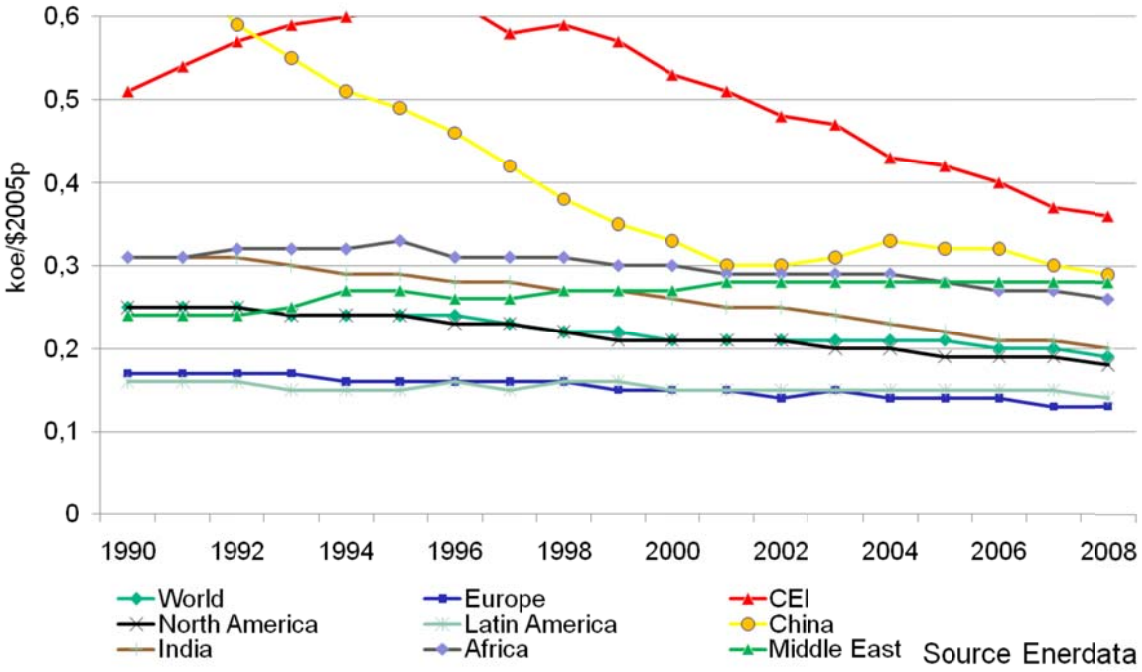
WORLD ENERGY COUNCIL
CONSEIL MONDIAL DE L'ÉNERGIE
For sustainable energy.

