

Energy Efficiency Trends and Policies in Hungary

Odyssee-Mure training programme

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HEA



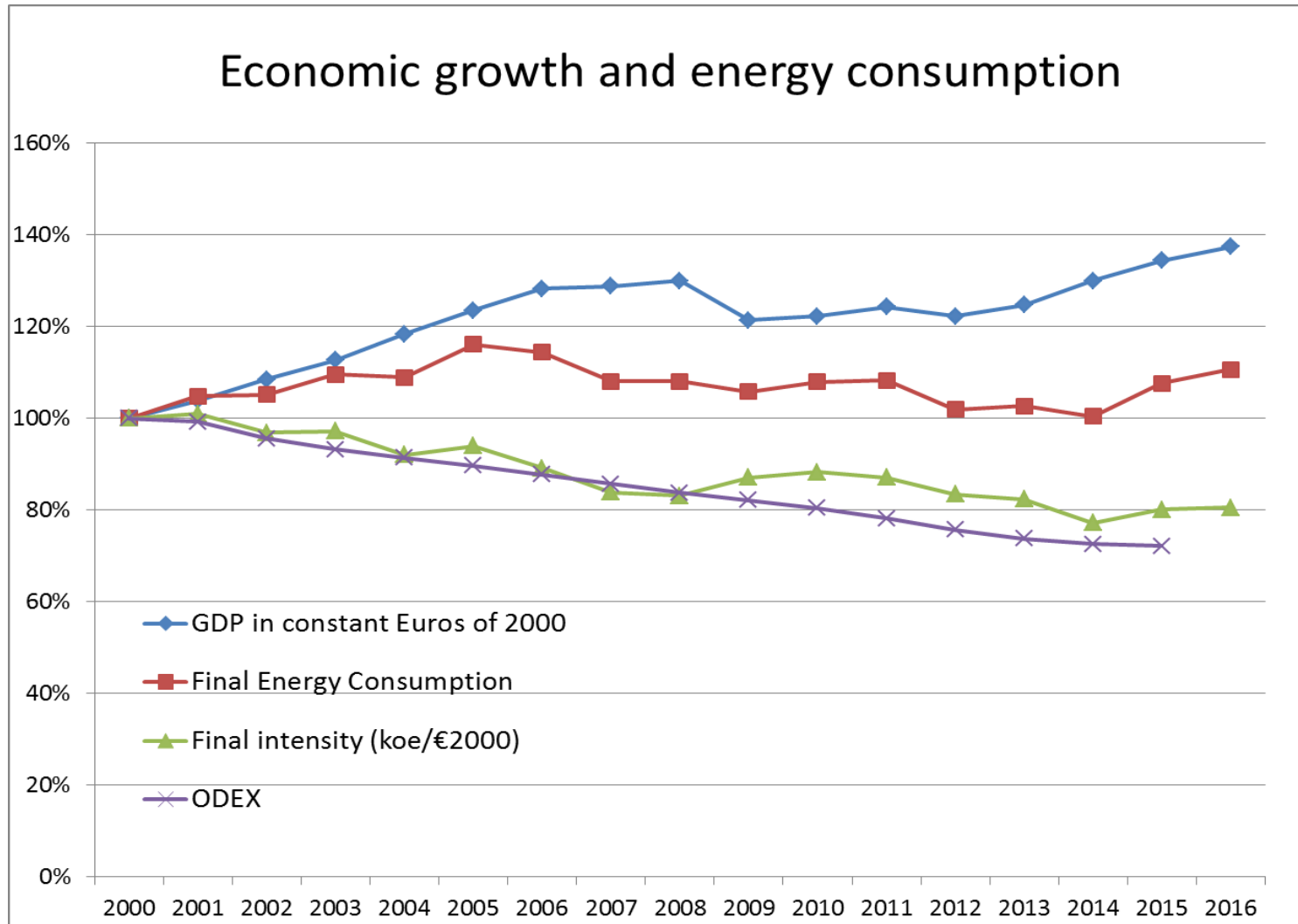
Priorities of energy policy

- Energy efficiency is a declared priority of the National Energy Strategy and the NEEAP
- Focus is on
 - reducing energy imports
 - improving energy security
 - affordability through continuous residential energy price cuts since 2011

