

Workshop on Demand Side Management in Energy Efficiency
(INFRA 25625) Ankara, Turkey, 22/11/2007 - 23/11/2007



**Demand Side Management
policy initiatives**

The European Community, together with its Member States, is working intensively to improve energy efficiency in all sectors

BRUSSELS EUROPEAN COUNCIL

8/9 MARCH 2007

European Council calls on Member States and EU institutions to pursue actions such as to:

- strengthen the internal market and competitiveness,
- create better framework conditions for innovation,
- develop a sustainable integrated European climate and energy policy**

Year 2020 goals – 3 × 20%

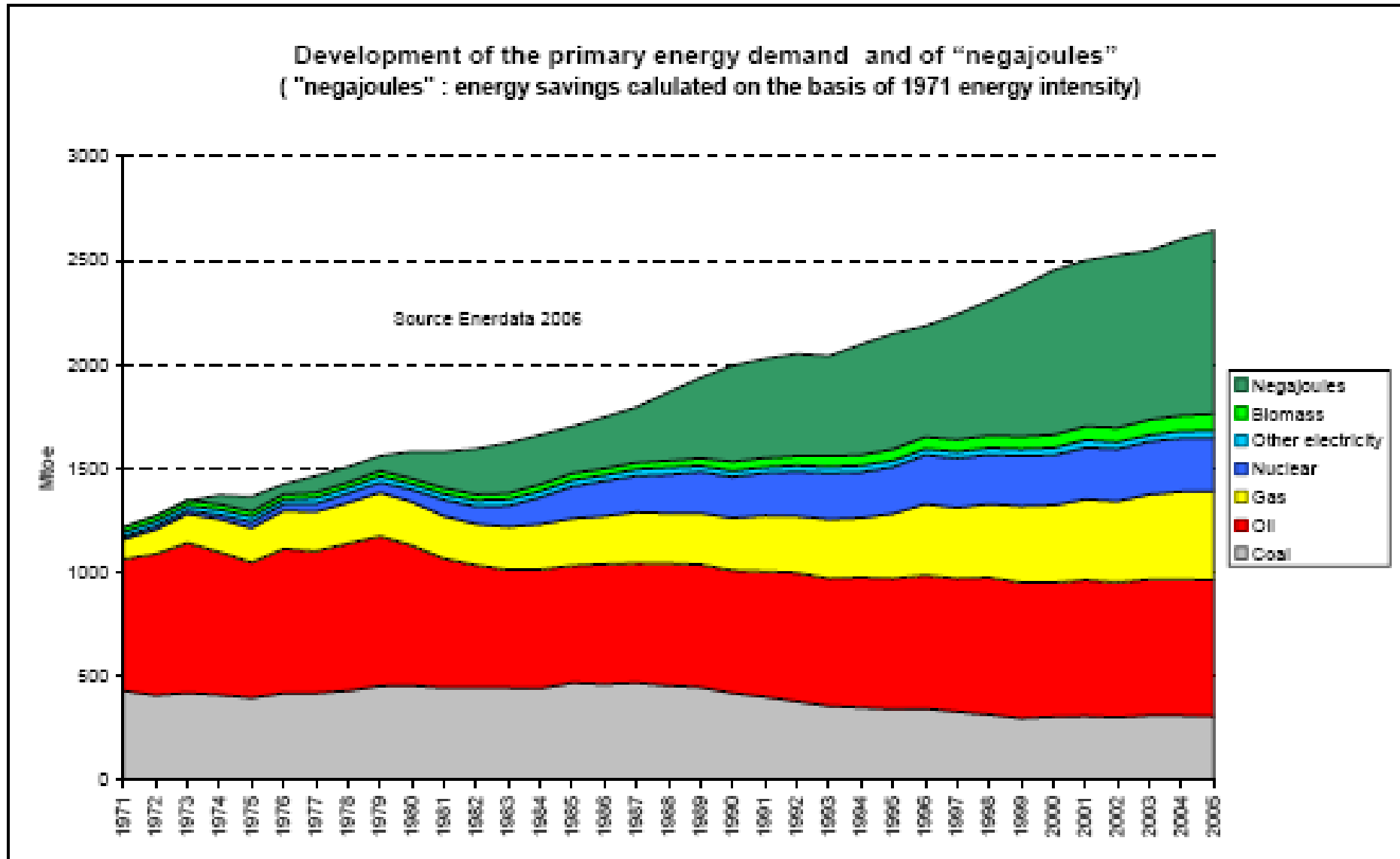
- **Increase energy efficiency in the EU so as to achieve the objective of saving 20% of the EU's energy consumption compared to projections for 2020**
- Binding target of a 20% share of renewable energies in overall EU energy consumption by 2020
- EU makes a firm independent commitment to achieve at least a 20% reduction of greenhouse gas emissions by 2020 compared to 1990.

AN INTEGRATED CLIMATE AND ENERGY POLICY

Energy production and use are the main sources for greenhouse gases emissions, an integrated approach to climate and energy policy is needed to realise this objective.

The challenges of climate change need to be tackled effectively and urgently.

Figure shows how energy efficiency improvements have reduced EU energy intensity during the past years. It demonstrates that by 2005, “negajoules” (or avoided energy consumption through savings) become the single most important energy resource.

