



ECONOMIC COMMISSION FOR EUROPE

COMMITTEE ON SUSTAINABLE ENERGY

Steering Committee of the Energy Efficiency 21 Project **Ad Hoc Group of Experts on Energy Efficiency Investment for** **Climate Change Mitigation**

Tenth meeting,
Geneva 21 – 22 February 2008



ROMANIAN AGENCY FOR ENERGY CONSERVATION

National Participating Institution

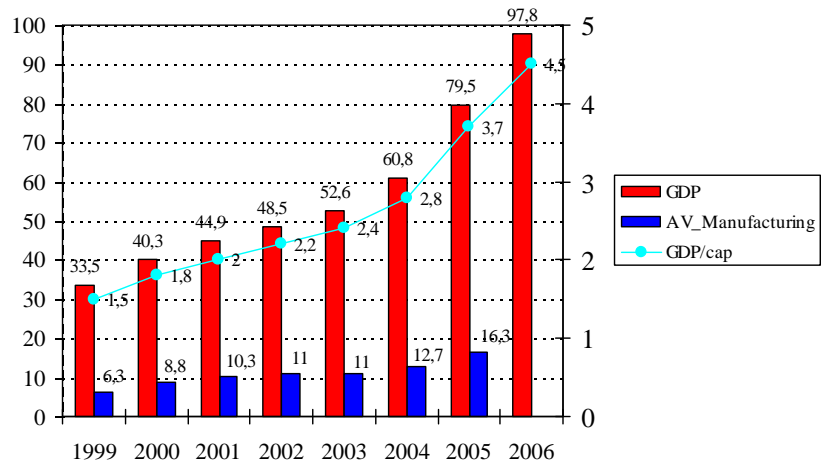
Specific conditions to promote energy efficiency and renewable investment projects in Romania

Corneliu ROTARU PhD

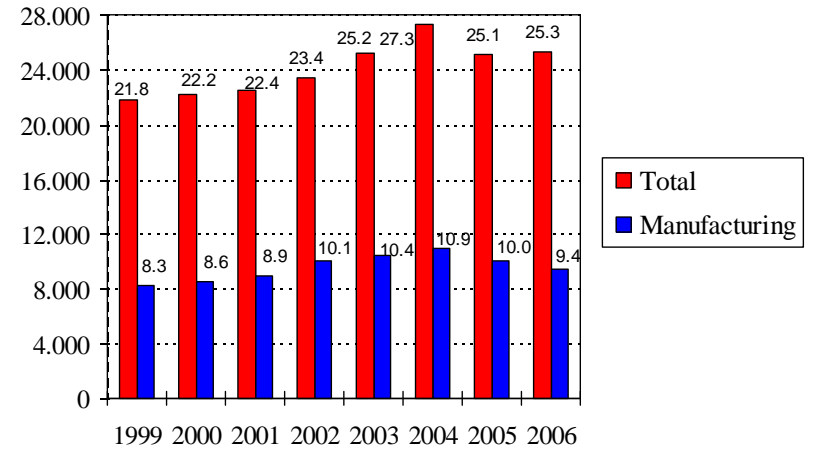
Director ARCE – EE&RES

Relevant economic / industrial data on the country

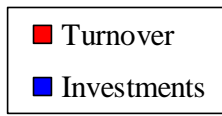
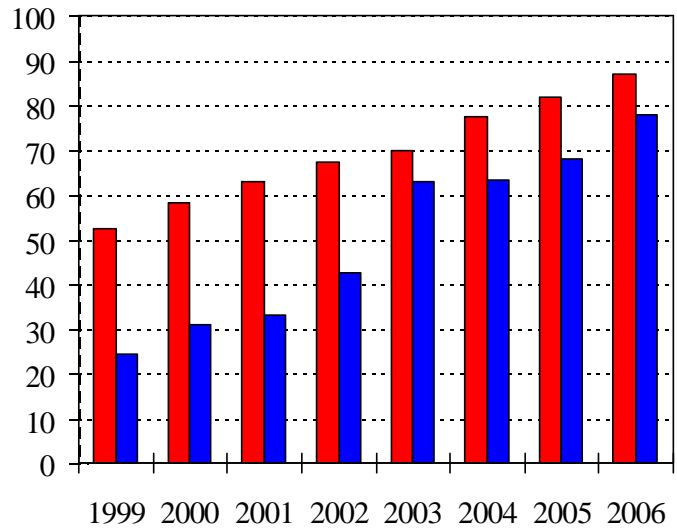
- Short overview of economy / energy consumption evolution in Romania**



