

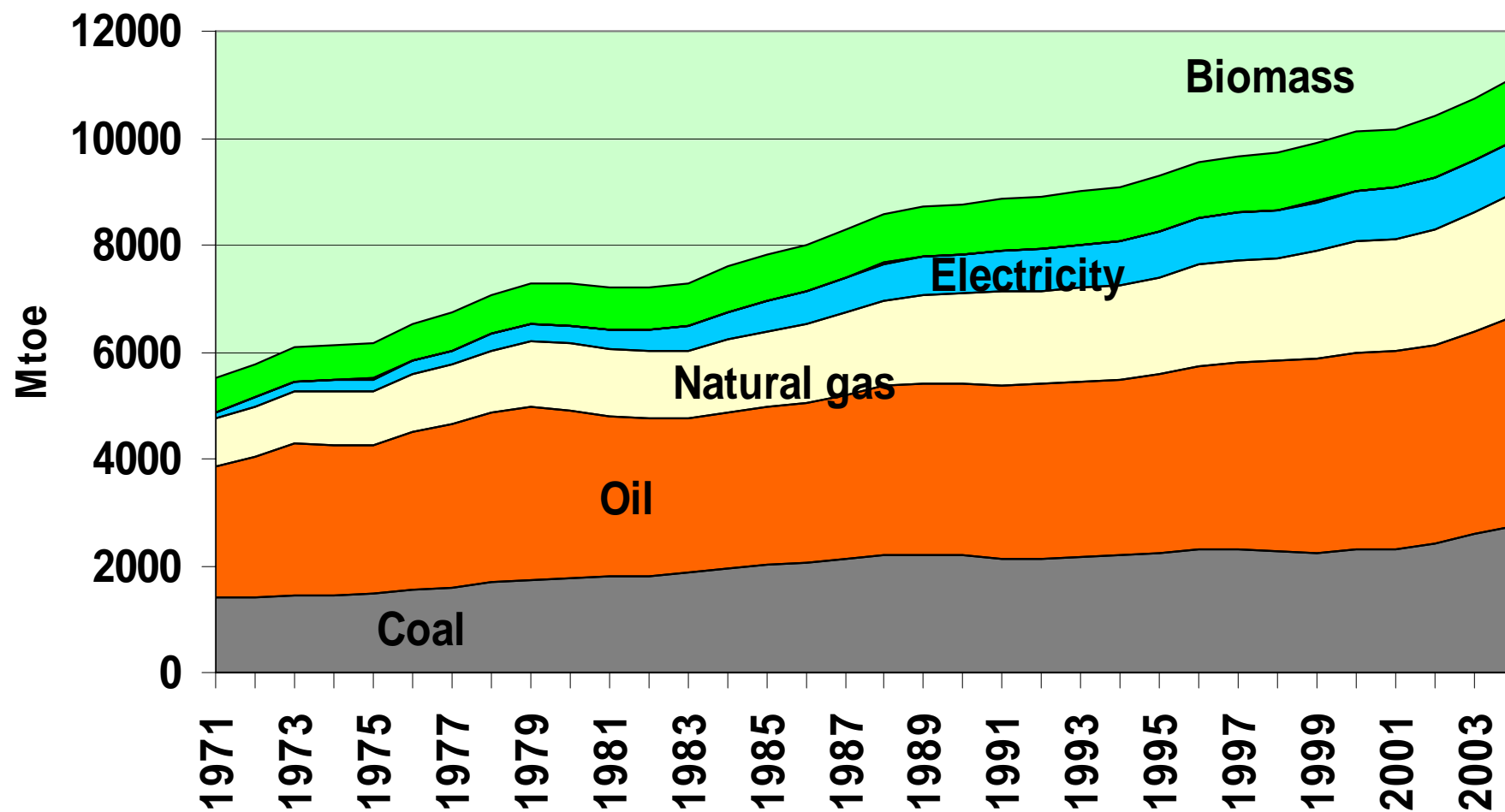
Energy Efficiency

For Energy Security and Sustainable Development

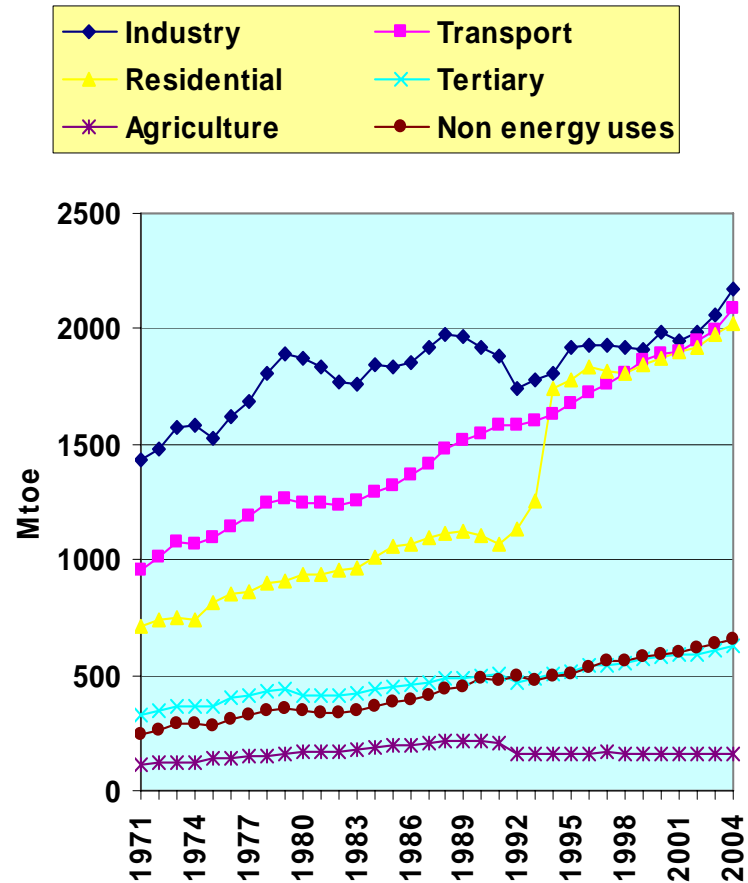
Bernard LAPONCHE

UNECE - Sustainable Energy Committee