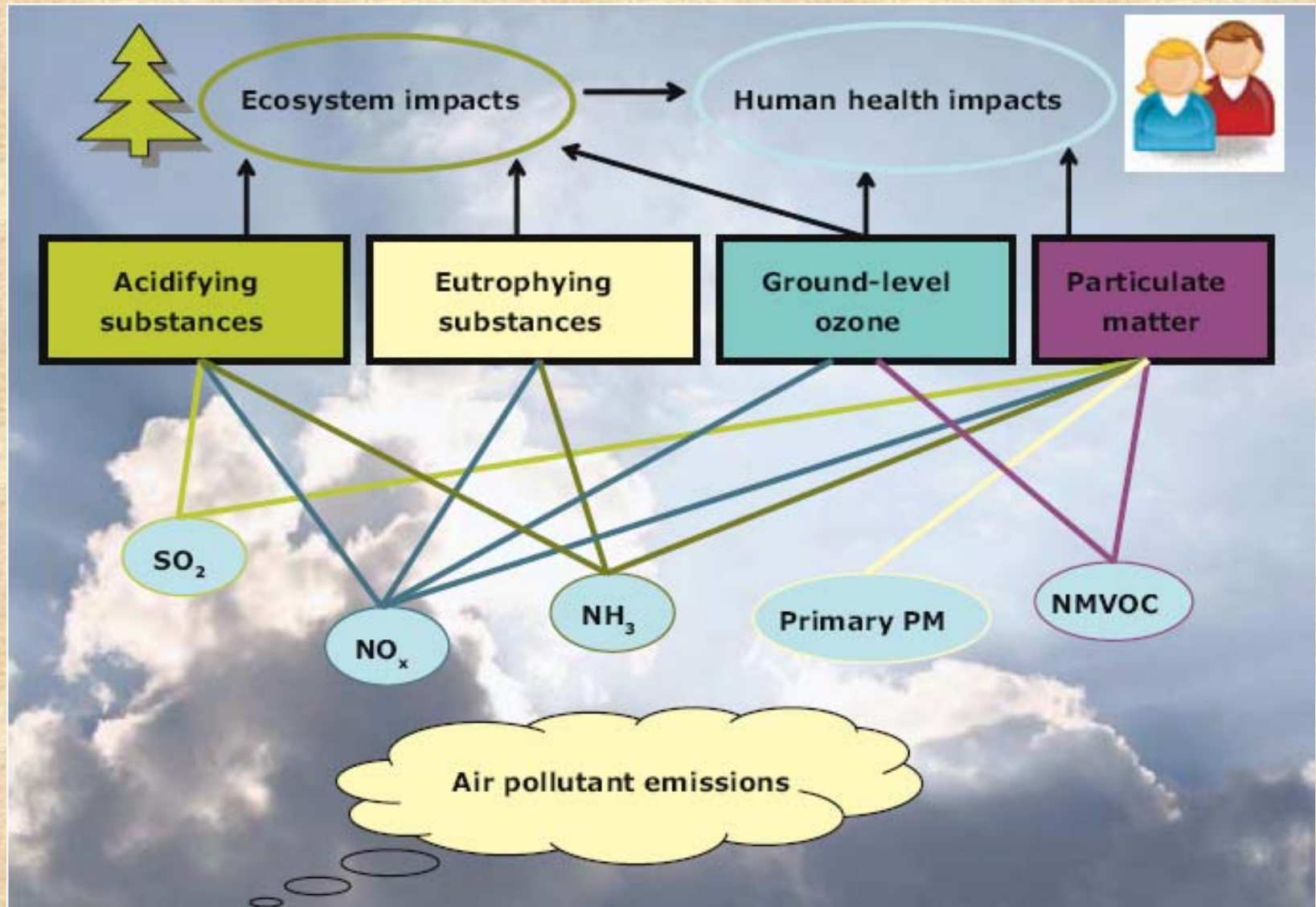


Energy - Environment

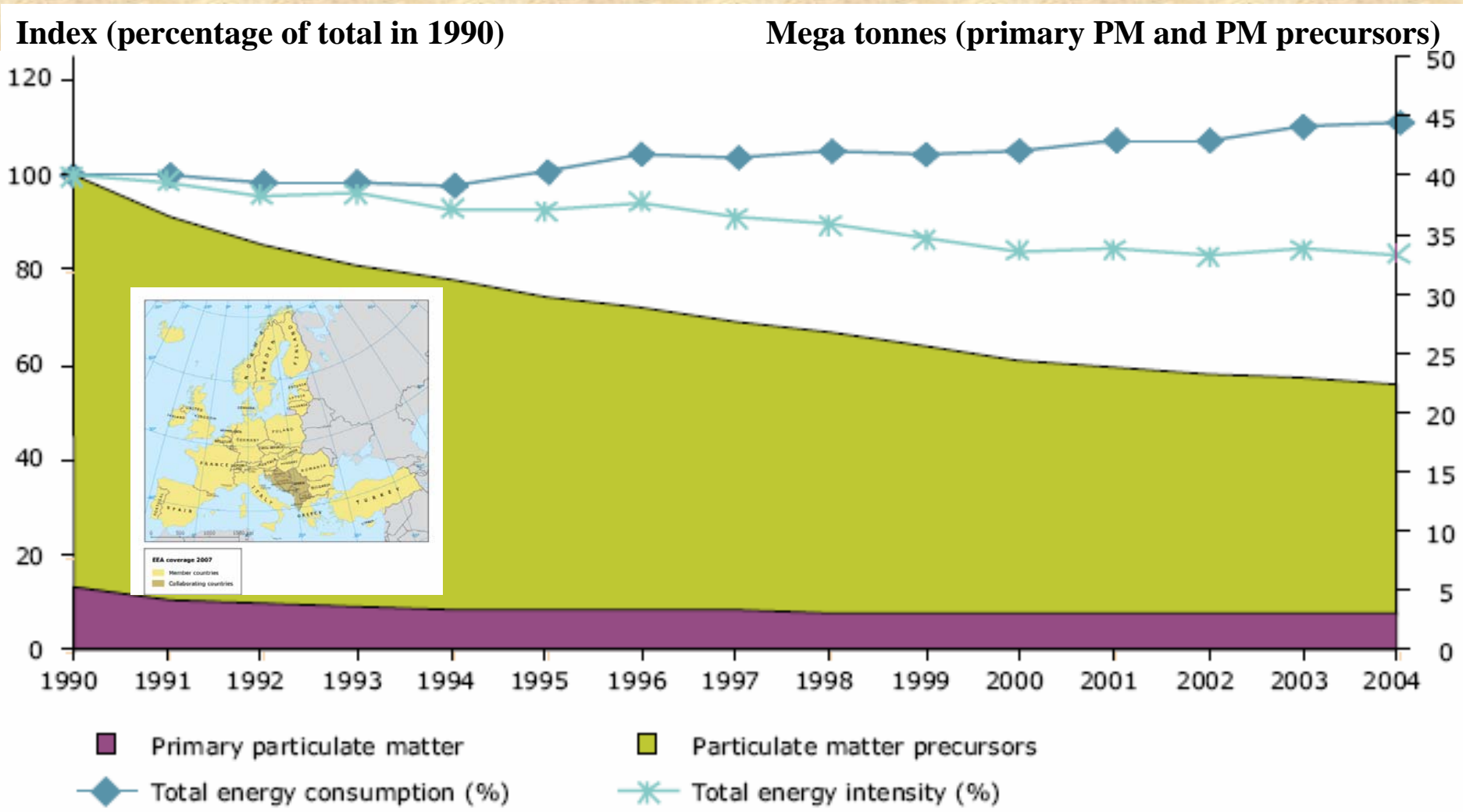
Electricity and heat production from public thermal power plants is a significant source of both air pollutants and greenhouse gas emission.