Energy Efficiency: A Recipe for Success

Annex 1

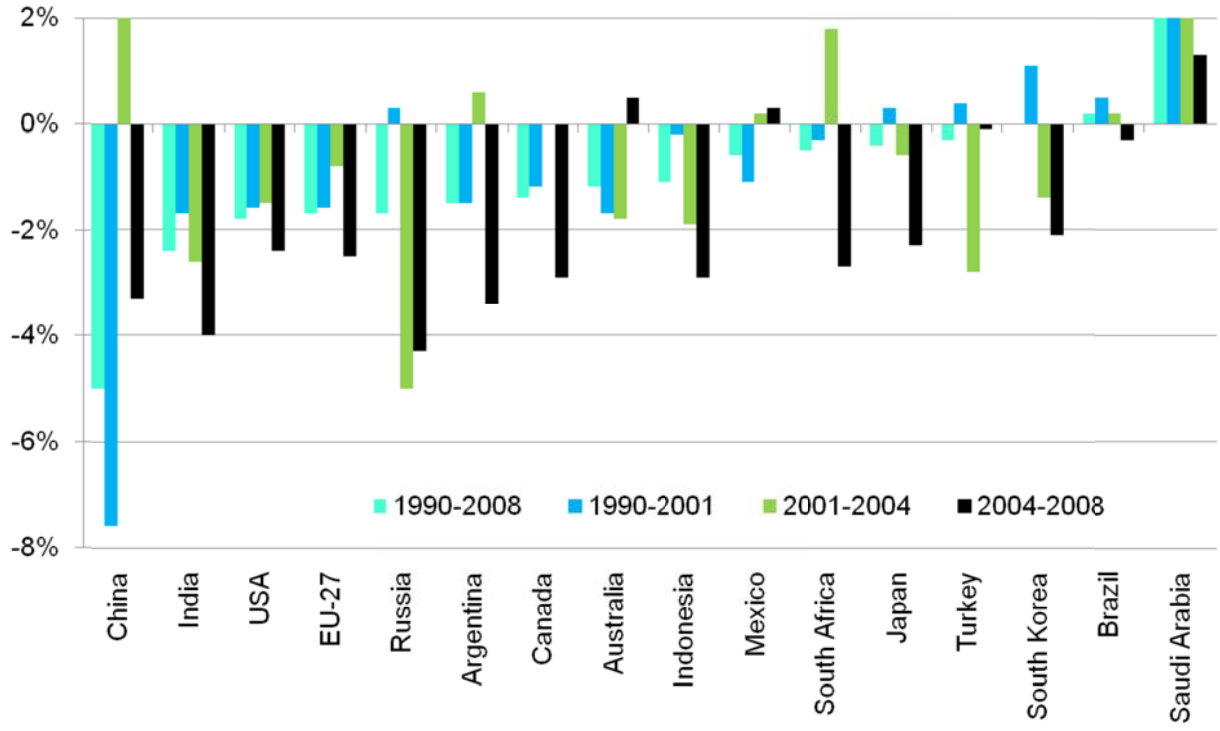
Energy efficiency and CO_2 trends at world level

Figure A 2.1 Trends in the primary energy intensity by world region



There is a rapid reduction for China or CIS countries, and to a lesser extent India. There is some convergence in the primary energy intensity levels over time. The trend and level are very close for Europe and Latin America.

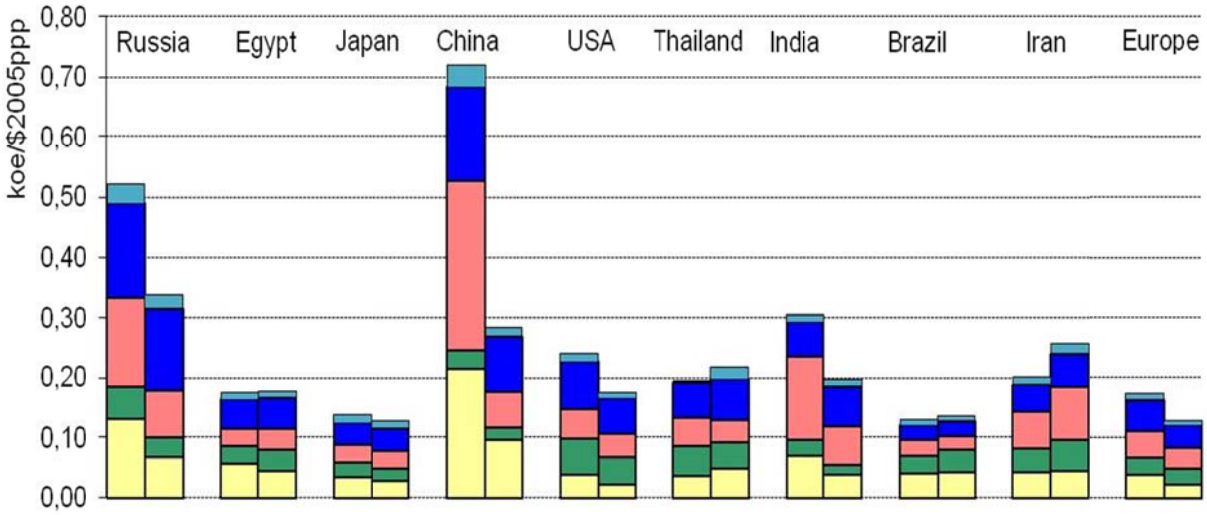
Figure A 2.2 Variation of primary energy intensity in G-20 countries



Source: Enerdata

Since 2004, there is an acceleration of the primary energy intensity decrease in all G-20 members, except Saudi Arabia, Australia and Mexico.

