDIAL DE L'ENERGIE

## Credential:

- WEC/ADEME Study on
  - « **Energy Efficiency: A Worldwide Review**
  - Indicators, Policies, Evaluation - » (London, July 2007)**
- 100 experts, 4 international workshops
- 70 surveyed countries = 83 % of world energy consumption
- Contents:
  - ✓ Trends, global, regional and by sectors
  - ✓ Drivers and impediments
  - ✓ Policies and institutions
  - ✓ Country case studies
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  - info@worldenergy.org

First message: Steady efficiency growth worldwide at 1.6 % p. a.

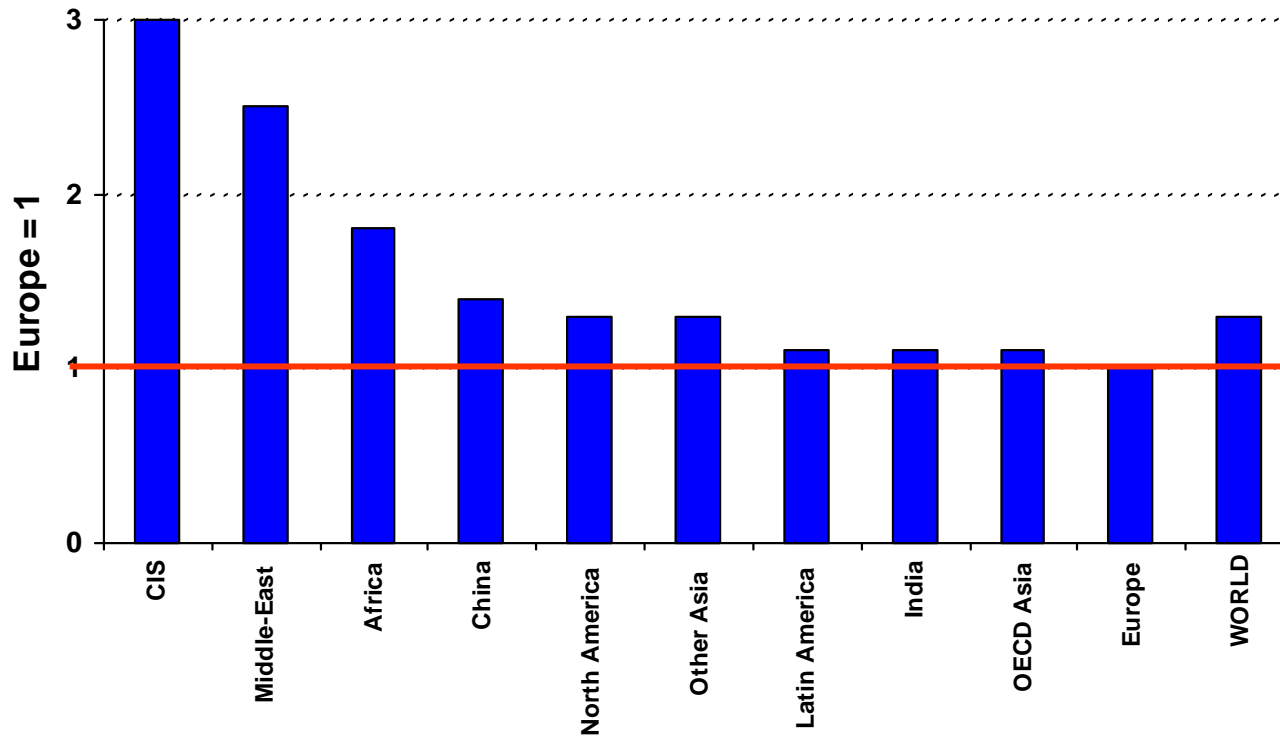
### World energy consumption and savings from reduced energy intensity



Efficiency growth 1980-2006: 1.6 % p. a.; 1990-2000: 1.8 % p. a.; 2000-2006: 1.4 % p. a. (boom in China);  
source: WEC, Energy Efficiency – A Worldwide Review, p. 12;