Economic evolution



Evolution of the final energy consumption

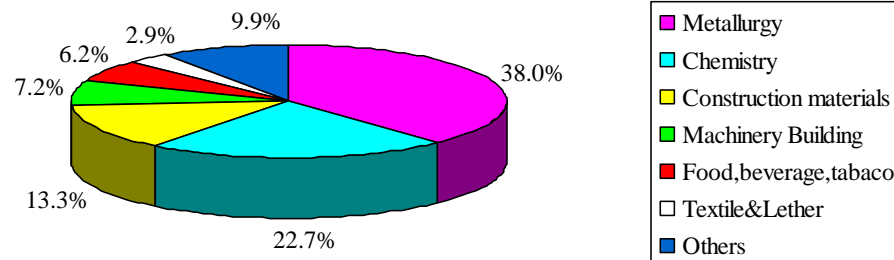


Share of private sector in industry

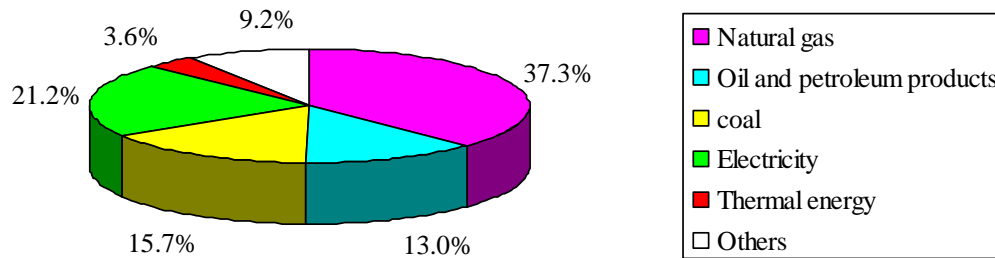
Source : Statistical yearbook & ARCE / Odyssee