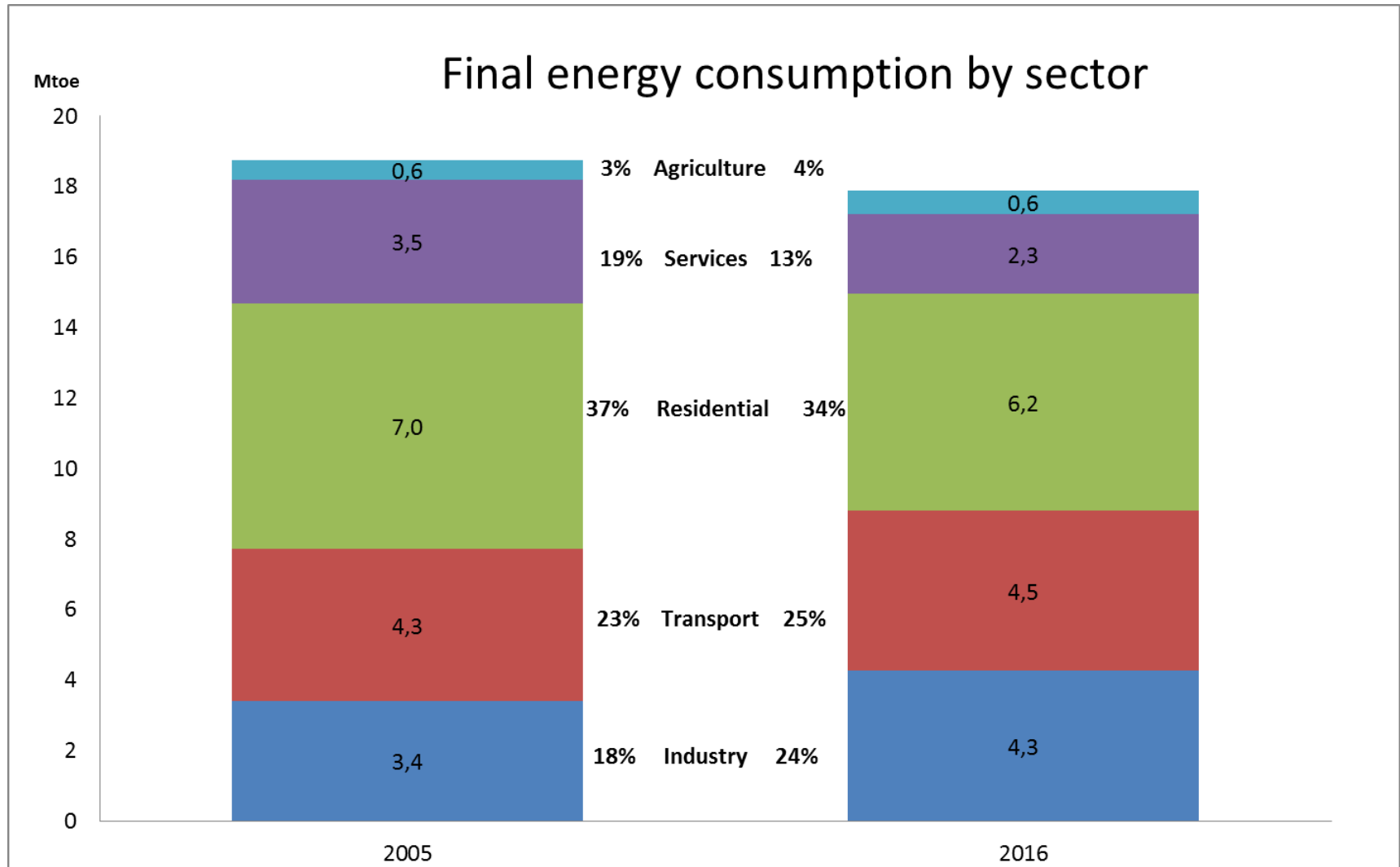
Energy efficiency measures

- Hungary intends to achieve the 1,5%/year saving target of FEC with 17 alternative measures
- No EEOS was introduced, and no plan to do so is on the energy policy agenda