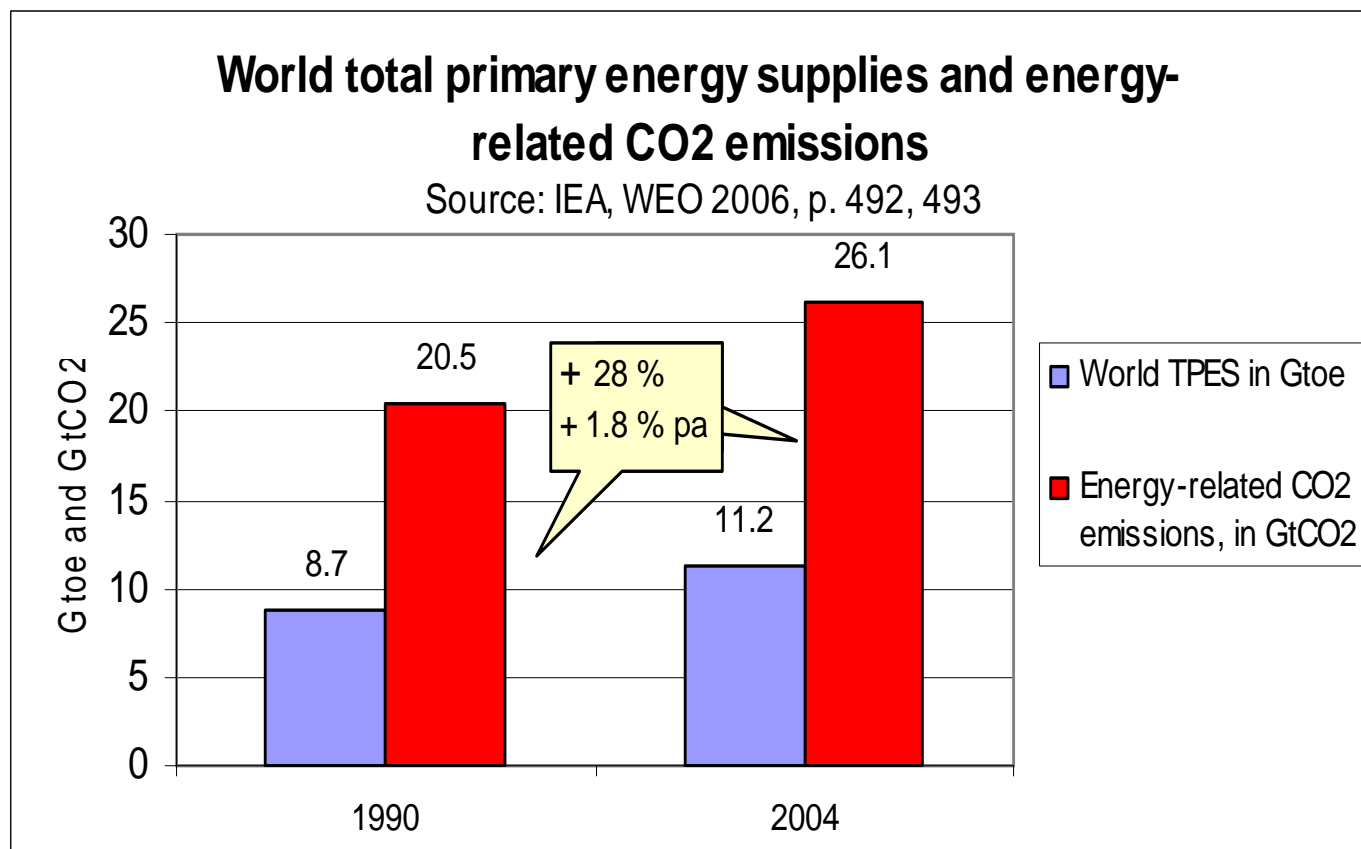
However, particularly CIS, Middle East, Africa lag behind Europe

**Regional primary energy intensity, 2006 (Europe = 1)**



Source: WEC, Energy Efficiency, op. cit., Fig. 2.2

Second message: That efficiency growth was not enough to curb CO<sub>2</sub> emissions or relieve pressure on finite natural resources.



## Third message: Energy efficiency growth suffers from ...

### 1. **Tampered price signals**



In market economies, as a rule, energy prices correctly reflect supply cost, but exclude environmental externalities and long-term marginal development cost.