Relevant economic / industrial data on the country

Structure of industrial energy consumption - 2006



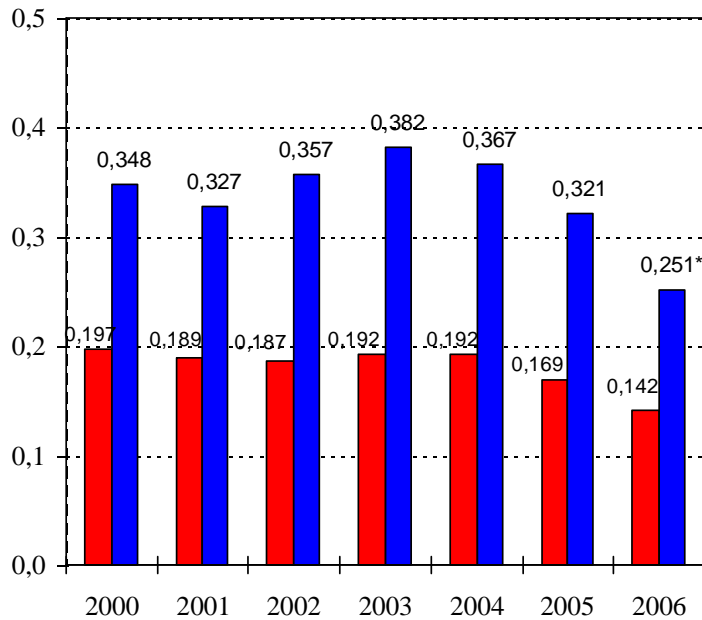
by branch



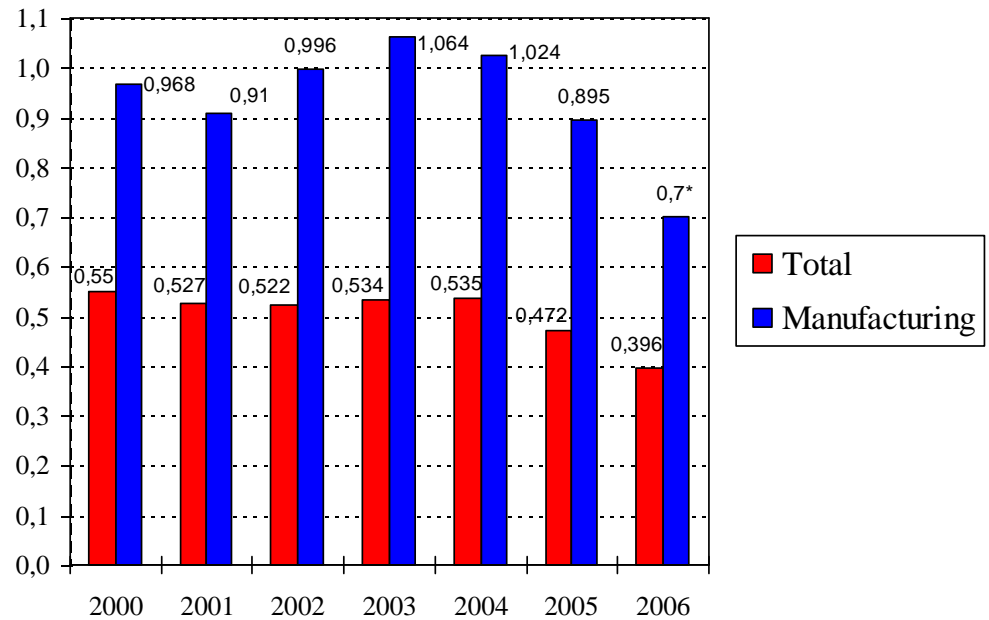
by type of energy

Relevant economic / industrial data on the country

Evolution of final energy intensity



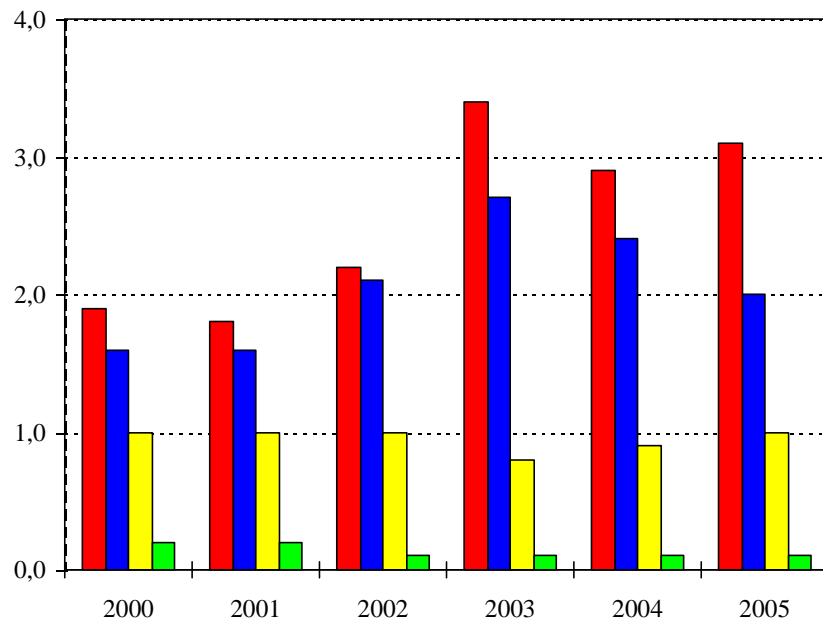
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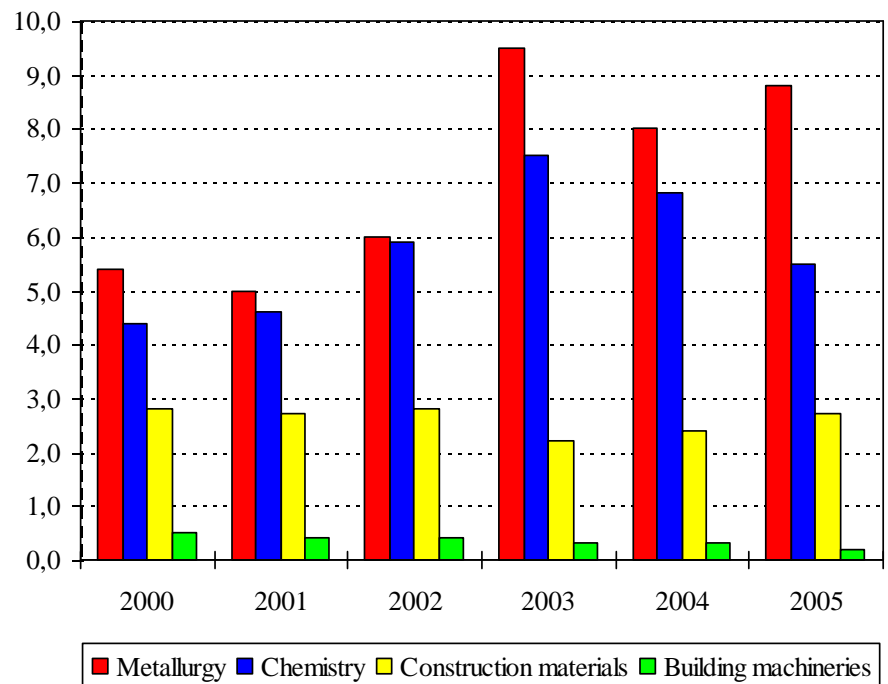
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Relevant economic / industrial data on the country