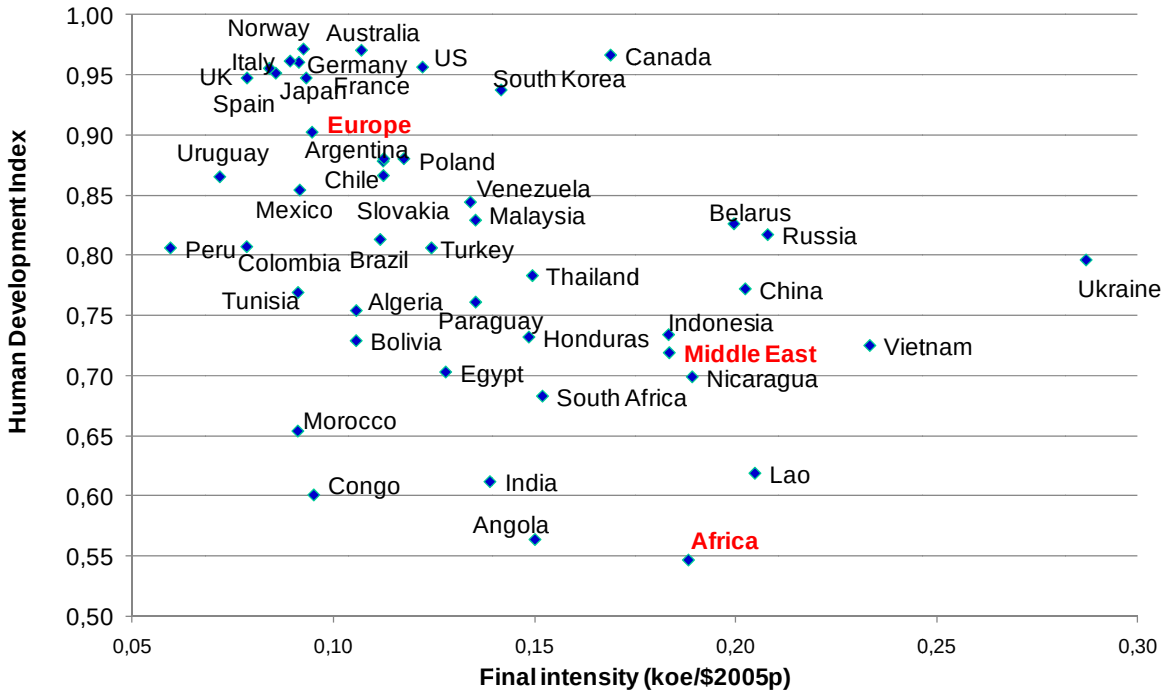
Figure A 2.3 Primary energy intensity by sector in selected countries (1990-2008)



Source: Enerdata

There is a reduction of the primary energy intensity in all countries except Egypt, Thailand, Brazil and Iran. Decreasing intensities are mainly due to industry in Russia, China, UE and/or to households in Russia, China and India.

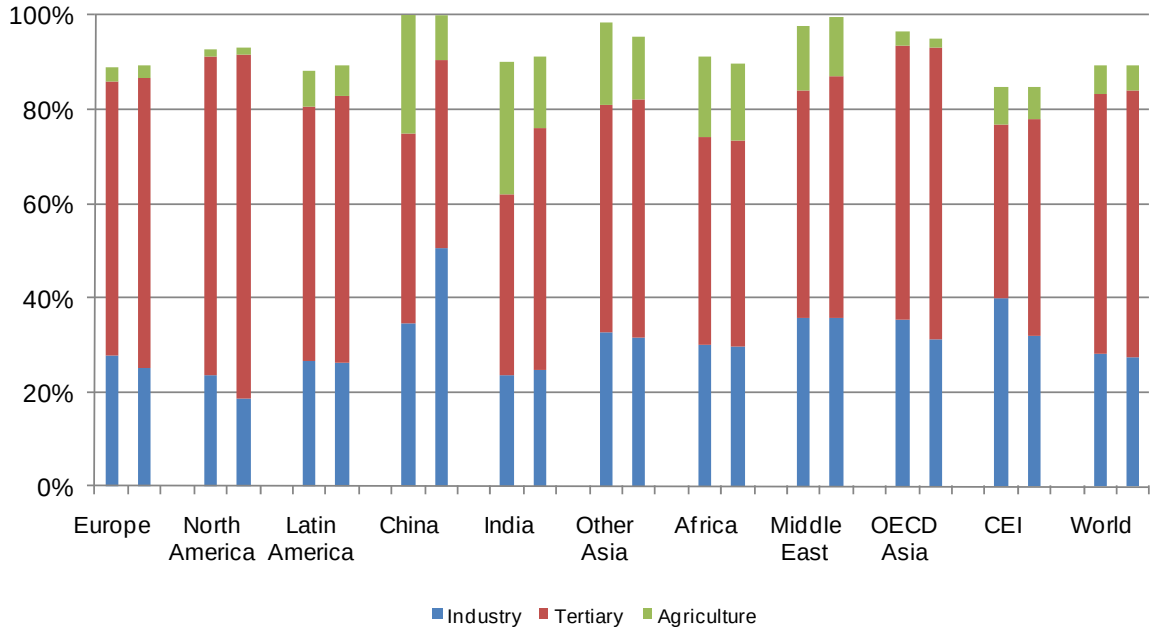
Figure A 2.4 Final energy intensity in relation to HDI (Human Development Index* (2007)