On a global basis, electricity production is estimated to contribute about 25% of the human-induced increase in greenhouse gas emissions.

Major air pollutants in Europe clustered according to human health and ecosystem impacts

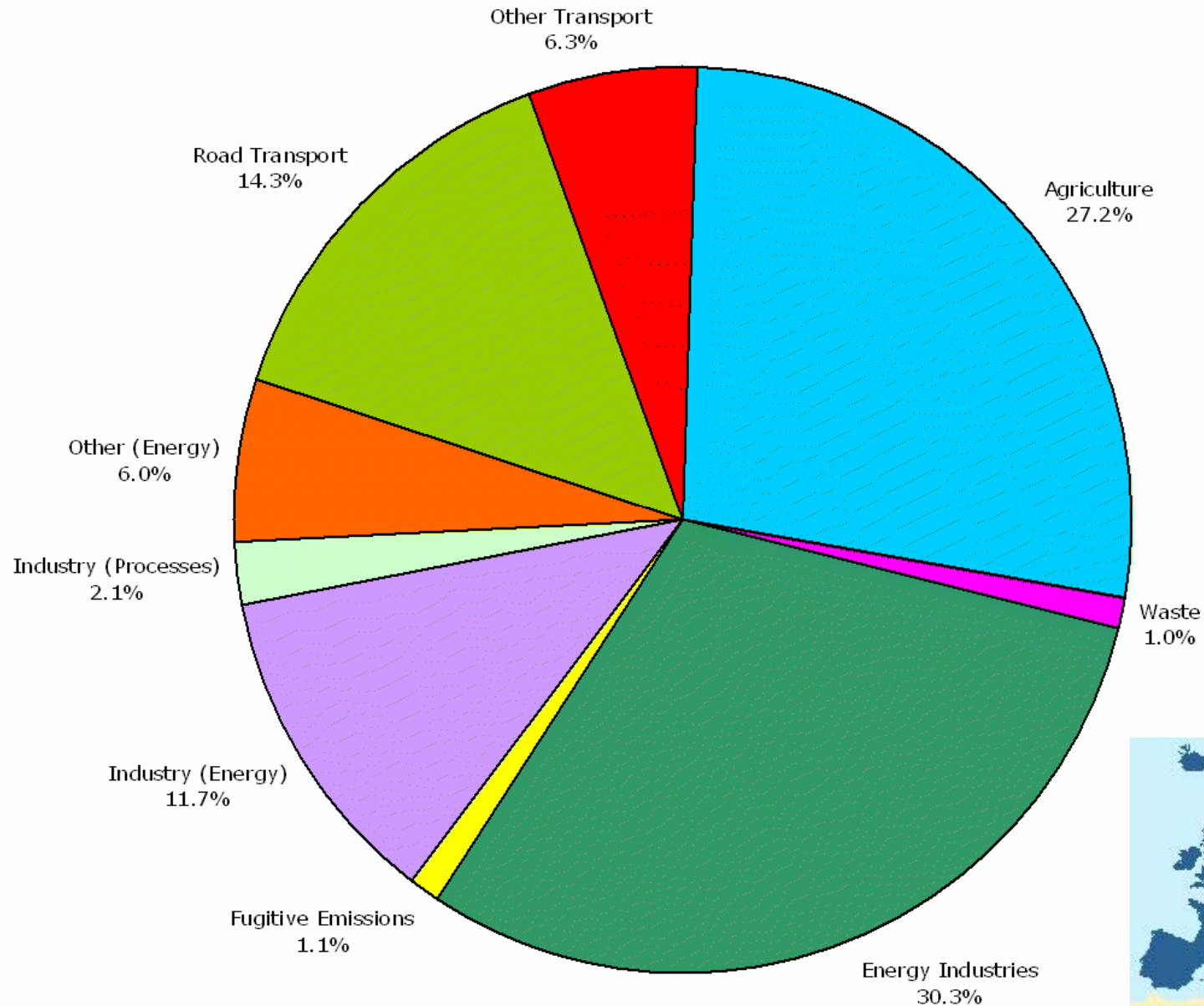


EEA-32 primary and secondary particulate matter emissions (PM10), 1990–2004