Energy intensity of selected industrial branches



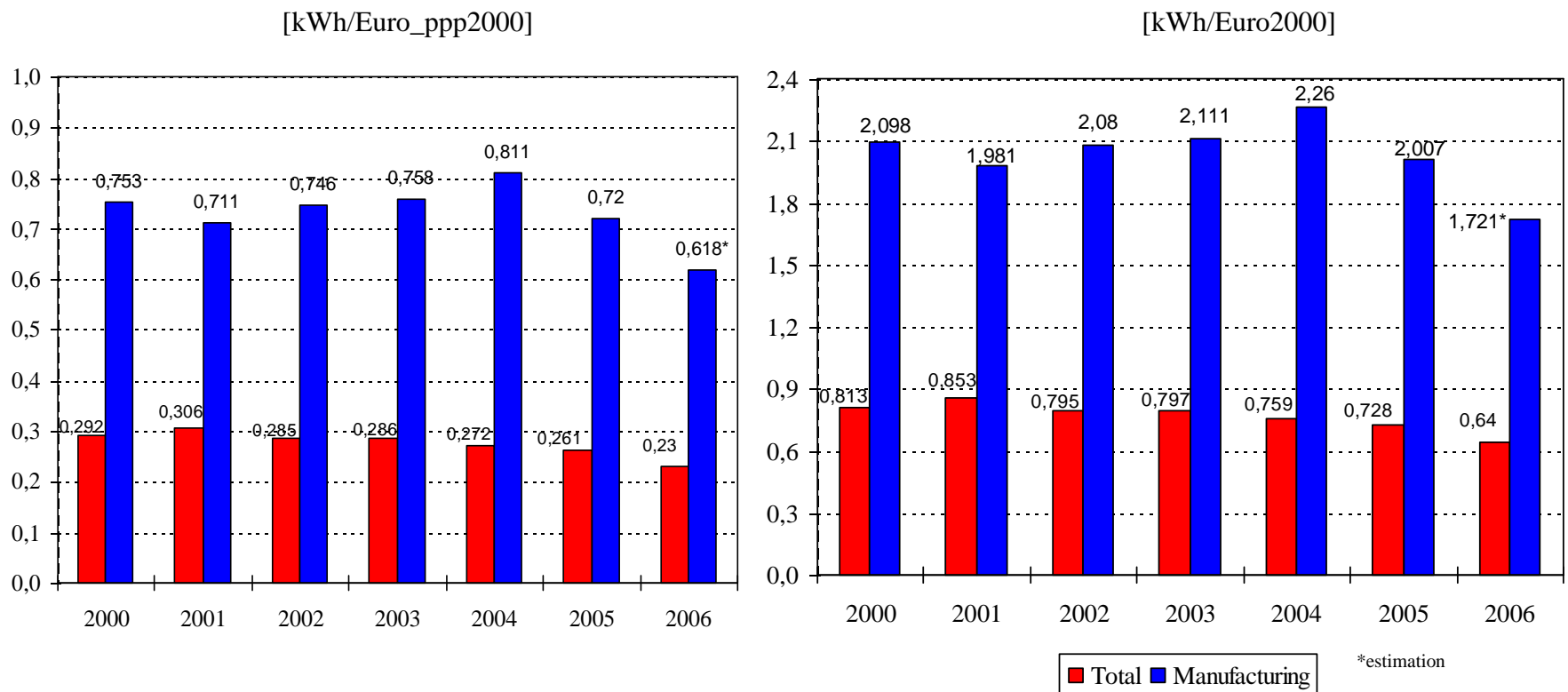
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