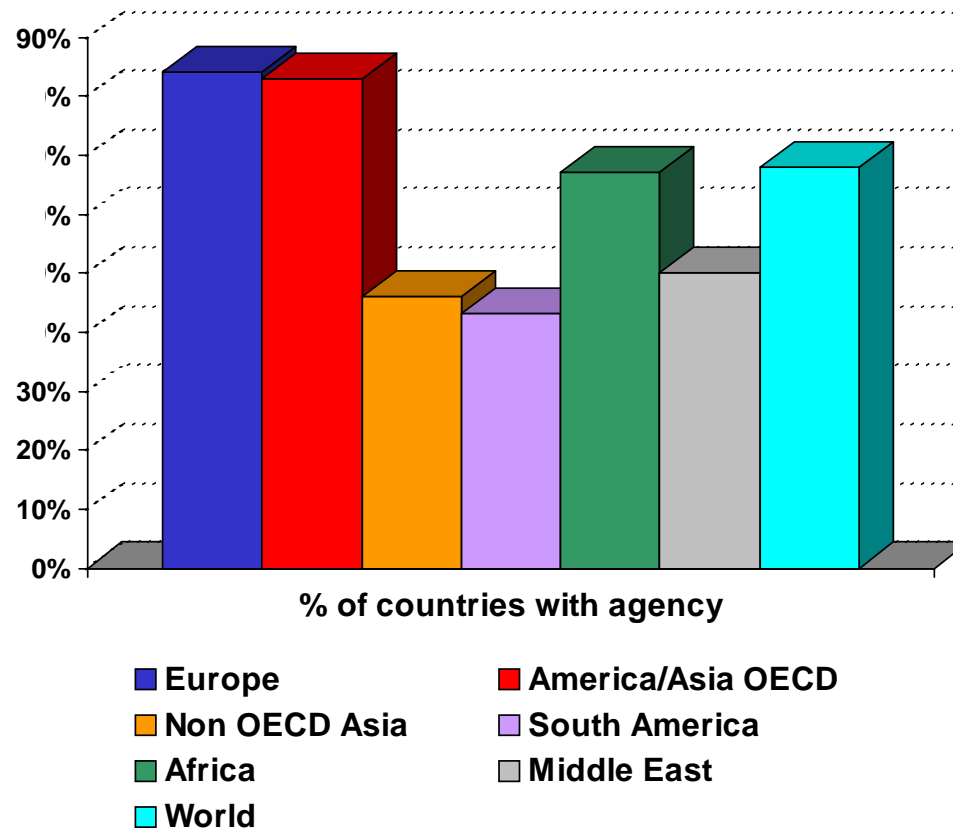
In emerging countries, energy prices are often kept artificially low for social reasons. Investments suffer from a lack of consumer information, technical and commercial services, and capital.