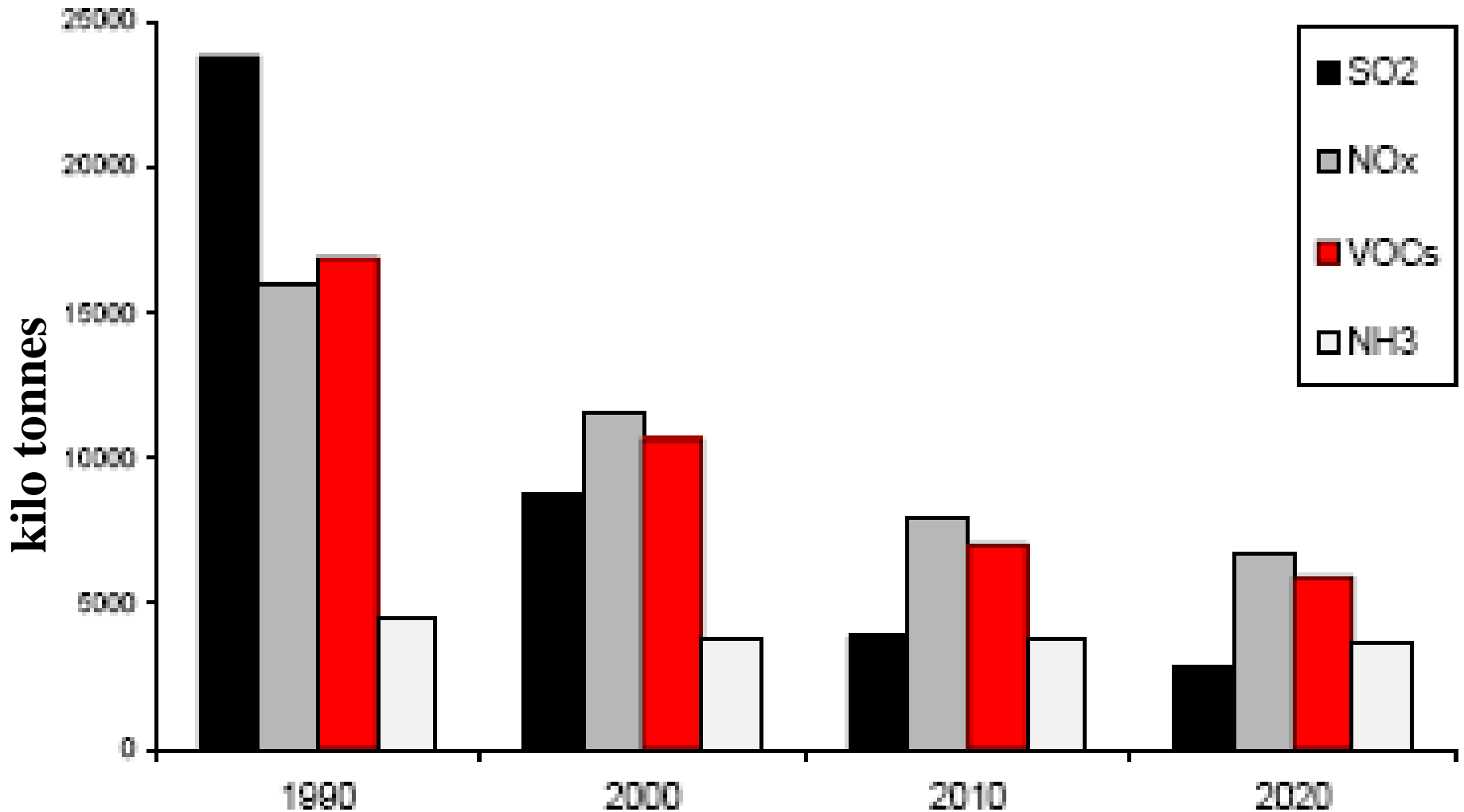


Total energy consumption is what Eurostat refers to as Gross Inland Energy Consumption (in million tonnes oil equivalents). The gross domestic product (GDP) in the EU-25 Member States grew at an average annual rate of 2.1 % during 1990–2004

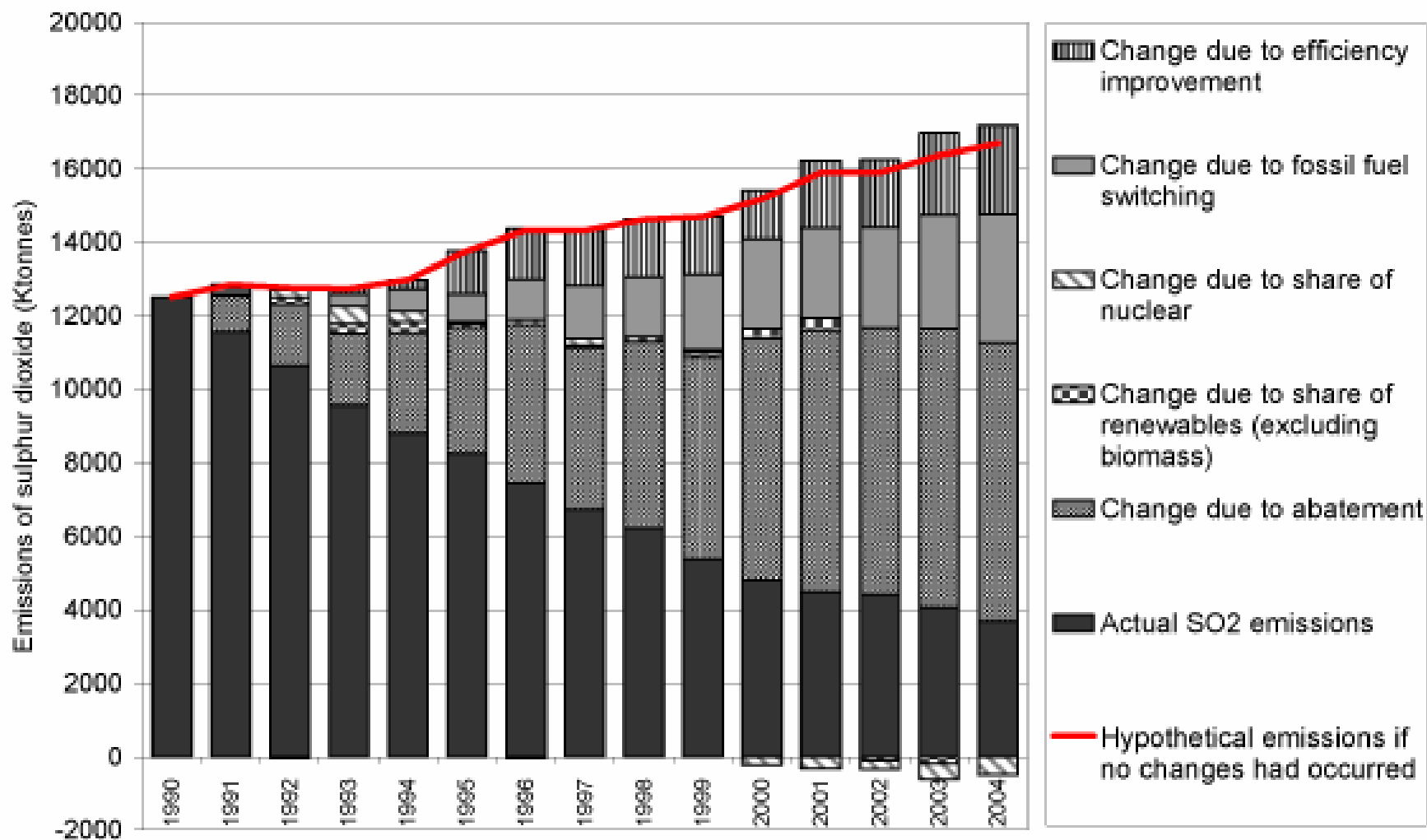
Sector split of emissions of acidifying pollutants