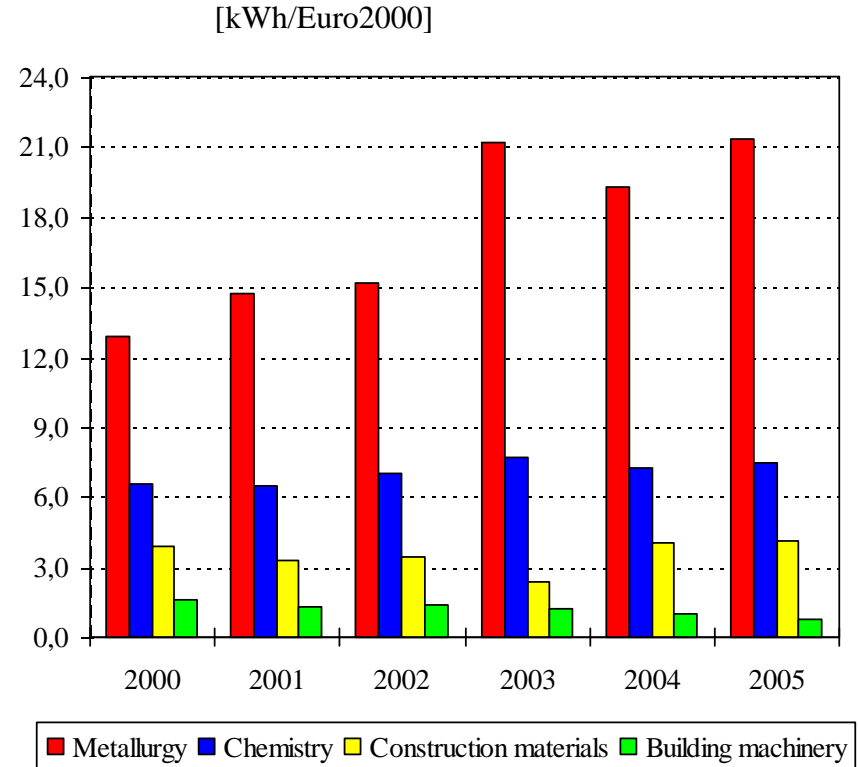
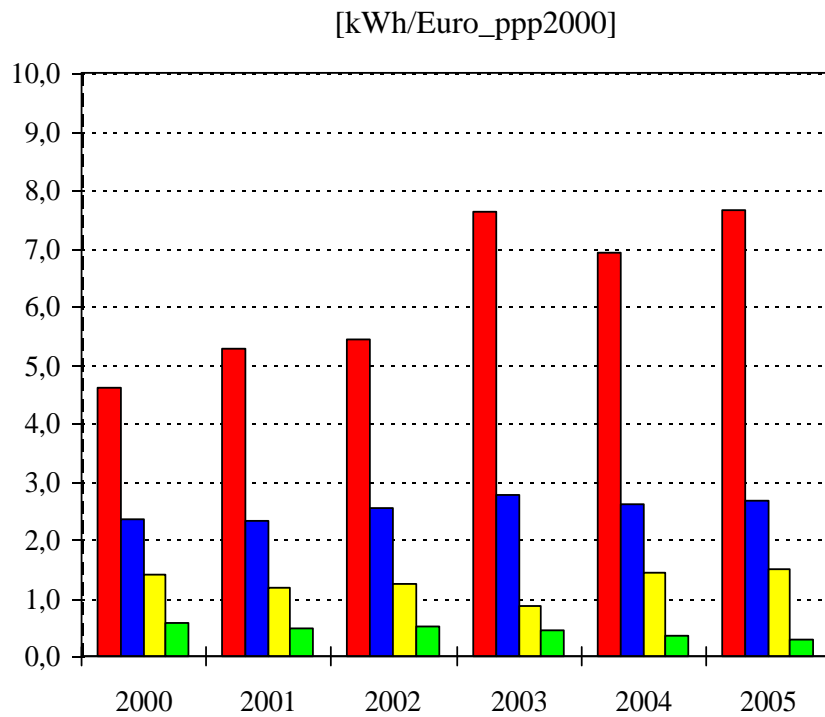
Relevant economic / industrial data on the country