Source: Enerdata

Generally, countries with a high HDI have also a lower final energy intensities; however the correlation is not so clear.

Figure A 2.5 Structure of GDP by main sector



Source: Enerdata

Figure A 2.6 Specific electricity consumption for primary aluminium production

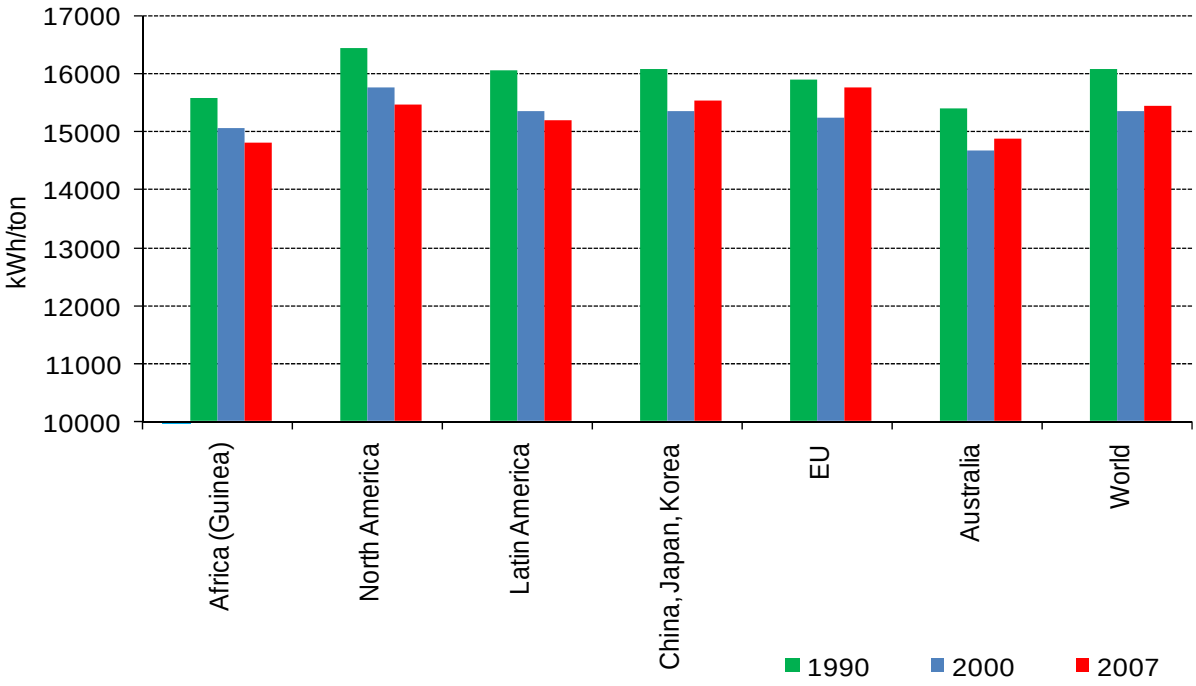
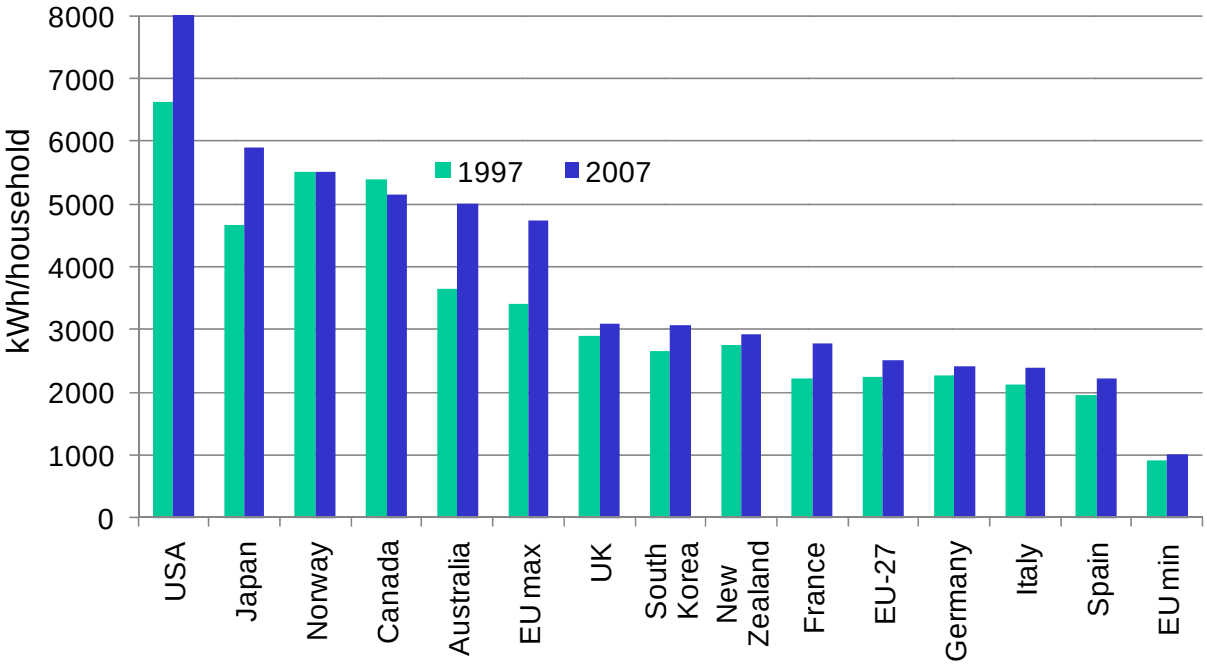


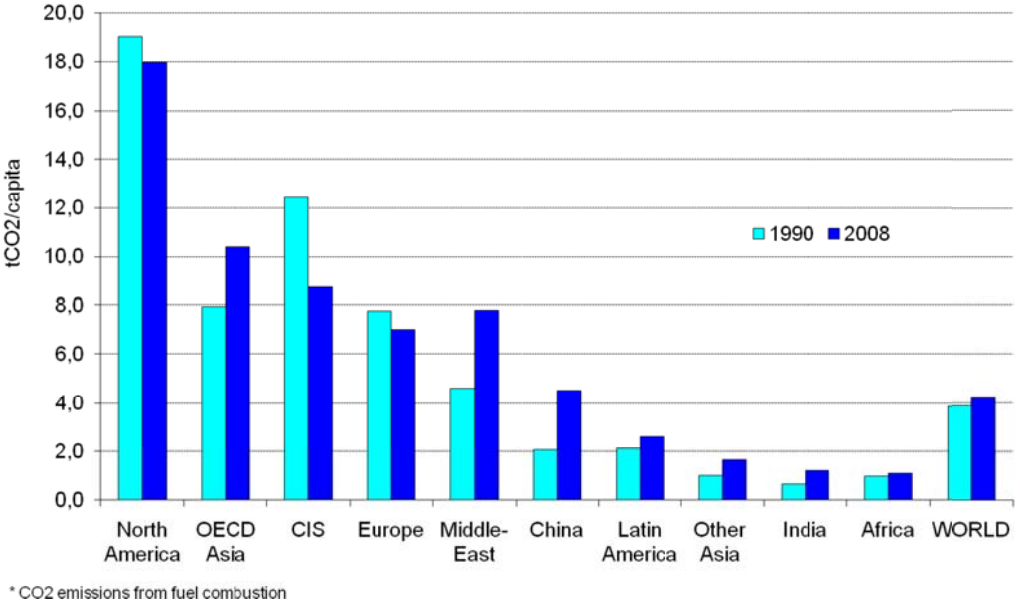
Figure A 2.7 Household electricity consumption for electrical appliances & lighting in OECD countries (thermal uses excluded)