Geneva - November 30, 2006

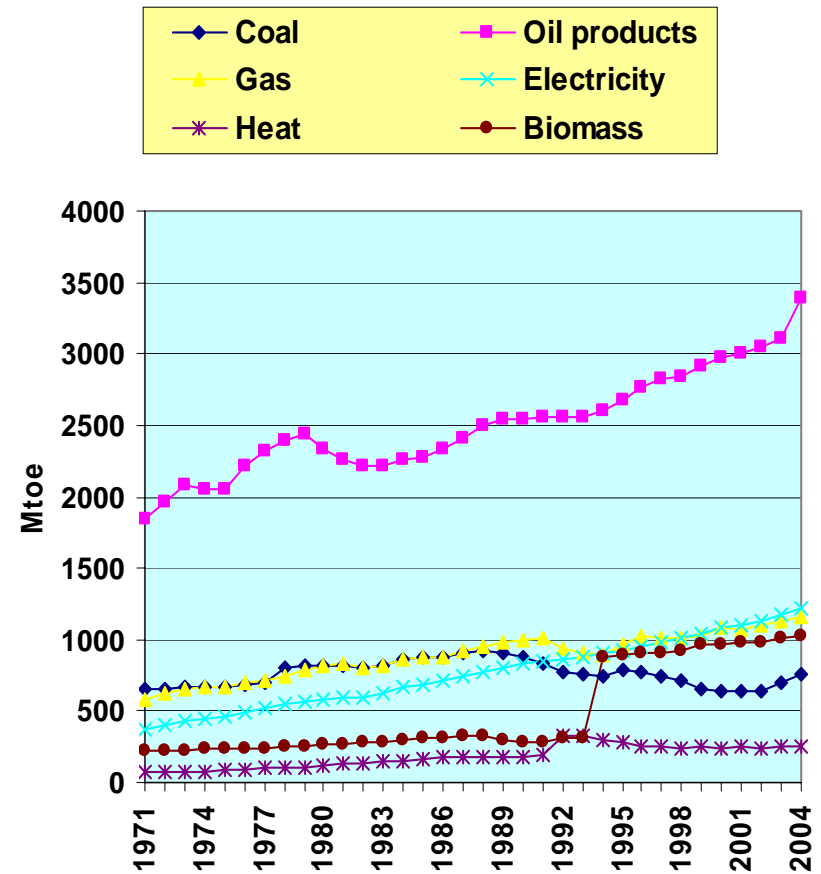
World : Primary Energy by Source



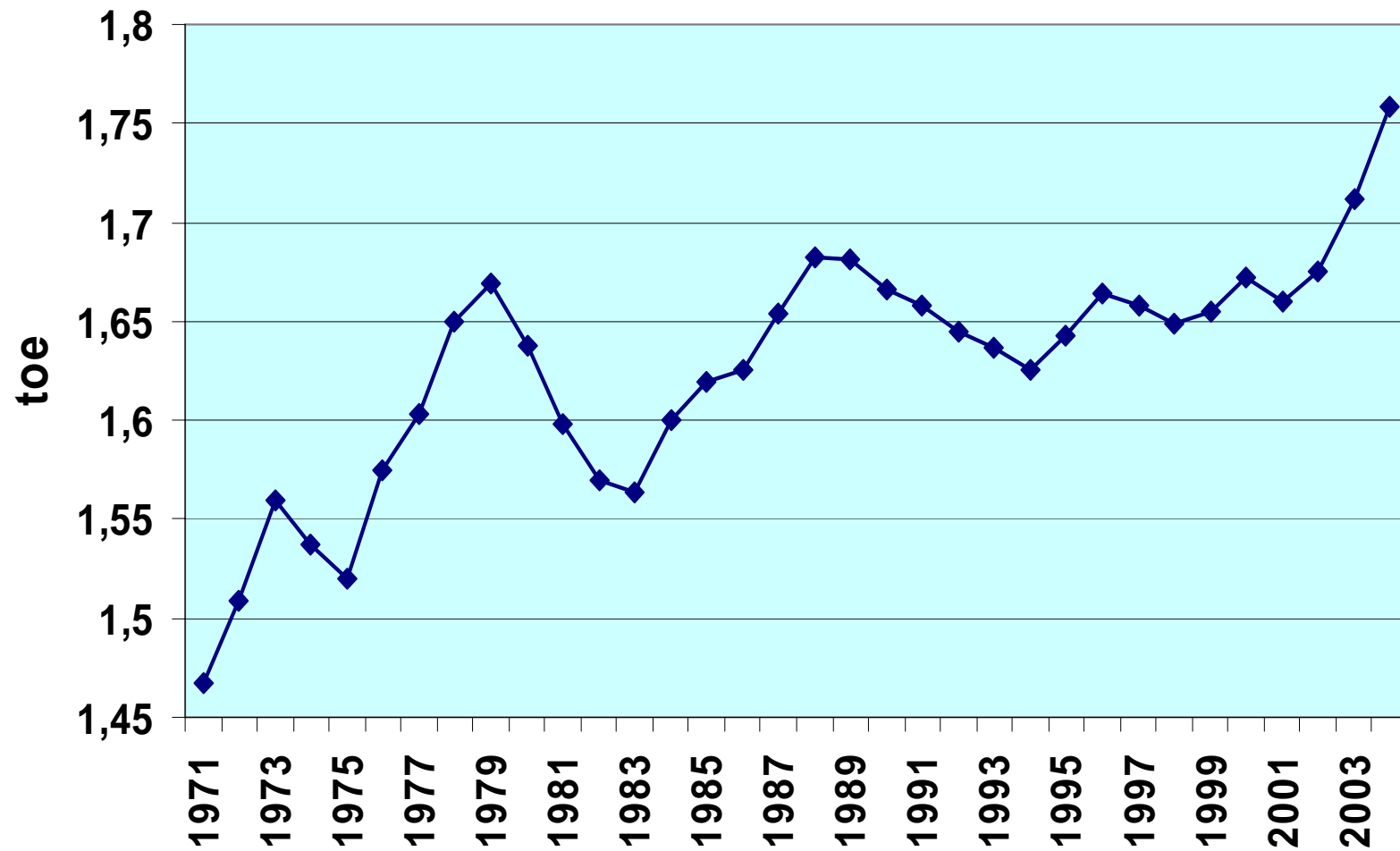
**World Final Energy Consumption
by Sector**