Evolution of electricity intensity



Relevant economic / industrial data on the country

Electricity intensity in selected industrial branches



Institutional framework supporting Clean Energy, EE&RES

– Agencies

- National level : **ARCE**,
- Local level agencies :
 - **ARCE territorial branches**



- **ALGEPEN** – Brasov city



- **ABMEE** – Iasi city



- **HEMPS** – Harghita county



- Agency for energy Efficiency and Environmental Protection- **Bucharest** city

- Agency for Energy Management – **Sighisoara** city

- **ALEA** – Local Energy Agency – **Alba Iulia** city

- **ALEEM** – Local Energy and Environmental Agency – **Vaslui** city

Institutional framework supporting Clean Energy, EE&RES

Energy services companies – ESCOs



S. C. ENERGY-SERV S.A. was set-up in 1996, as the first private Romanian ESCO



SE GES The ROMANIAN-AMERICAN ENTERPRISE FUND (RAEF) together with the EBRD launched a dedicated program for developing and financing for energy efficiency projects in the Romanian **industrial sector**. SE GES initial financing consists of a total of 15 million EURO of RAEF's equity and EBRD's loan



ENERGY SAVING AGENCY S.A a Danish / Romanian company acting in **municipal sector**



ENERGO – ECO a Romanian-Canadian joint venture between Energobit Romania and Econoler Canada



E.S.G. - Energy Service Group



ESCOEnergy

Institutional framework supporting Clean Energy, EE&RES

- **Energy centers (NGOs):**

- **APER – Association for Energy policy in Romania**



- **OER – Energy Cities Network in Romania**



- **ANCER – National Association of Energy Consumers in Romania**



- **SOCER – Romanian Society for optimization of Energy Consumption**



- **Financial structures**

- **FREE – Romanian Energy Efficiency Fund**



an independent institution established through [Emergency Ordinance no. 124/2001](#), approved by [Law no. 287/2002](#), with USD 10 million seed capital as grant from **Global Environment Facility (GEF)** through **World Bank**.