## 2. Ineffective governance

↓ One third of the surveyed countries have no energy efficiency agency

↓ 10 % have no such department in the ministry

Percentage of countries with energy efficiency agencies

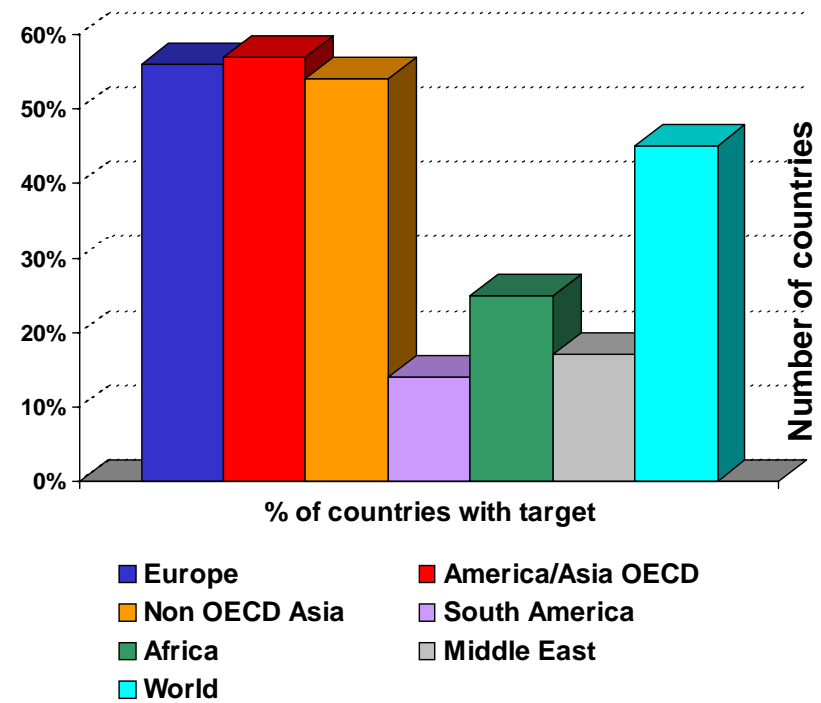


Source: WEC, Energy Efficiency, op. cit., fig. 3.2

### 3. Undetermined targets

↓ About one half of the surveyed countries have no quantitative efficiency plans and targets and related monitoring

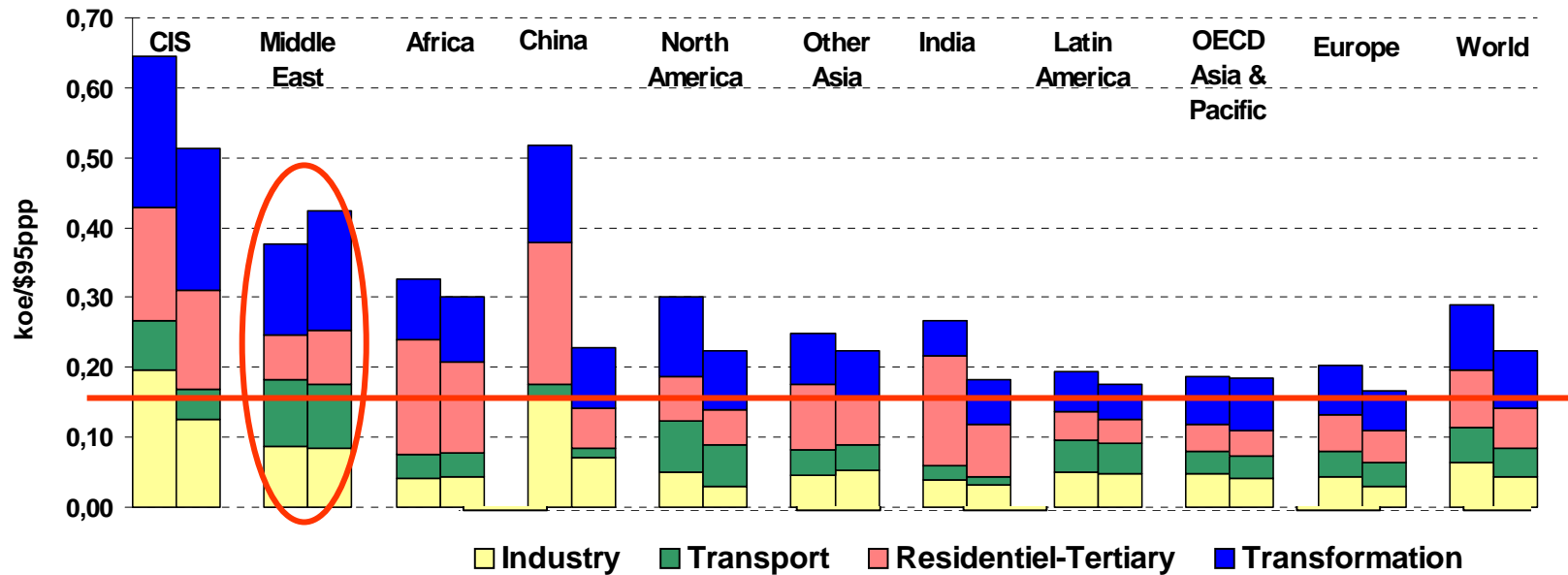
Countries with quantitative efficiency targets