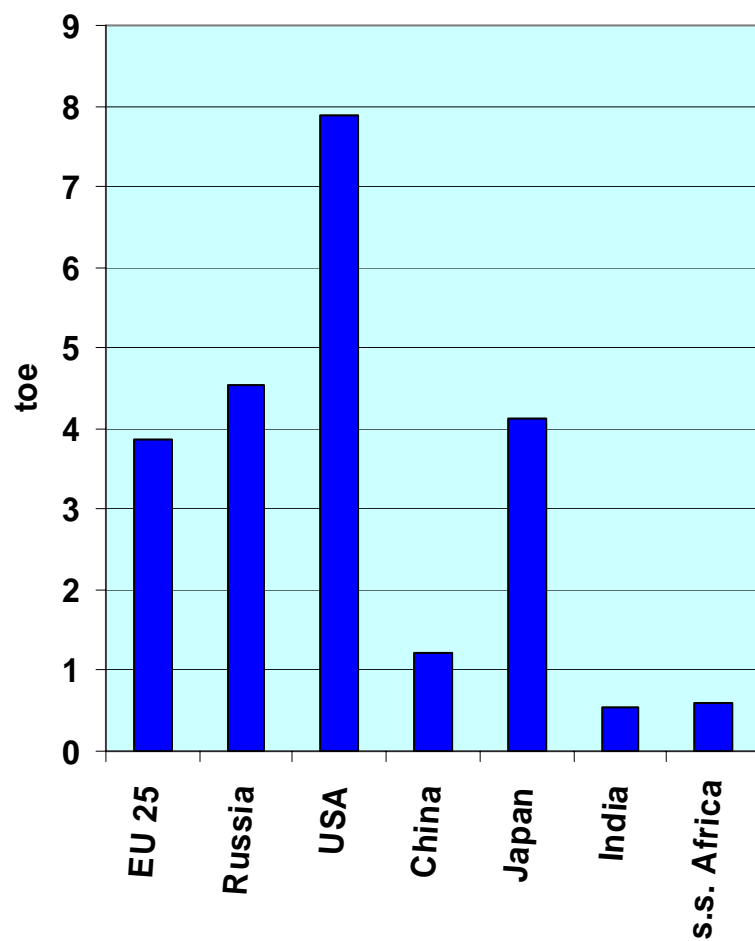
**World Final Energy Consumption
by Product**



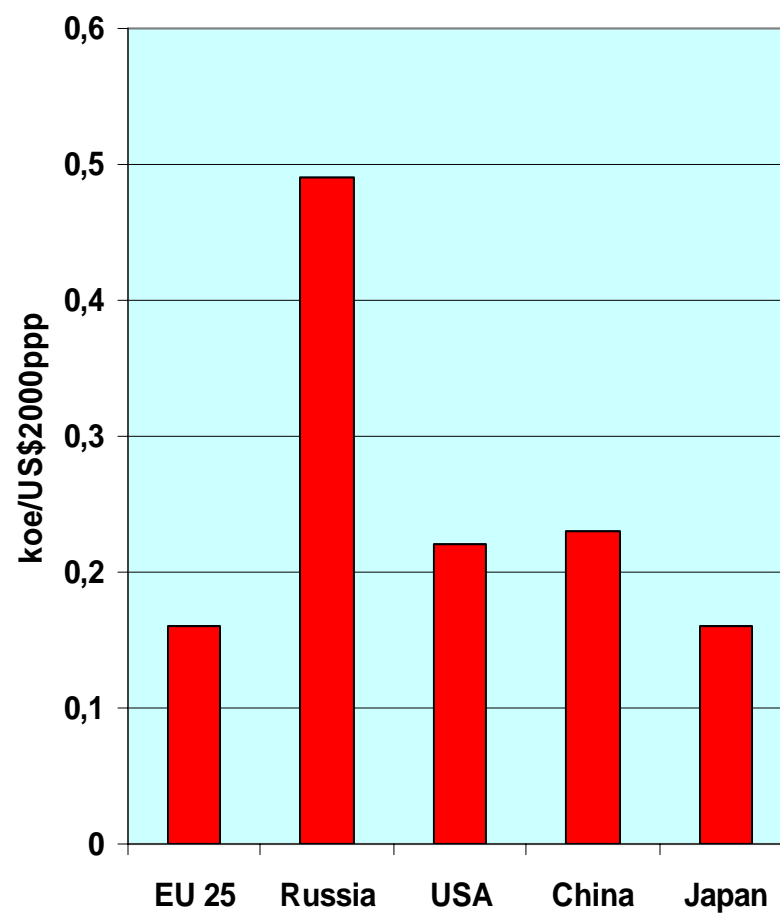
World Primary Energy Consumption per Capita



