EINSTEIN

Expert System for an Intelligent Supply of Thermal Energy in Industry and other large scale applications

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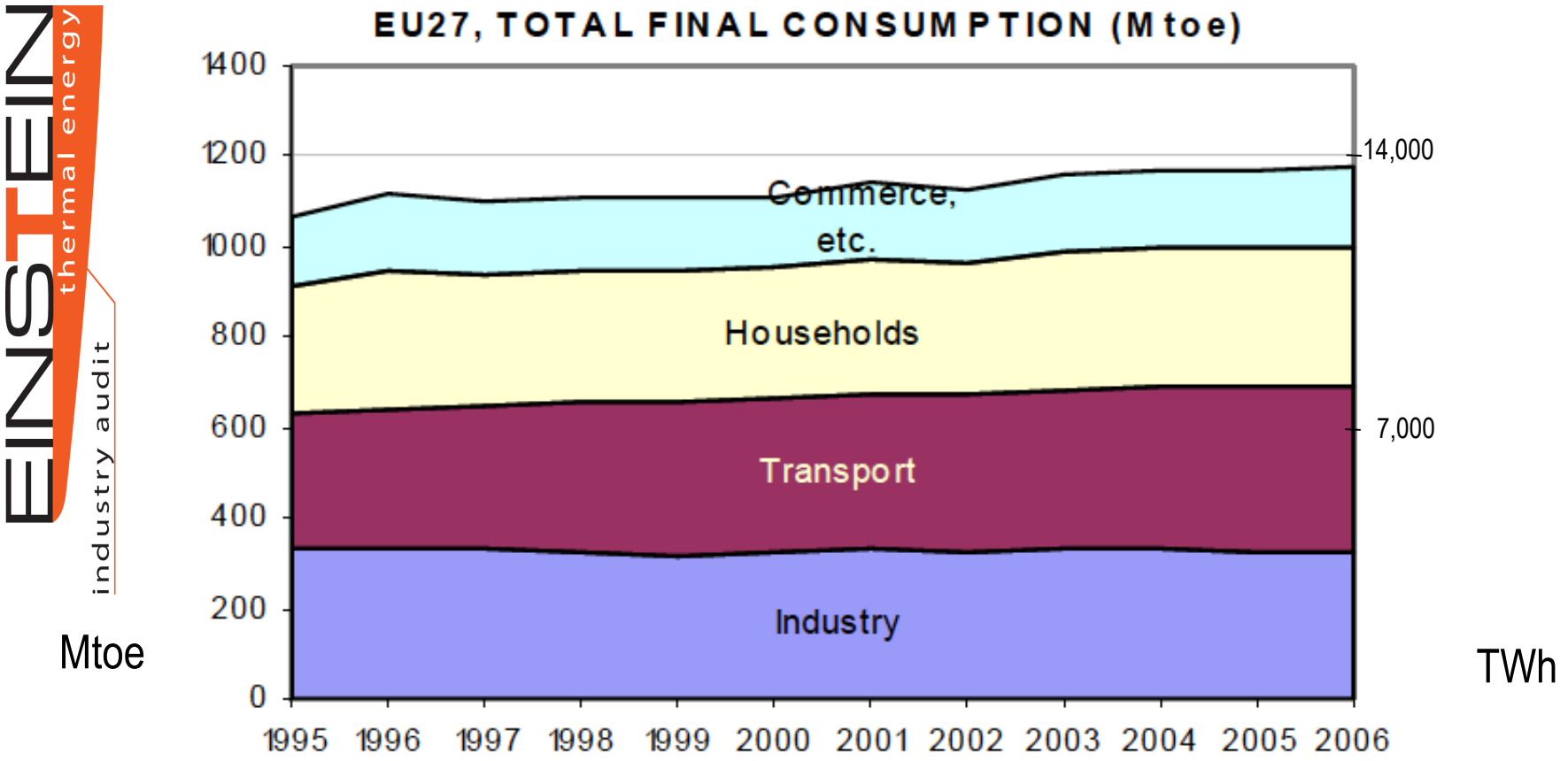
Thermal energy consumption in industry

Final Energy Consumption in industry: 28% of total in EU27 (2006)



Strategic Energy Review 2008; data source: Eurostat

Thermal energy consumption in industry

- Final Energy Consumption in industry: 28% of total in EU27

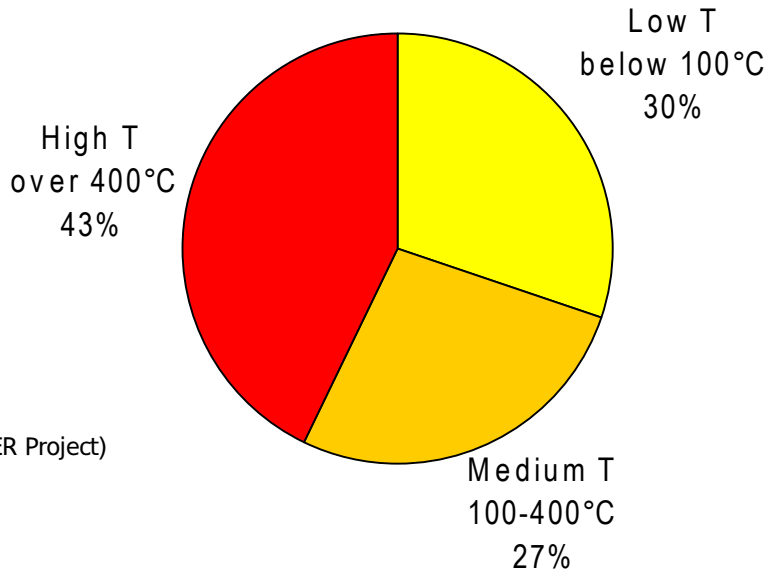
Data for 2006 EUROSTAT

- Final Energy Consumption for heat production in industry: 70%

Data for 2004 EUROSTAT

- Industrial Heat Demand at Low and Medium Temperature :

57% at 400° C or less



Data for 2003, 32 Countries: Source: ECOHEATCOOL (IEE ALTENER Project)

Thermal energy consumption in buildings

- Final Energy Consumption for space heating and cooling in buildings: 25% of total in EU27

  Data for 2005 DG INFSO

Energy saving targets

EU target by 2020:

- Achieve 20% emissions reduction
- Improve energy efficiency by 20%
- Increase use of renewables to 20%

Areas of application

Industries and SMEs with large thermal energy demand at low & medium temperature

- Manufacturing sectors:
  - Food industry
  - Pharmaceutical, chemical,
  - Pulp & paper
  - Machinery, Automobile, Textile,..

Areas of application

…But also other medium and large scale consumers of heat and cold:

- Large buildings (e.g. commercial centres, hospitals, offices,...)
- District heating and cooling networks
- Other (e.g. desalination, etc.)

What is EINSTEIN ?

- A methodology and a software tool (expert system) for thermal energy audits and development of alternative energy concepts
- Results:
  - Detailed energy statistics for present state
  - Quantitative pre-design and evaluation of alternative energy concepts

For whom is EINSTEIN ?

1. Energy auditors, energy consultants, energy supply companies, ESCOs
   - ⇒ do audits quicker, better, considering a wider range of technologies
   - ⇒ higher energy savings: possibility of deeper level of analysis even in fast audits
2. Final users (companies with thermal demands) and energy managers
   - ⇒ Receive better audits / better energy concepts at lower cost
3. Public authorities
   - ⇒ Receive a tool for quantification of what is feasible with BAT
   - ⇒ Can be used for normative purposes (permits, funding criteria) and energy labeling