Source: WEC, Energy Efficiency, op. cit., fig. 3.3

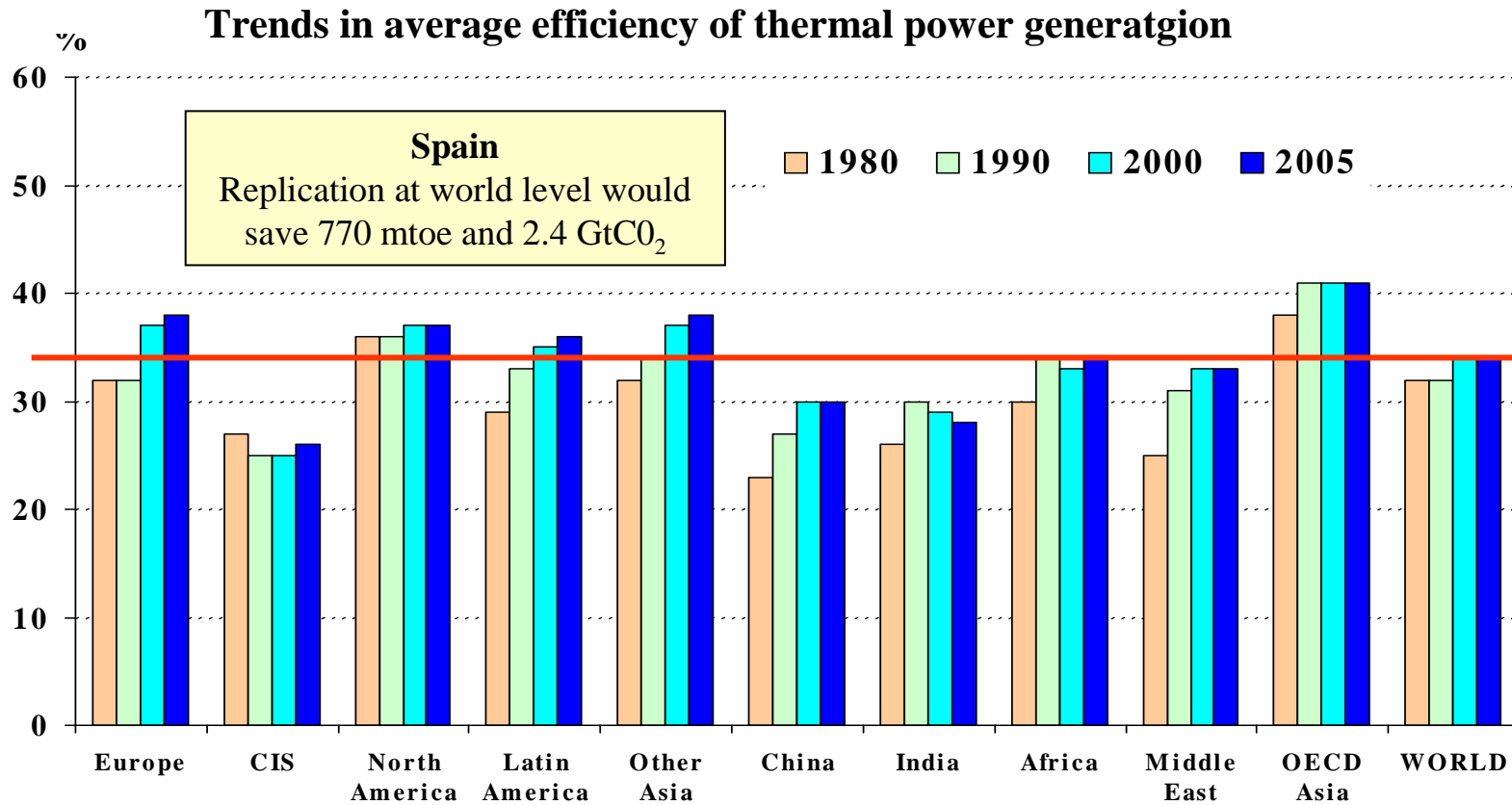
## 4. Diverging sectoral structures, dynamics, policy priorities

Primary energy intensity, total and by sectors, 1990 and 2006



- ↓ All regions, particularly CIS, and 70 countries, particularly China, reduced their energy intensity.
- ↓ So did all sectors, particularly households in emerging countries, industry in Europe.
- ↓ In about 30 countries, intensities increased (Middle East, South Europe, Africa, Latin America,