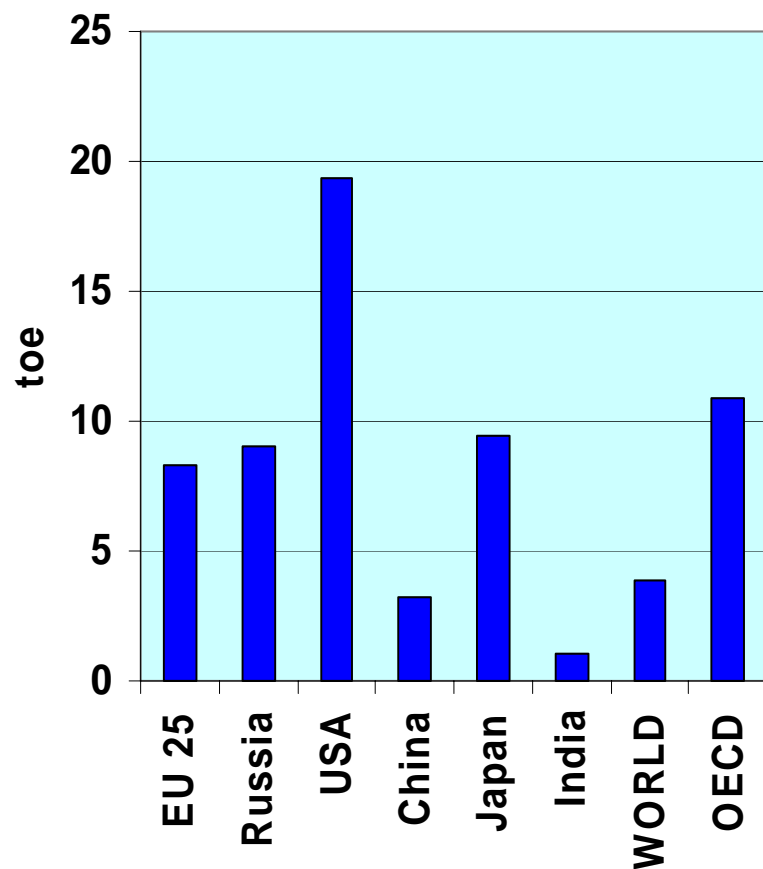
Primary energy per capita in 2004



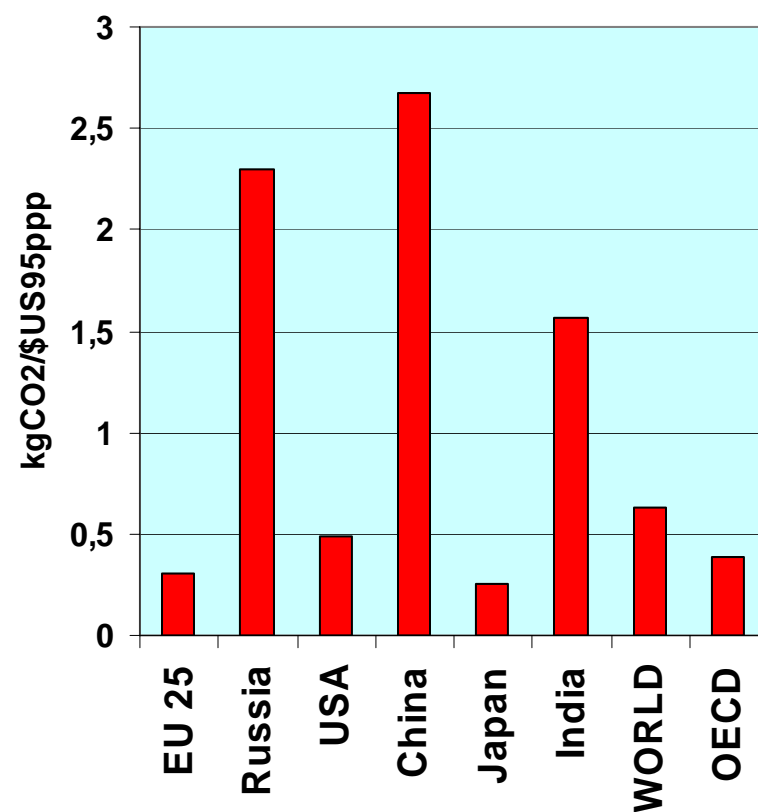
Primary Energy Intensities (2004)



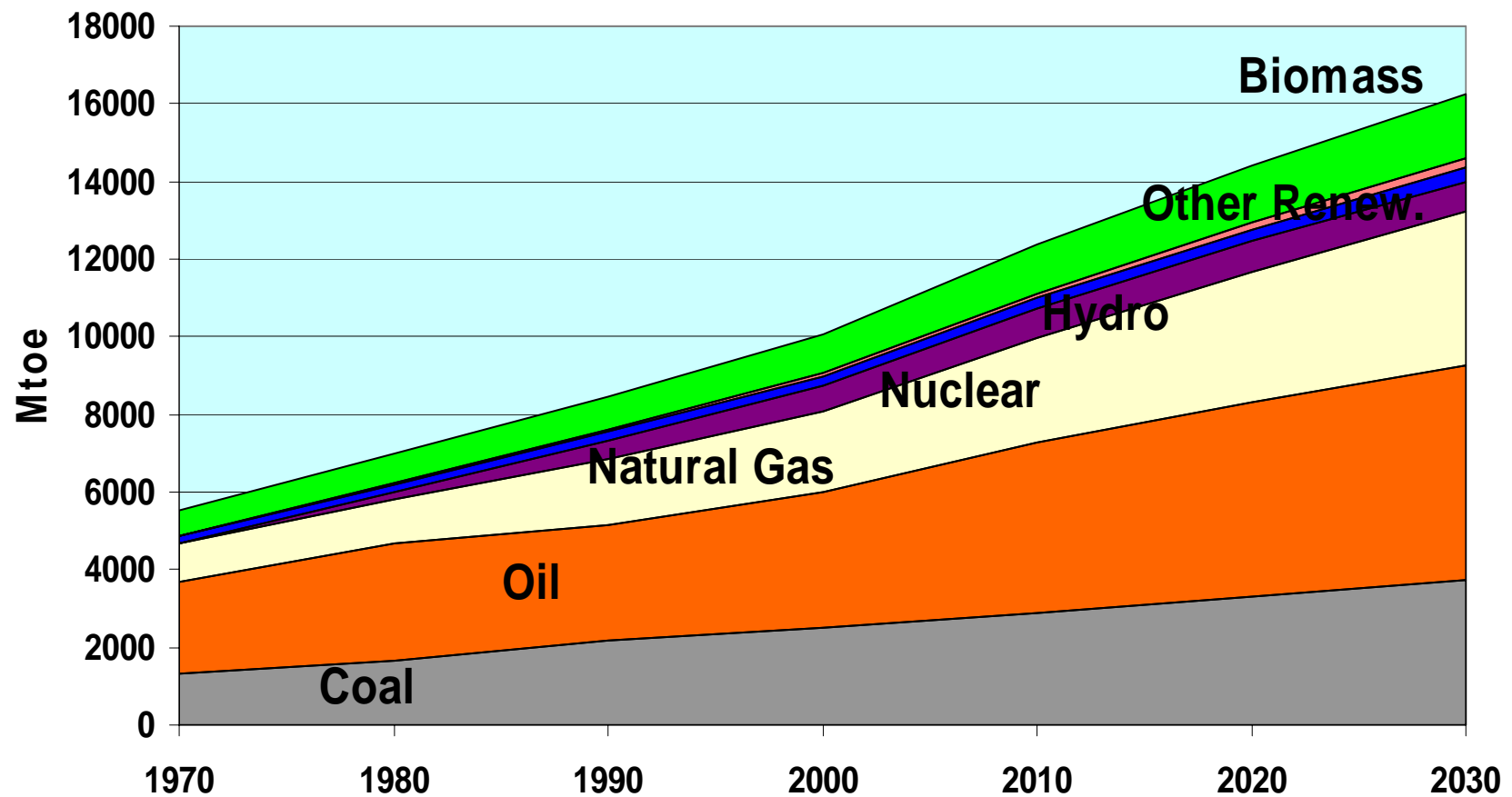
CO2 emission per capita (2004)