Cross cutting trends



Large but decreasing share of the residential sector,
increasing share of transport and industry

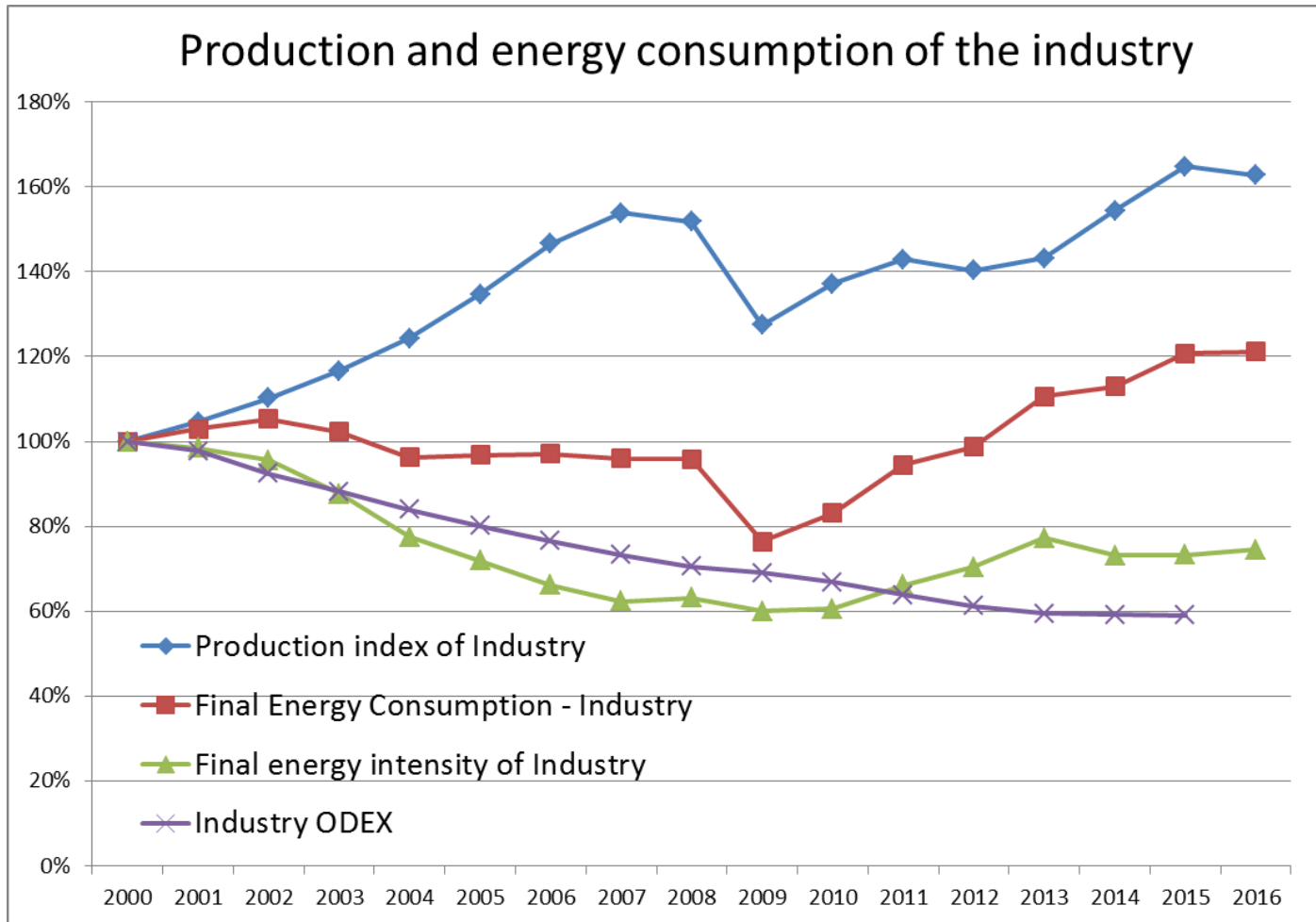


Cross cutting measures

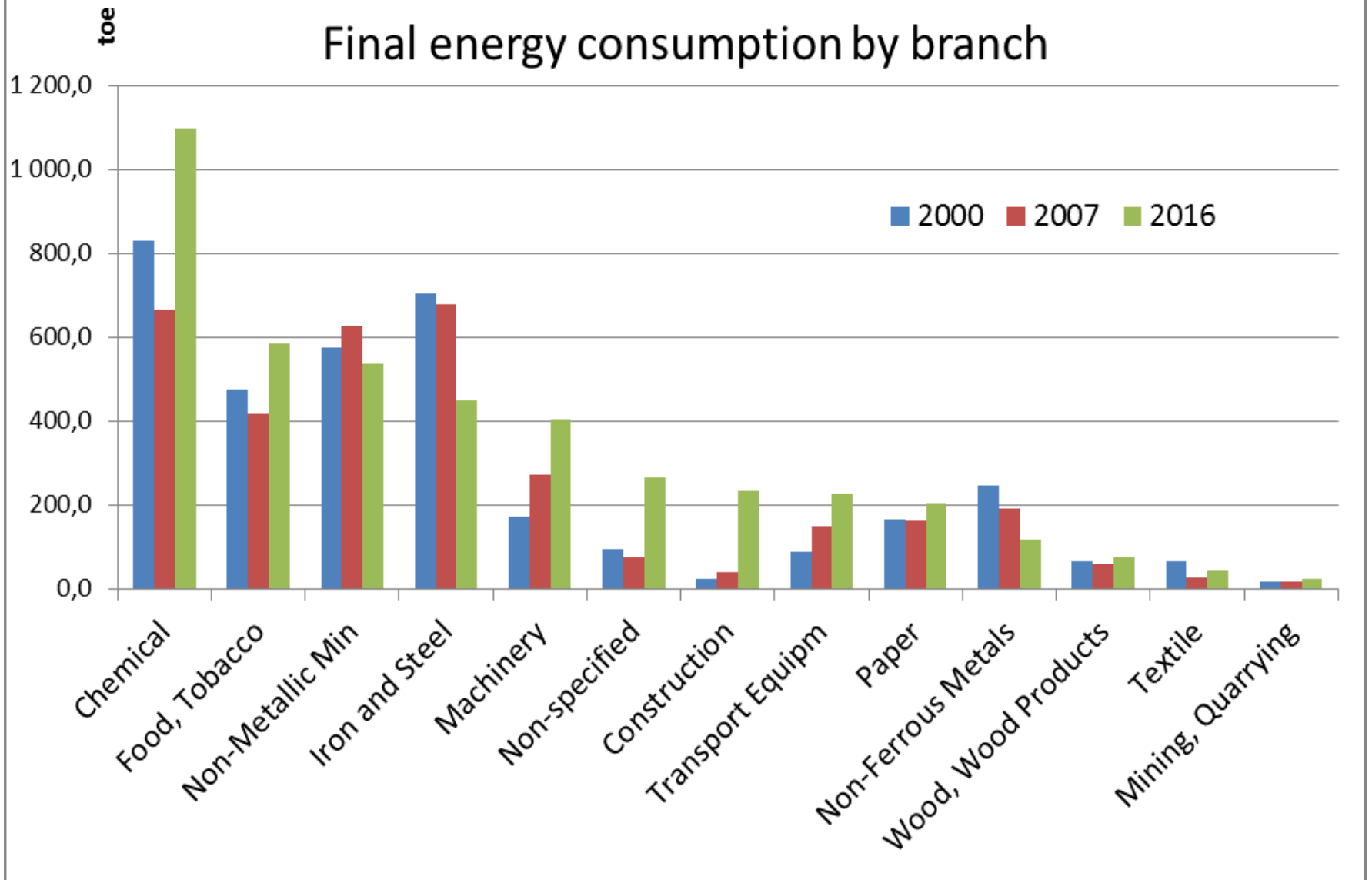
- Operational Programmes with main focus on energy efficiency improvement, financed by EU Funds, +10 OPs
- National Network of Energy Managers
- Various smaller national energy efficiency programmes, such as the ‚Warmth of Home‘ grant programme for residential ee investments