## 5. Delayed technological adaptation

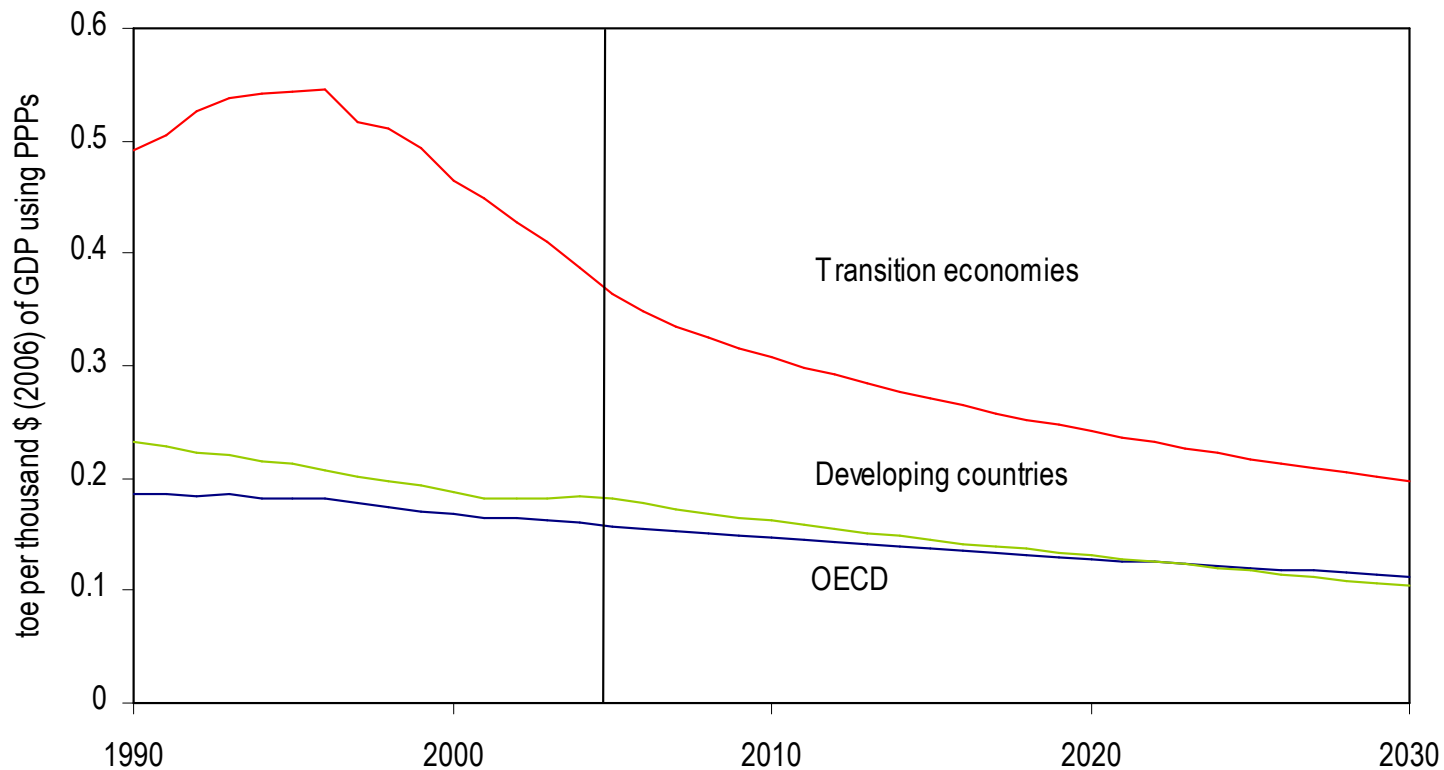


- ↓ Global improvement 1990-2005 by only 2 % age points to 35 %;
- ↓ Spain on top 46 %

Source: WEC, Energy Efficiency, op. cit., fig. 2.9

Fourth message: Energy intensities are expected to fall to 2030, with developing countries joining OECD countries around 2020.