CO2 emission per GDPppp (2004)



World Energy Outlook (IEA - 2004 - BAU scenario)



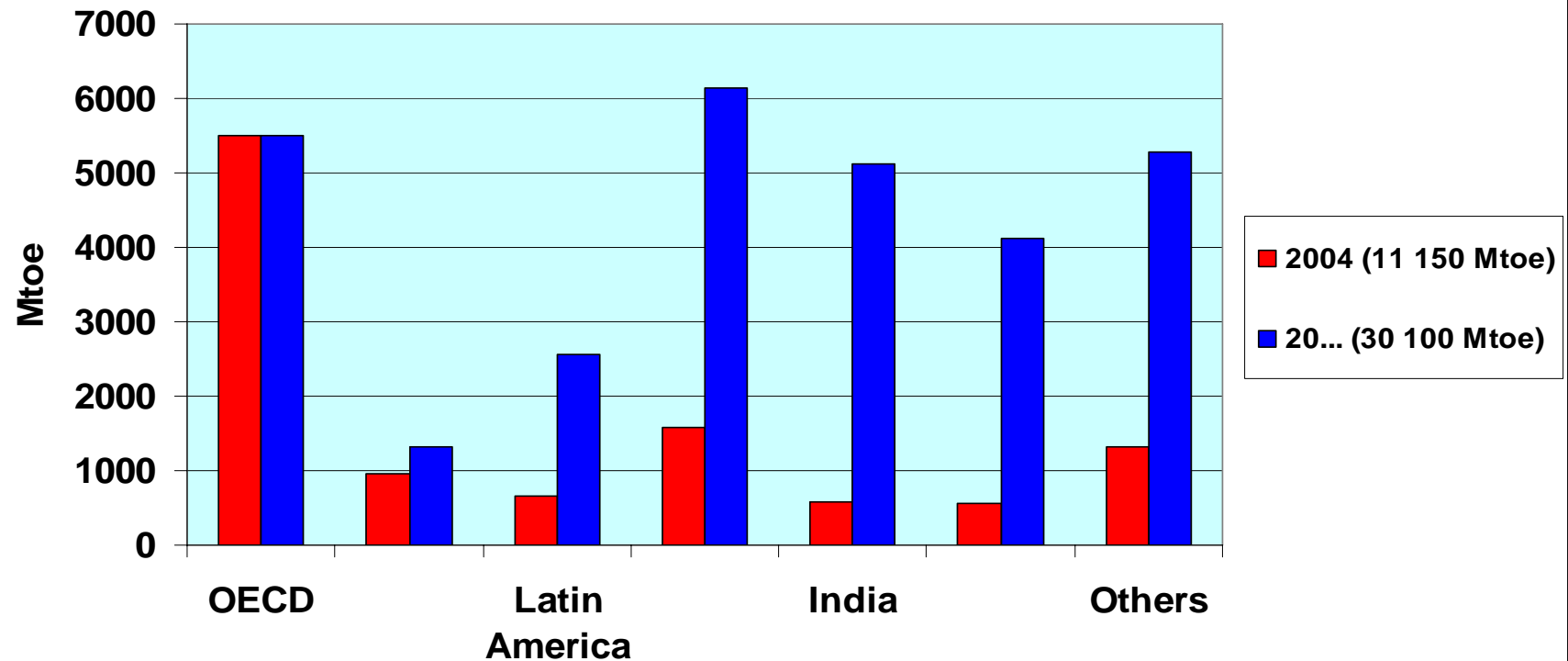
This is not sustainable

« With current policies, our energy future is insecure and environmentally unstable »