The national emission ceilings (*NECD*) Directive 2001/81/EC

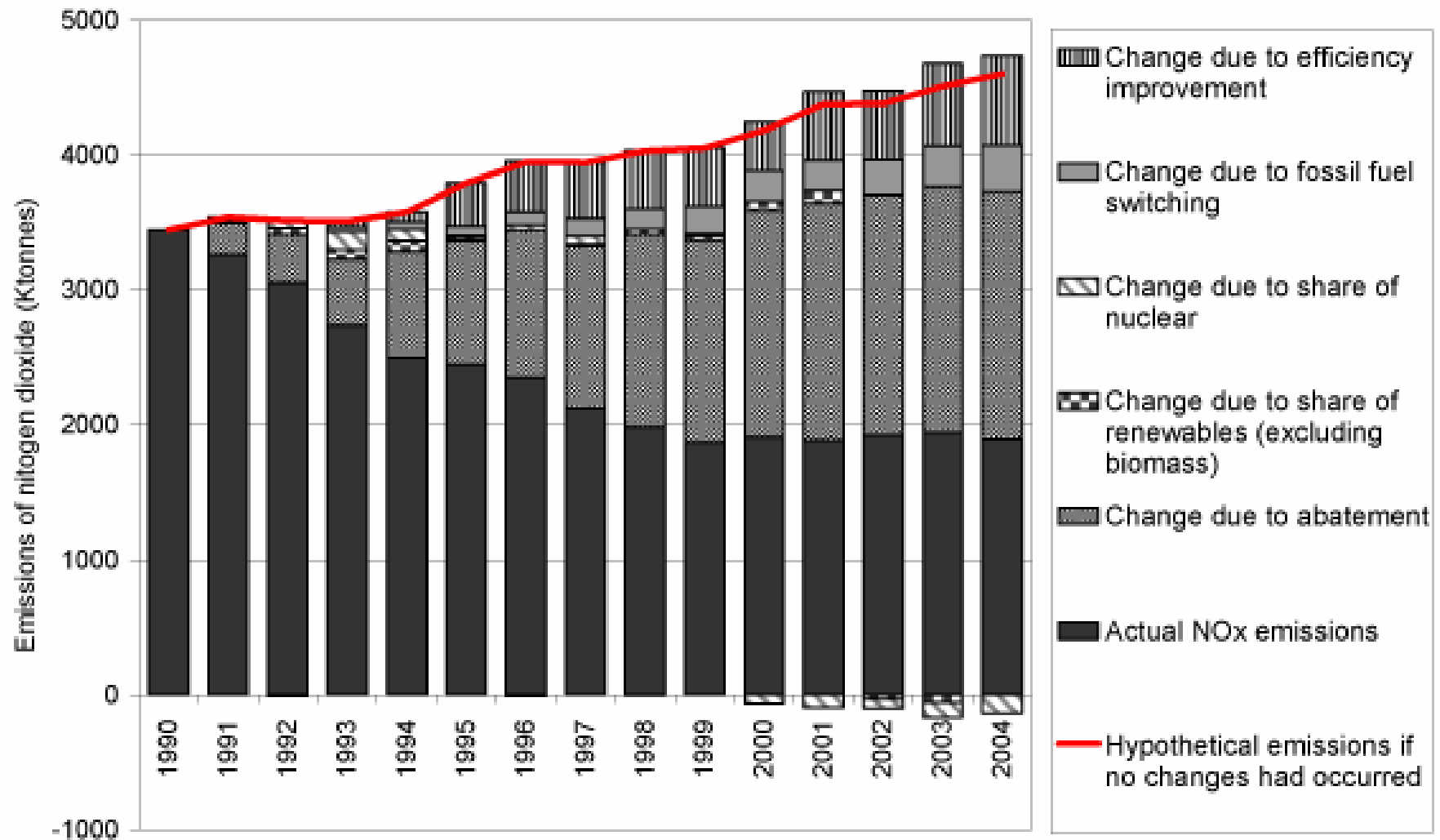


Energy efficiency influence - SO₂ emission



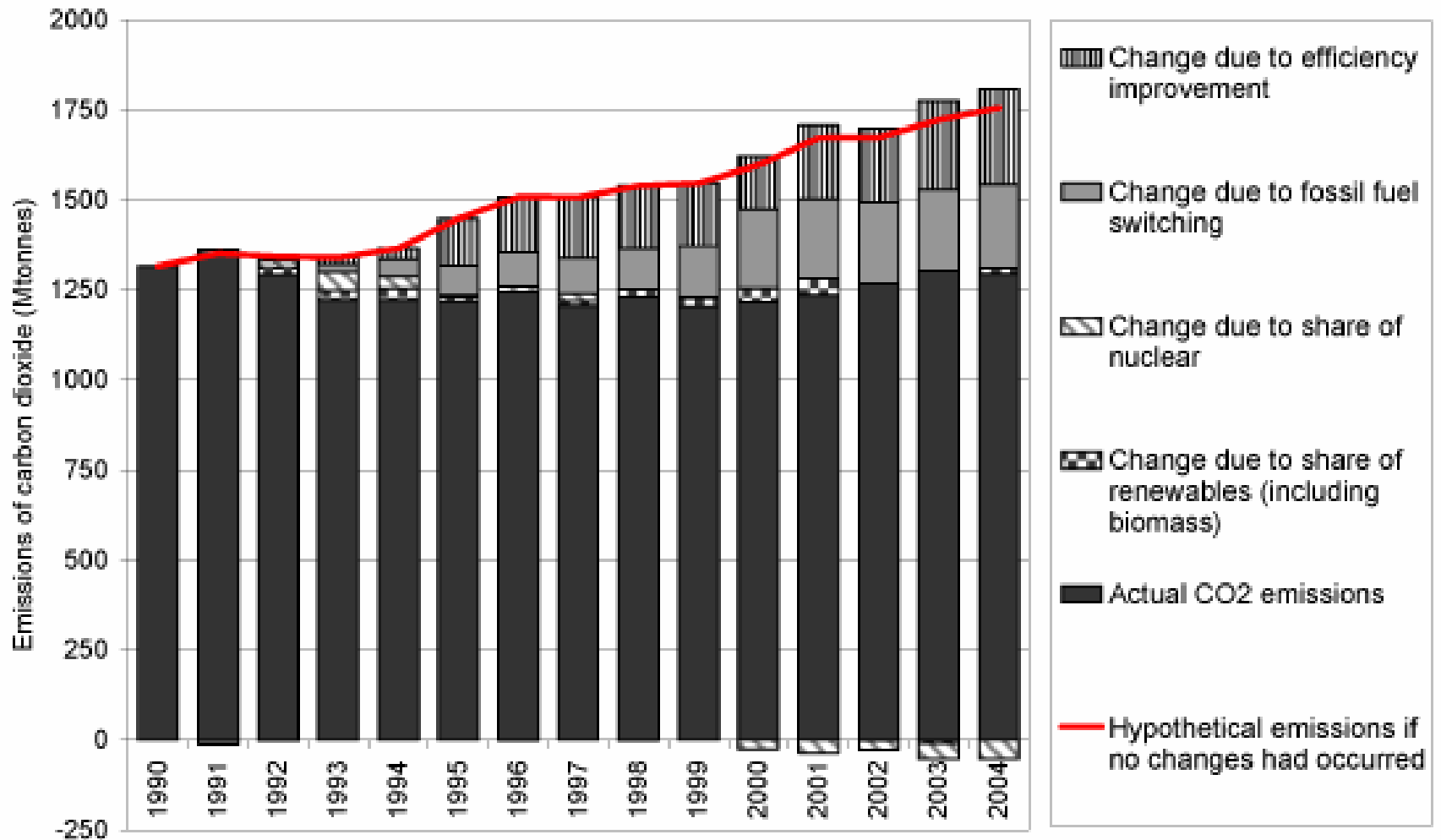
Source: European Environment Agency/European Topic Centre on Air and Climate Change, Eurostat