Industry trends

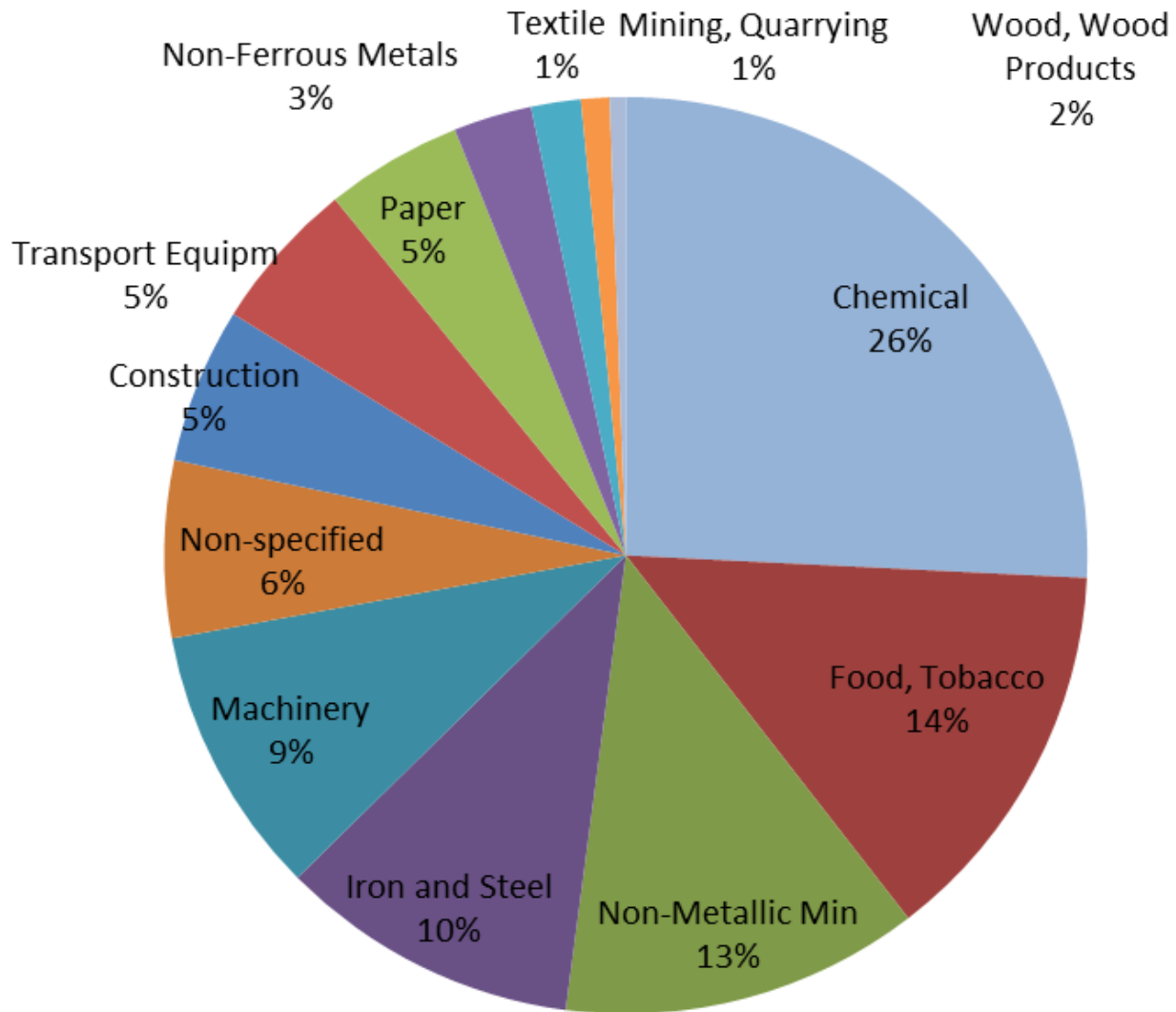
Main driver of ee improvement before 2010: industry sector