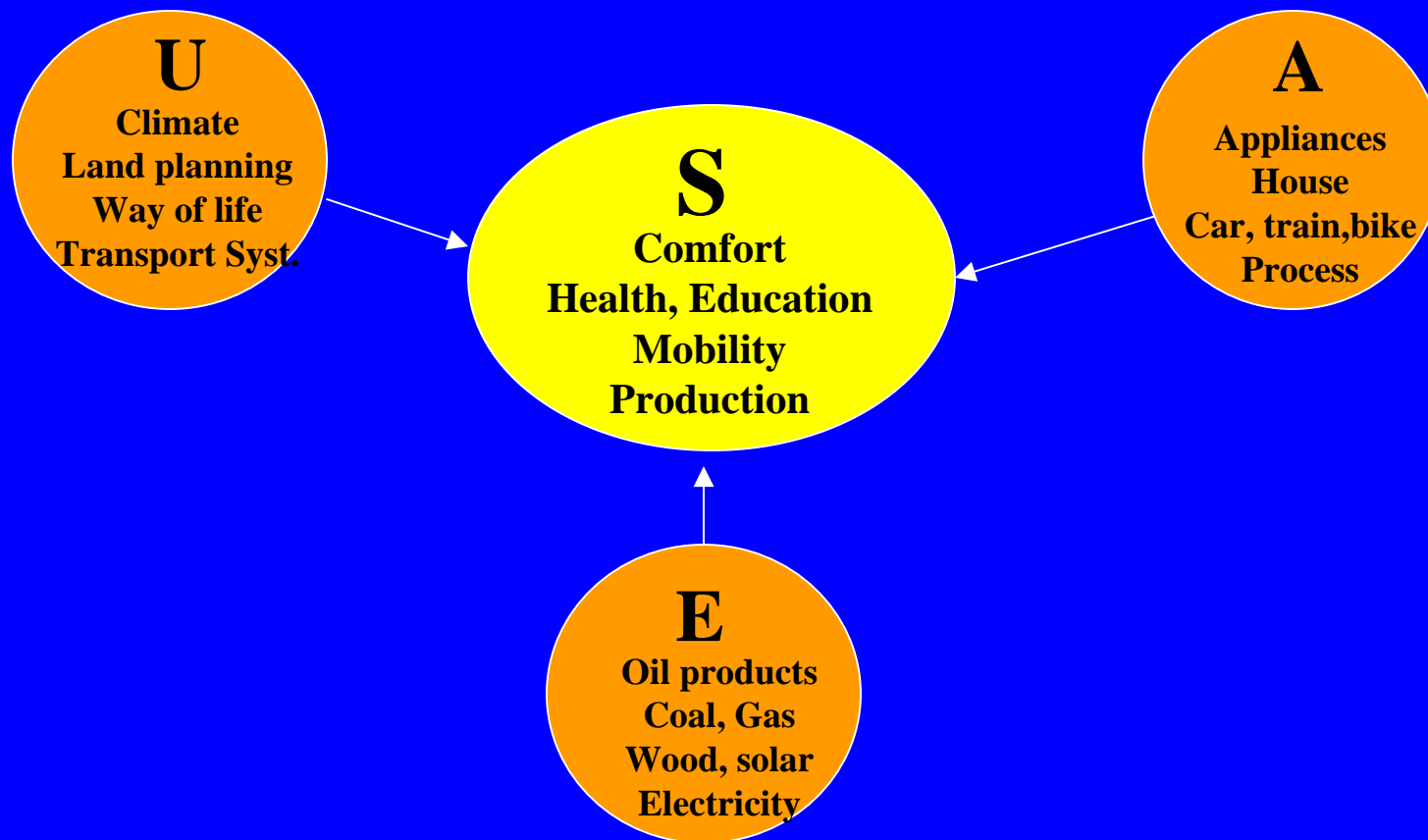
IEA Executive Director (Nairobi, November 14, 2006)

What if?

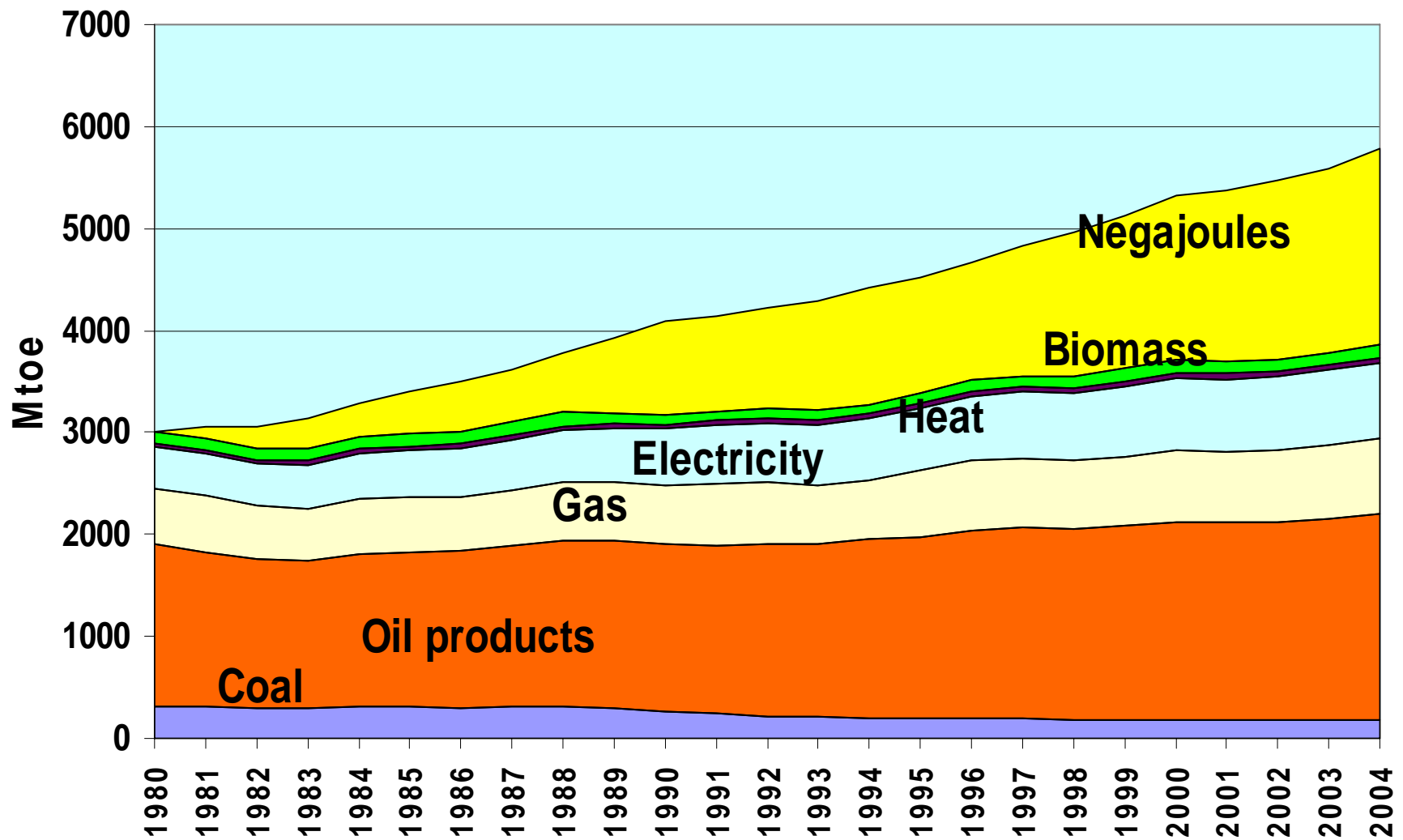
World Primary Energy Consumption in 20...