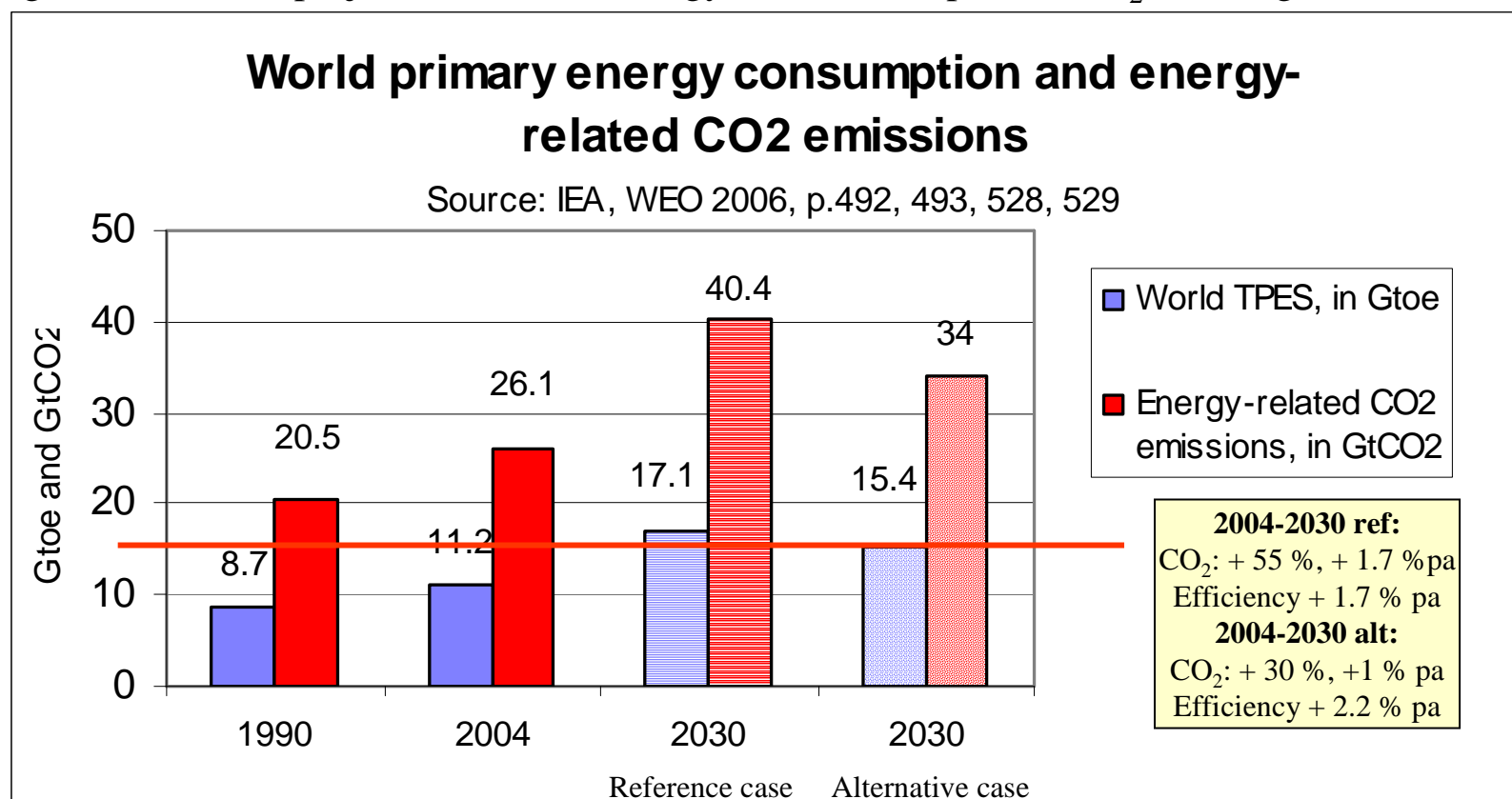
**Primary energy efficiencies by world regions**



Source: IEA, WEO 07, Chapter 1, reference scenario

Fifth message: By 2030, reduced intensities ↓ would have curbed world energy consumption growth and CO<sub>2</sub> emissions, but not below present or 1990 levels.