Energy efficiency influence - NOx emission



Source: European Environment Agency/European Topic Centre on Air and Climate Change, Eurostat

Energy efficiency influence - CO₂ emission



Source: European Environment Agency/European Topic Centre on Air and Climate Change, Eurostat

DEMAND SIDE MANAGEMENT DSM

Implementation of policies or measures which serve to control or influence the demand.

DSM measures are often more cost-effective, and may also have lower environmental impacts, than development additional network elements

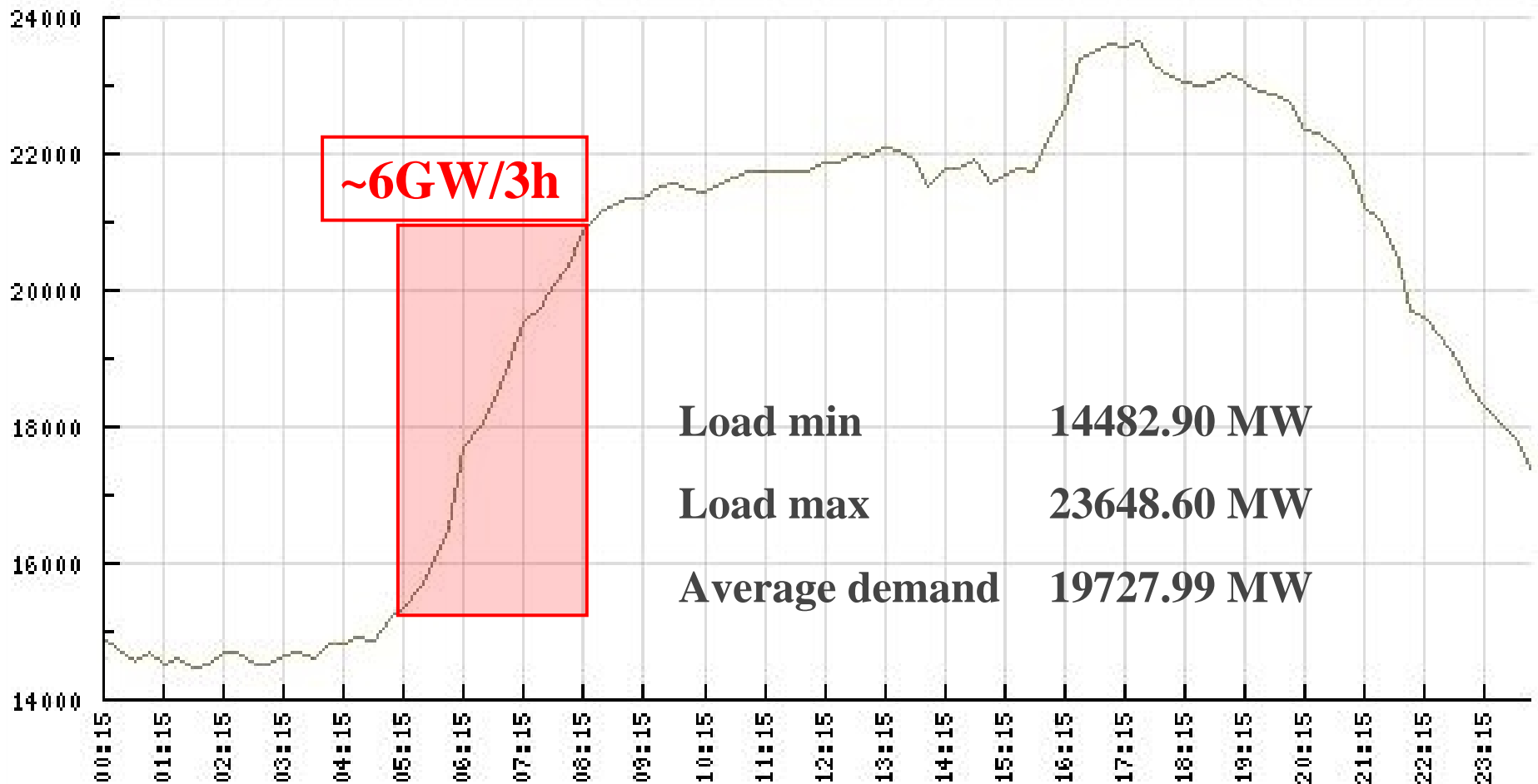
DSM entails actions, that influence the quantity or patterns of use of energy consumed by end users. It involves actions targeting reduction of **peak demand during periods when energy-supply systems are constrained.**

Peak demand management does not necessarily decrease total energy consumption. However the need for investments in networks and/or power plants may become lower.