New Energy Paradigm

$$S = U * A * E$$


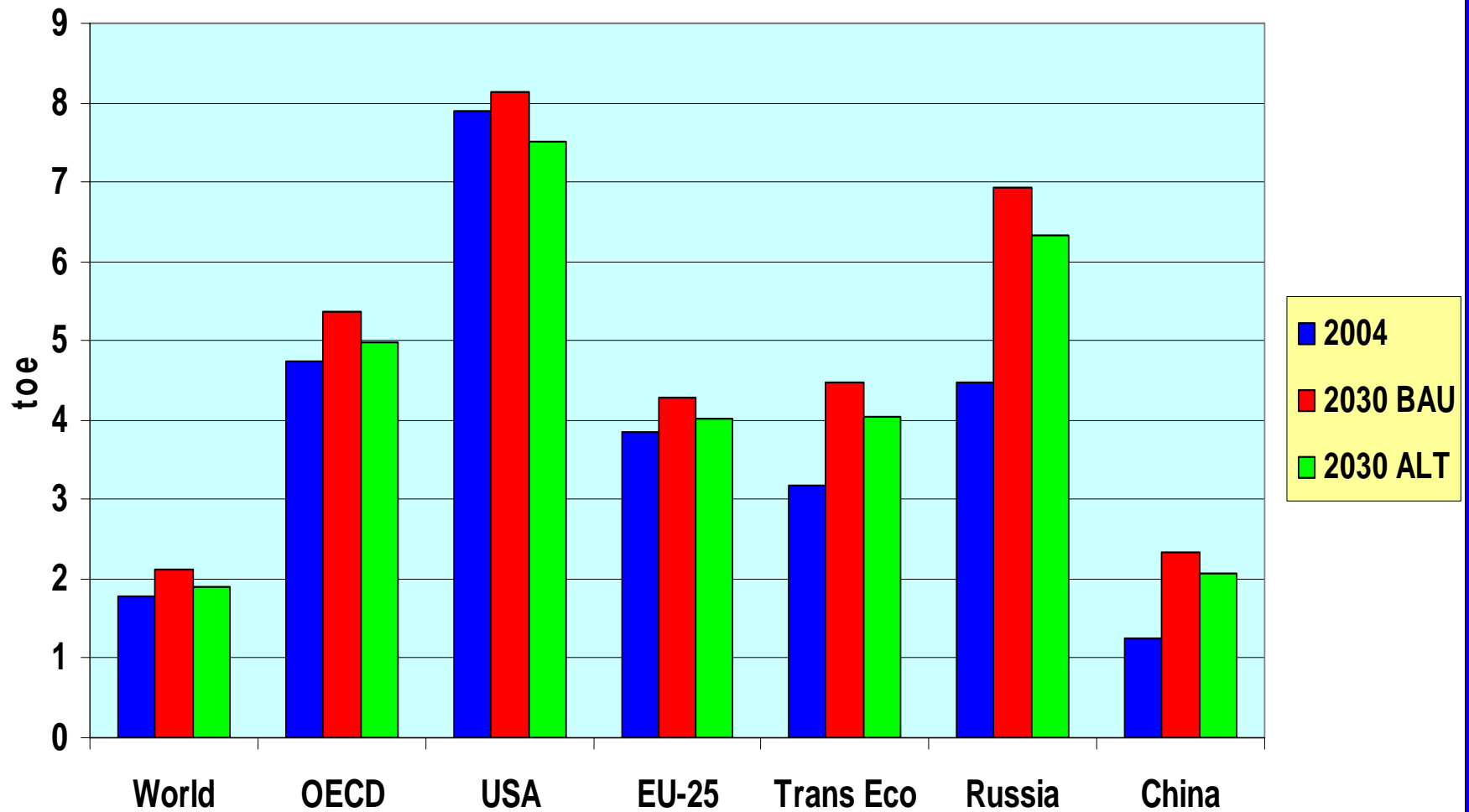
OECD Final Energy : Negajoules



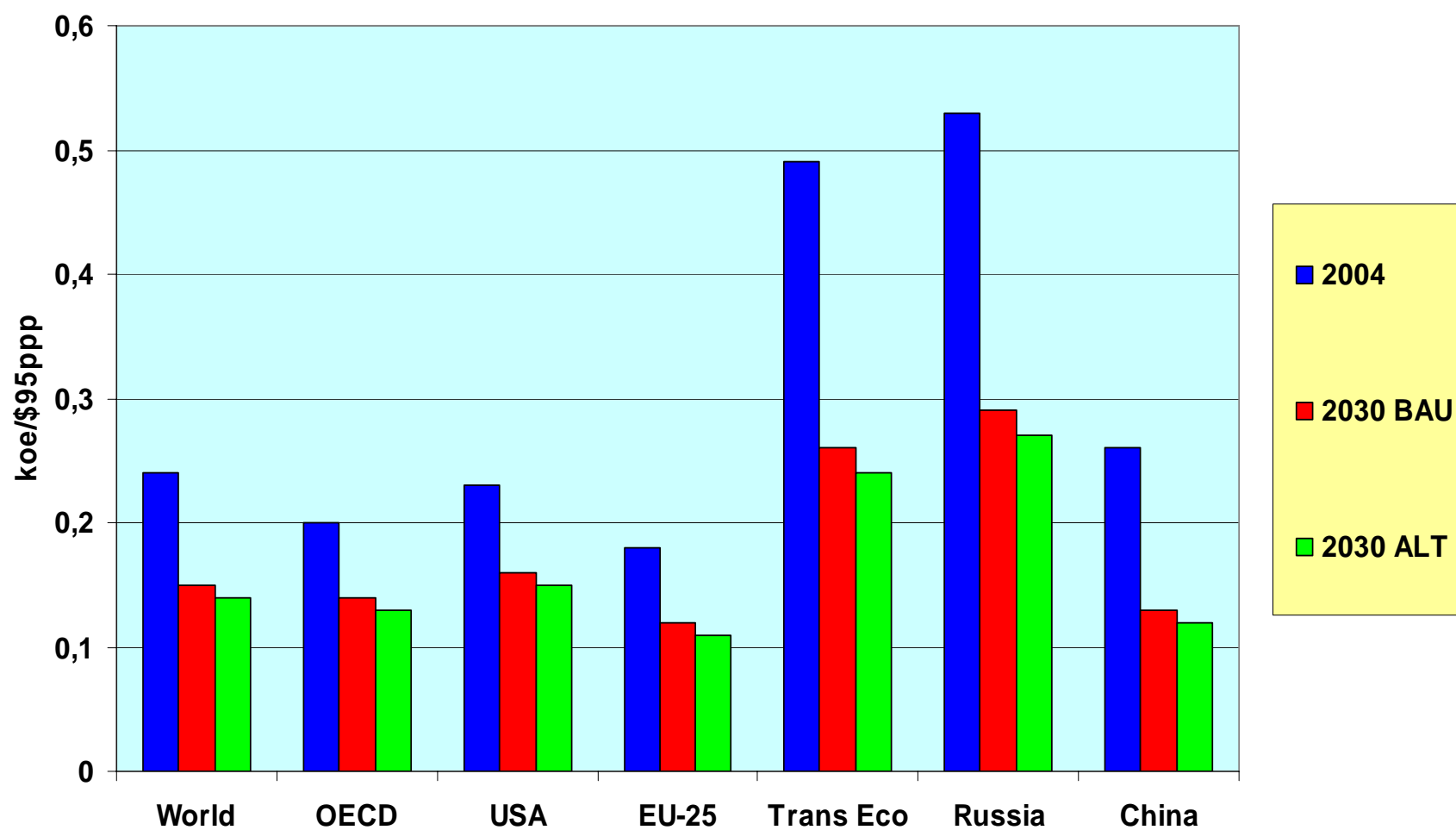
**Potentials of energy savings at year 2020
in the Green Paper on Energy Efficiency (June 2005)
For the EU (25)**