Source: Enerdata *from ODYSSEE database*

The comparison of electricity consumption per household is more relevant if thermal uses (space heating, cooking and water heating) are excluded, restricting this consumption to captive uses of electricity, such as refrigerators, TV, washing machines or lighting, as some countries tend to use electricity for thermal uses because of low electricity prices (e.g. Norway, Canada). However, due to data availability such comparison is limited to OECD countries. For these countries, the annual consumption per household for appliances and lighting ranged between 1000-5000 kWh in the EU and 8000 kWh in the USA in 2007. Trend in this consumption is driven upwards by the increased appliances ownership but is slowed down because of the measures implemented on these appliances. The progression is moderate in some countries, such as Canada, UK, Germany, or Norway.

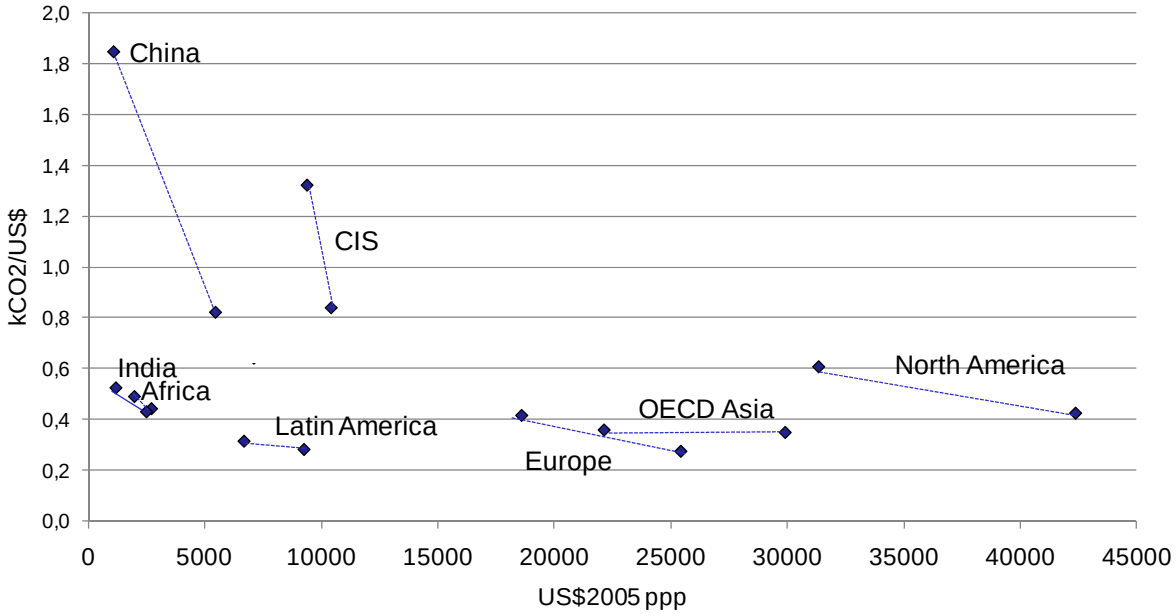
Figure A 2.8 Variations in CO2 emissions per capita *



Source: Enerdata

At world level, CO2 emissions per capita have increased by 8% from 1990 to 2008. The largest progression is observed in OECD Asia and Pacific, Middle East and China

Figure A 2.9 Variation in CO2 intensity by region (1990-2008)



Source: Enerdata

Decrease of CO2 intensity in all regions: very rapid in China and CIS countries