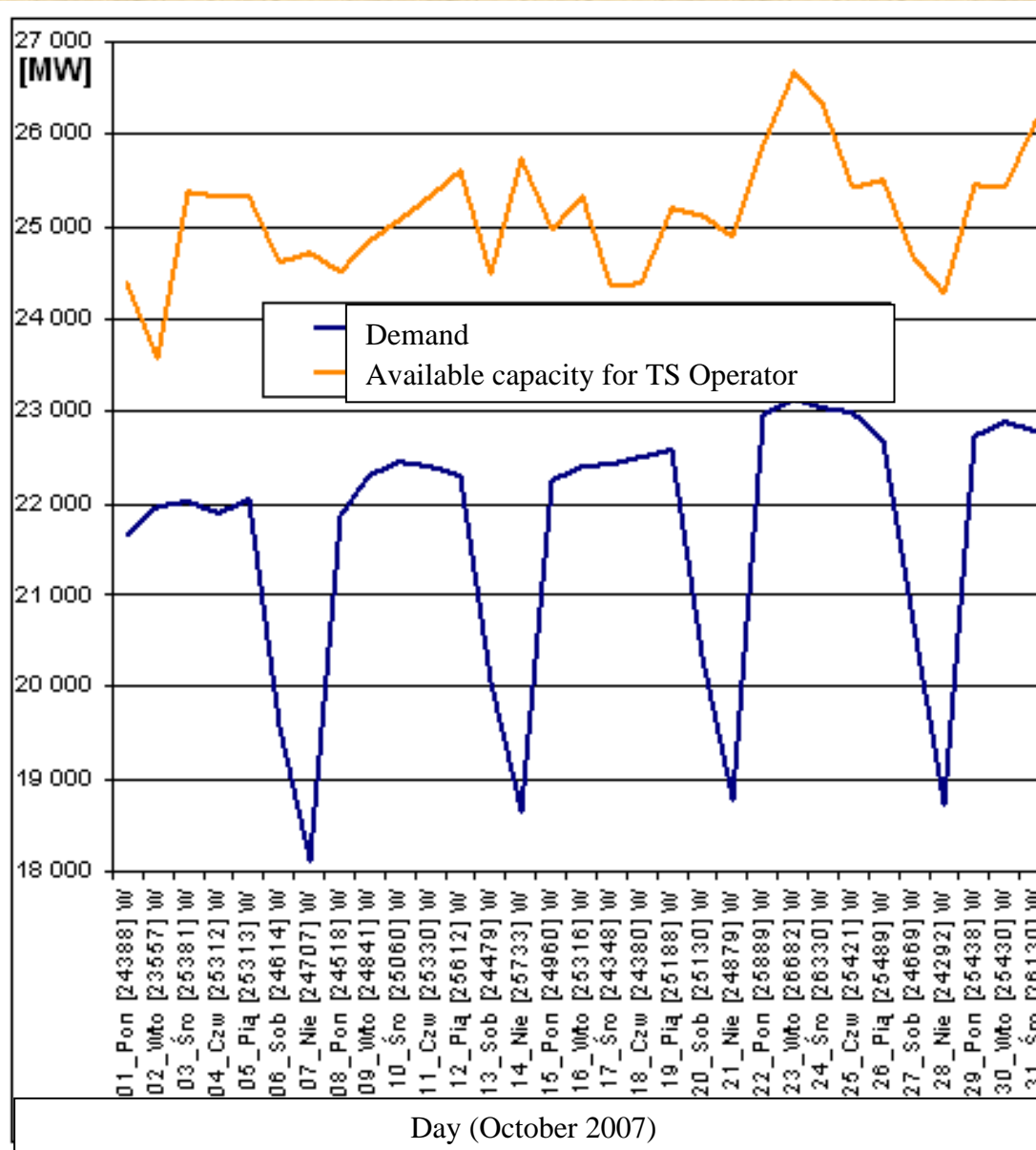
Daily Load of Power System

2007-11-12

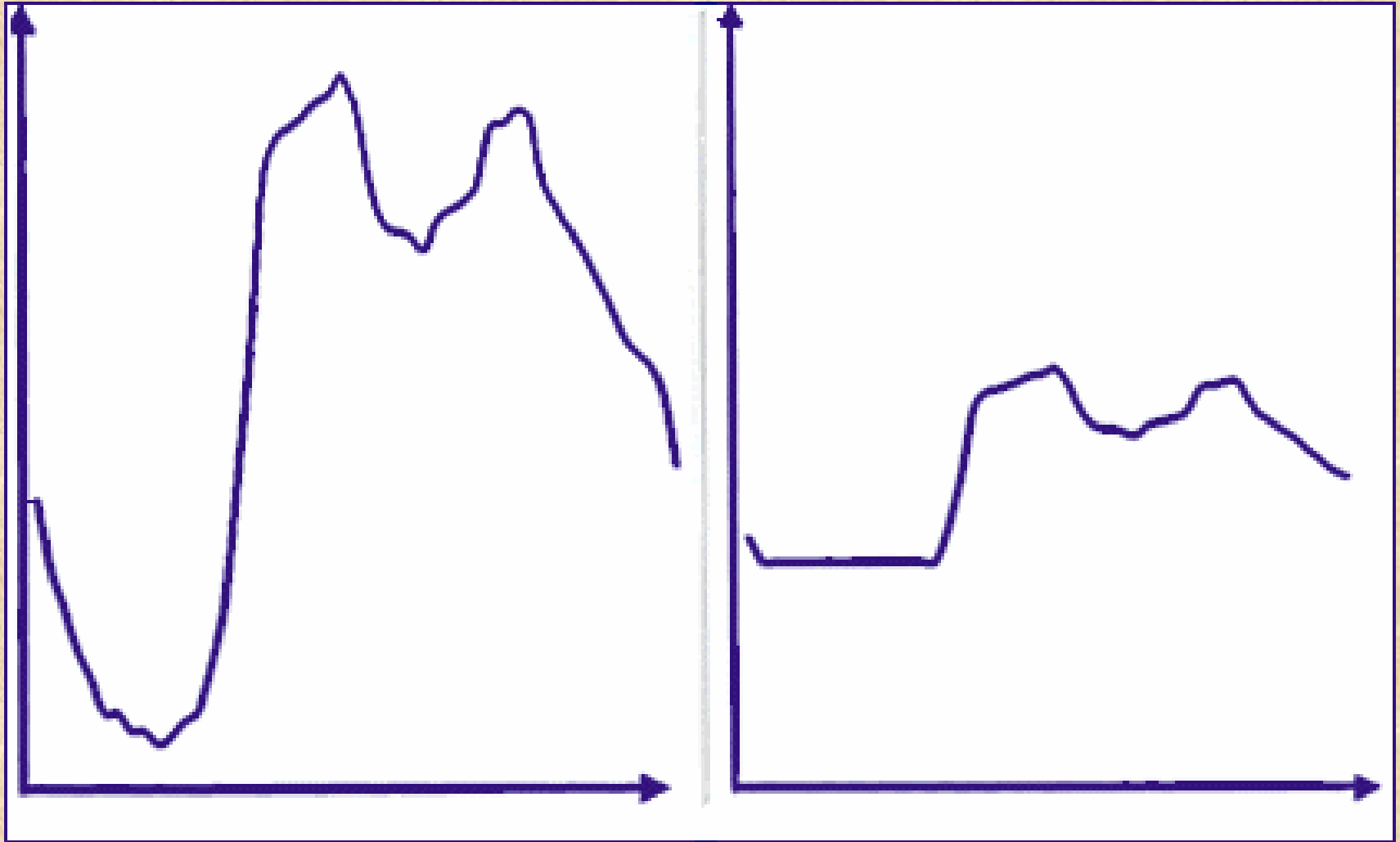
Load of Polish Power System (temporary values 15 min. [MW])