Potential savings in Mtoe	2020 Rigorous implementation of adopted measures	2020+ Implementation of additional measures
Buildings heating/cooling, electric appliances	56 (41) (15)	105 (70) (35)
Industry	16	30
Transport	45	90
Co-generation	40	60
Other energy transformation, etc.	33	75
TOTAL energy savings	190	360

IEA-WEO 2006 : Primary energy consumption per capita



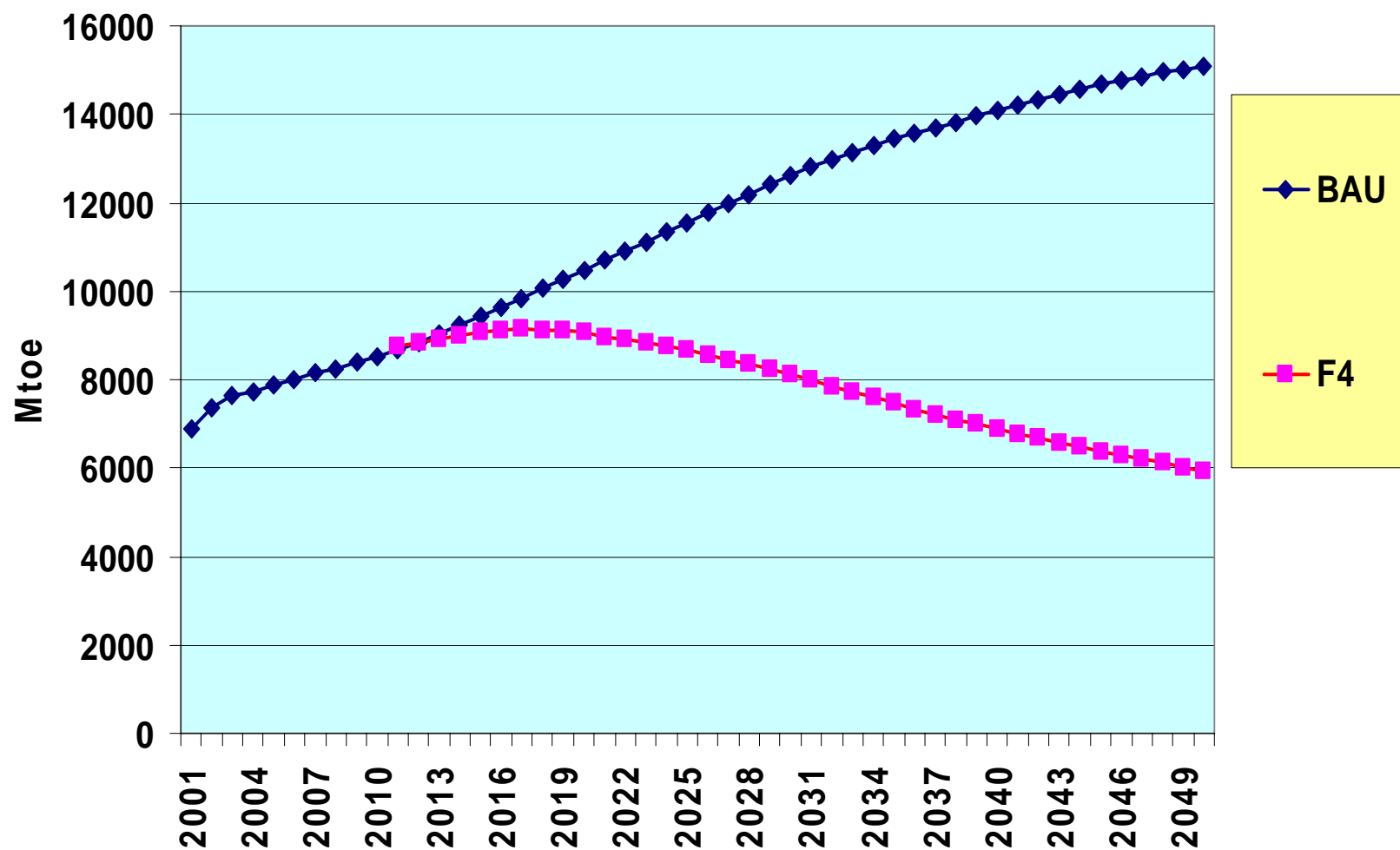
IEA-WEO 2006 : Primary energy intensities



Energy Efficiency Scenarios for Transition Economies & Russia

- Energy Intensities Convergence
- South East & Central Europe, 2030: EU 15, 2015
- CIS & Russia, 2030: OECD & USA, 2015
- EE potential at 2030: about 35%
- Russia: 300 Mtoe in 2030

Sustainable World Final Energy Consumption



Messages and Lessons Learnt

- A common strategy: non sustainability, convergence, win-win actions
- Accumulated experience and good practice
- The human factor
- Appropriate tools and financial mechanisms