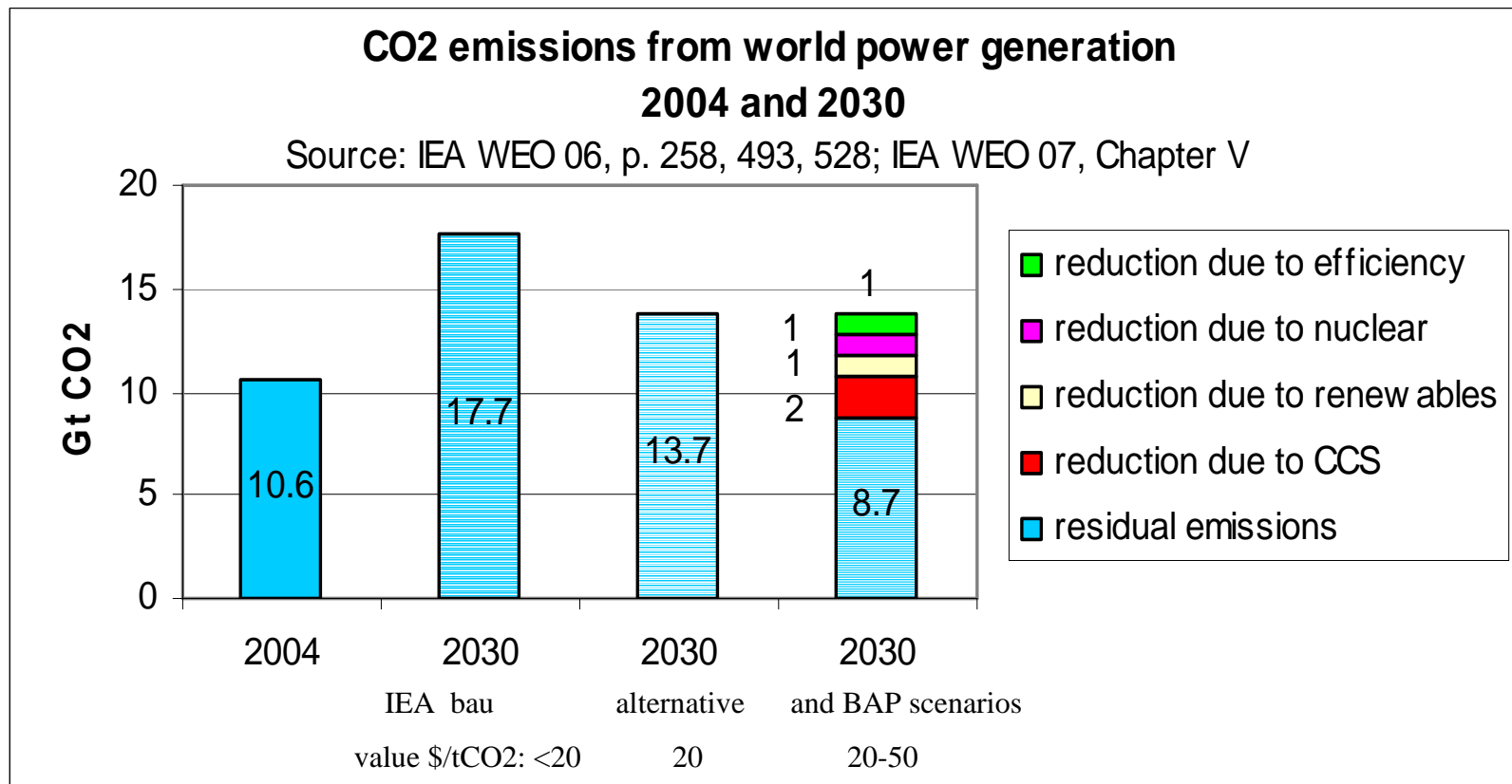
↓ Mandatory overall targets (EU: 20 % by 2020); retrofit for old buildings; building certificates; minimum performance standards of labelled equipment; new incentives such as emission rights from CDM projects; ESCOs = Energy Service Companies; CO<sub>2</sub> labelling of cars



Conclusion:

Efficiency – yes, a priority,  
but as part of a portfolio

↓ Efficiency as part of a portfolio approach; the example of power generation



Thank you.



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