Use of available capacity

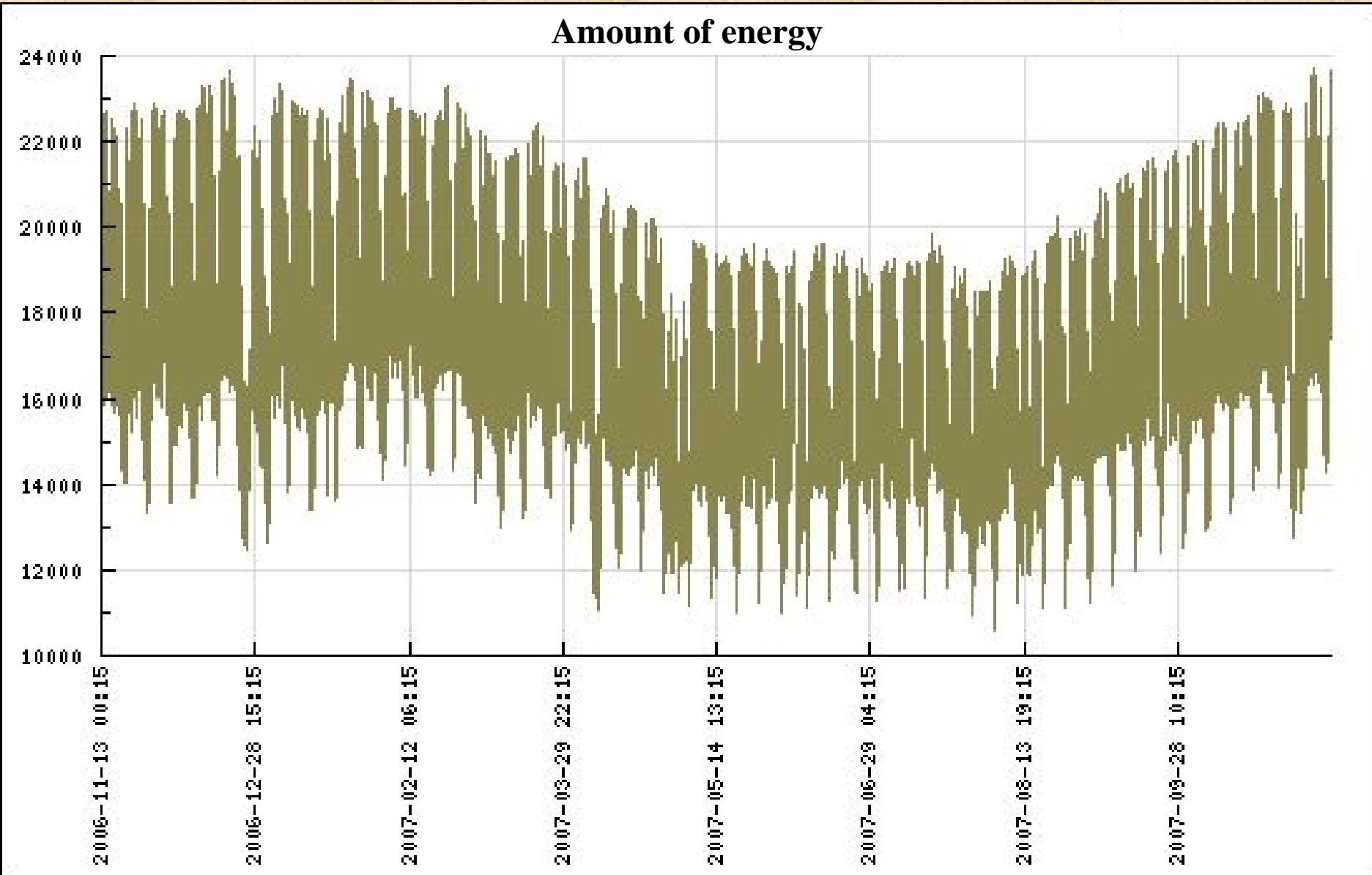


Example of the impact of a DSM action on a load curve



DSM for electric water heating and room air conditioning - modelling

Load of Polish Power System from day 2006-11-13 to day 2007-11-12





Intelligent Energy



Europe



The Intelligent Energy - Europe programme

HKA1: Sustainable Energy Communities

Local community planning for efficient use of RES, **demand side management** and intelligent transport is one of the priority areas

The IEA DSM Programme promotes energy efficiency and demand-side management for global sustainable development and for business opportunities.

Specific objectives are:

- Information exchange on technologies and programmes for DSM
- Co-operative support for development and demonstration of DSM technologies
- Investigation of techniques for implementation of DSM in the market place
- Development of improved methods for incorporating DSM into integrated resource planning
- Support DSM technologies to reach their full market potential
- Give utility investments enhanced value for customers

Examples of current DSM related tasks of International Energy Agency

- Task XI - Time of Use Pricing and Energy Use for Demand Management Delivery**
- Task XII - Cooperation on Energy Standards**
- Task XV - Network Driven DSM**
- Task XVI - Competitive Energy Services**
- Task XVII - Integration of Demand Side Management, Energy Efficiency, Distributed Generation and Renewable Energy Sources**

However, the IEA DSM Programme has not so far carried out any work on the impact of DSM on emissions.

Thank You for attention!

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