- **AFM – Administration of Environmental Fund**

Baza legala si info vz site



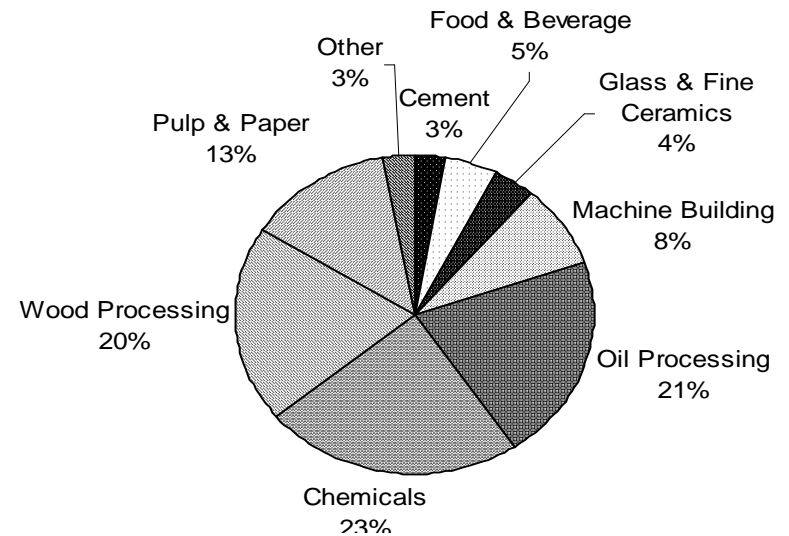
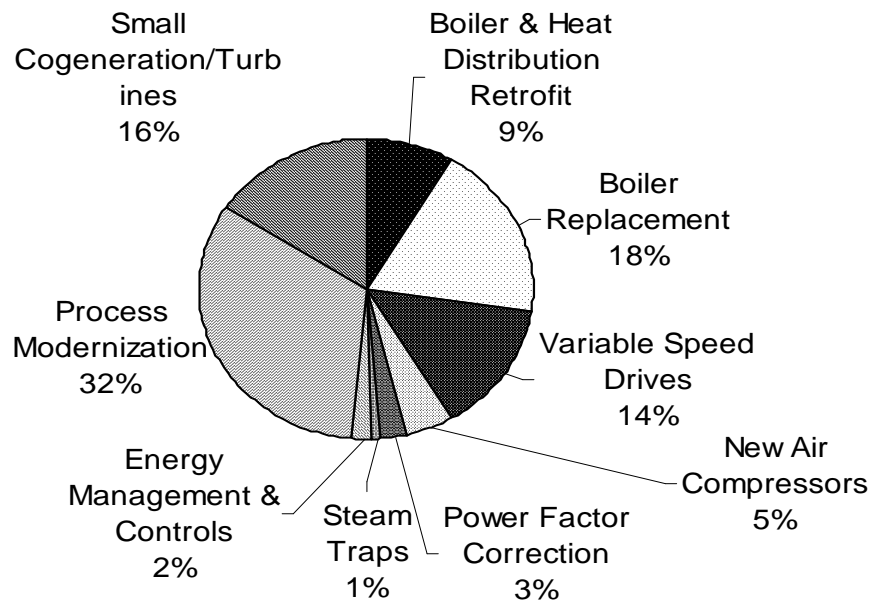
- **MEF / SF – Management authority for Structural Funds (SOP Competition/ priority axe 4)**



Project opportunities - general

- **FREE experience (2001 – basic projects portfolio)**

- Potential Investments by Industry Type
- Potential Investments by Technology Type



Project opportunities - general

- ***FREE experience – size of financed projects (some examples)***
 - SC UNIO SA Satu Mare, for a loan of US\$130 thousands - The investment consists in the old and low 3V45 Reșița reciprocating air compressors with modern and energy efficient Ingersoll screw air compressors replacement.
 - SC TRANSGEX SA Oradea, for a loan amounting to US\$425 thousands - The investment consists in connecting five district heating substations to the geothermal station no. 4767 Oradea.
 - SC CET SA Iași is concluded, for a loan amounting to US\$980 thousands -
 - The investment consists in modernizing district heating substations, and their district heating networks.
 - SC ULEROM SA Vaslui, for a loan of US\$448 thousands.

Project opportunities - general

- ***GEF / ARCE experience (2004 -2006)***

UNDP/GEF provided substantive support to **68 investment proposals**, in the form of:

- Technical Assistance (TA), meaning studies,
- Direct Contributions (DC) meaning donations of energy efficiency-related technical equipment, or both.

Structure of investment proposals :

- **34** investment proposals became 'definite' investments - implementation was underway or complete - combined value of **69,791,790 USD**.
- **23** investment proposals represent “work-in-progress” - a typical energy efficiency investment project can take a year to move from initial concept to a final investment decision.
- **11** investment proposals are unlikely to result in an investment.

Project opportunities – presentation of developed projects or in preparation

EE projects:

- Industry :
 - **Jaspers pipe-line 2008 – 22 proiecte - 66 MEURO(min 0.3 – max 12.2)**
- Municipalities :
 - **ARCE pipe-line 2007 - 22 projects, DH rehabilitation ~ 11 mil euro co-financing – leveraging effect : 1/5; energy savings : 180 ktoe/year**
- Household rehabilitation :
 - **National Program (33%+33%+34%) – law. 260 /2006**

RES projects :

- Biomass in forest area
- Biogas – SAPARD : 34 pig farms + 36 cow farms identified
- MCH after privatization 2006

SHP privatization in figures, 8 owners

Year	No. of SHP	Pi (MW)	Epr (GWh/year)	Em (GWh/year)
2004	18	22,91	61,66	37,50
2005	10	12,20	37,50	19,20
2006	20	6,93	23,52	9,06
Total	48	42,04	122,68	65,76