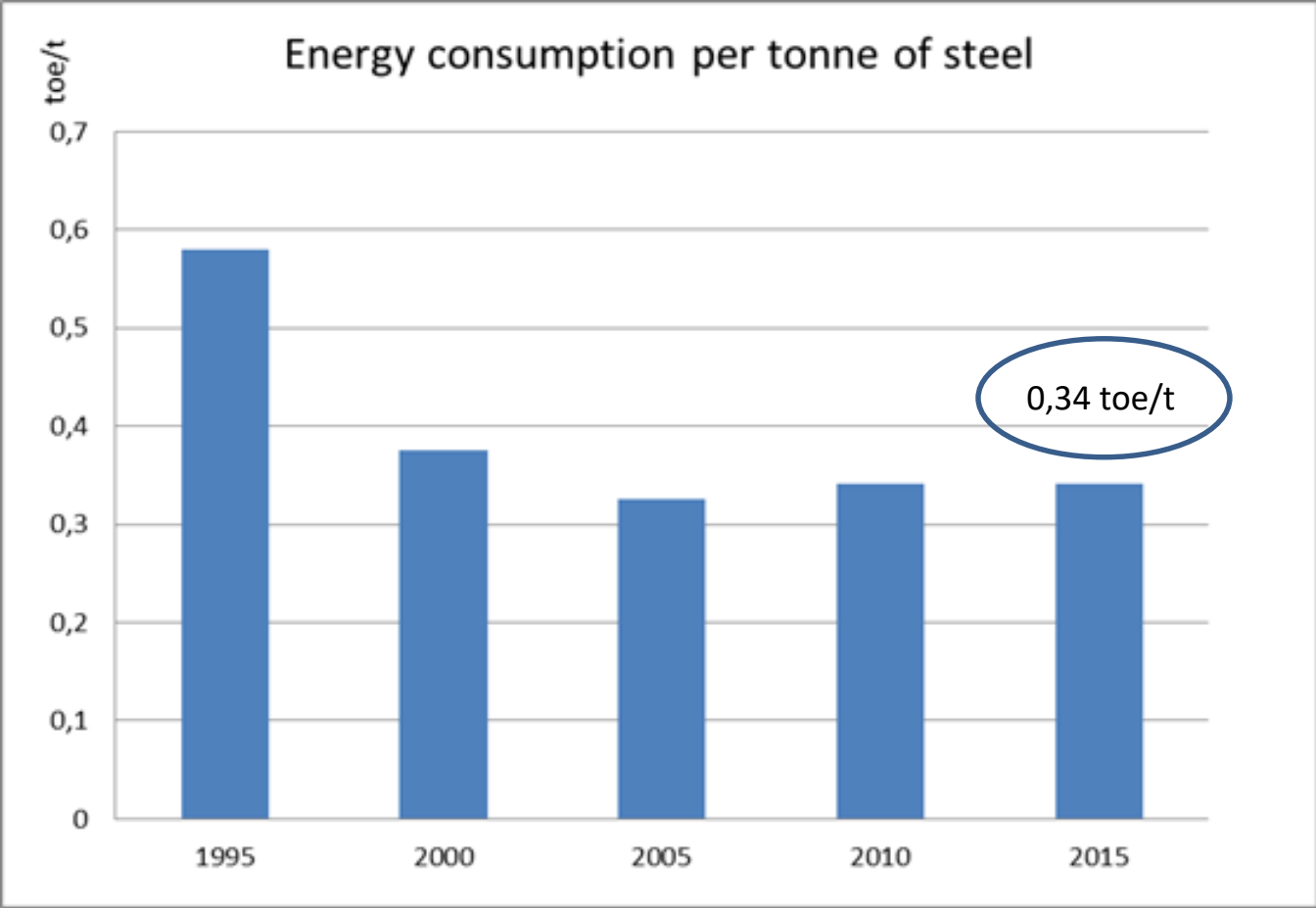
Final energy consumption by branch



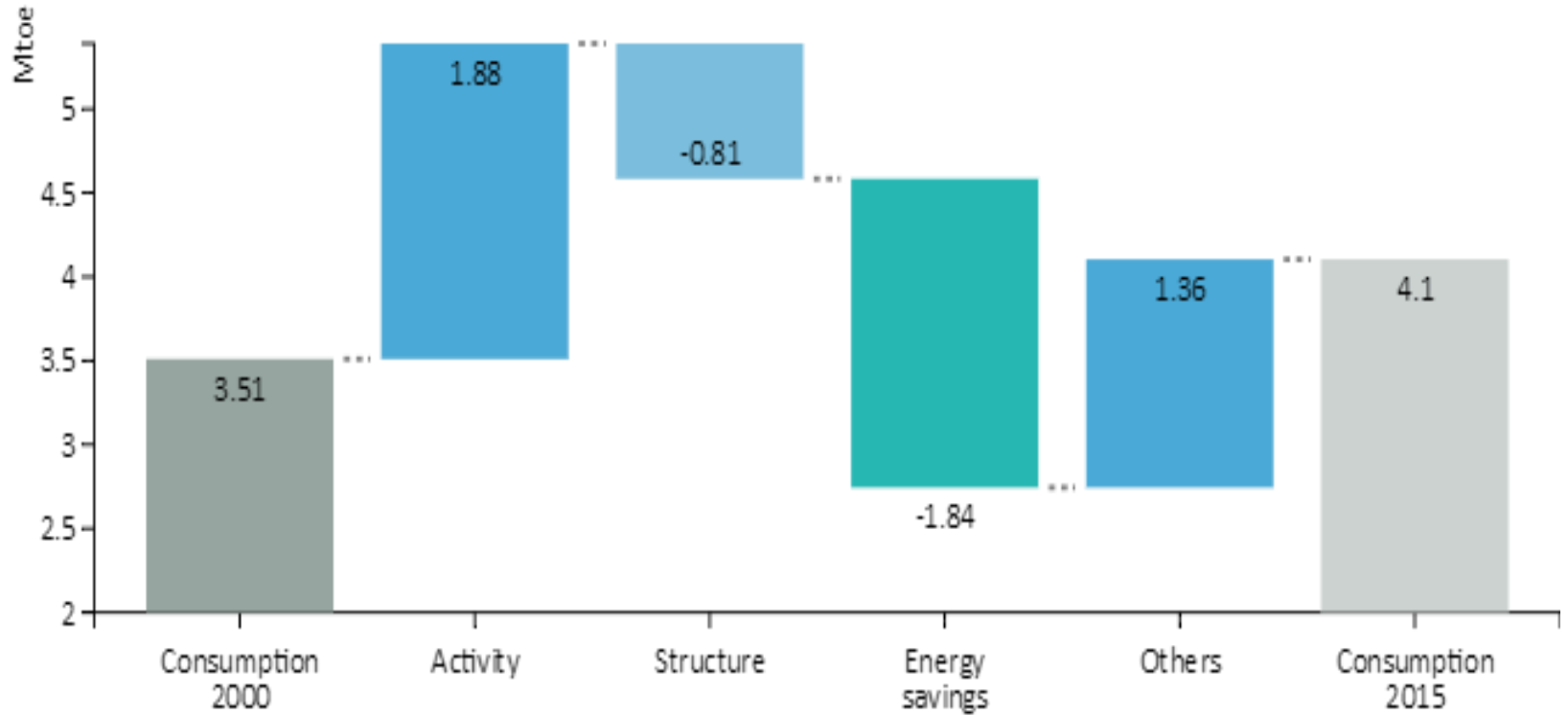
Industrial sectors' consumption distribution by branch in 2016



Specific consumption of steel ranks Hungary in the medium range among EU countries



Decomposition of industrial energy consumption variation

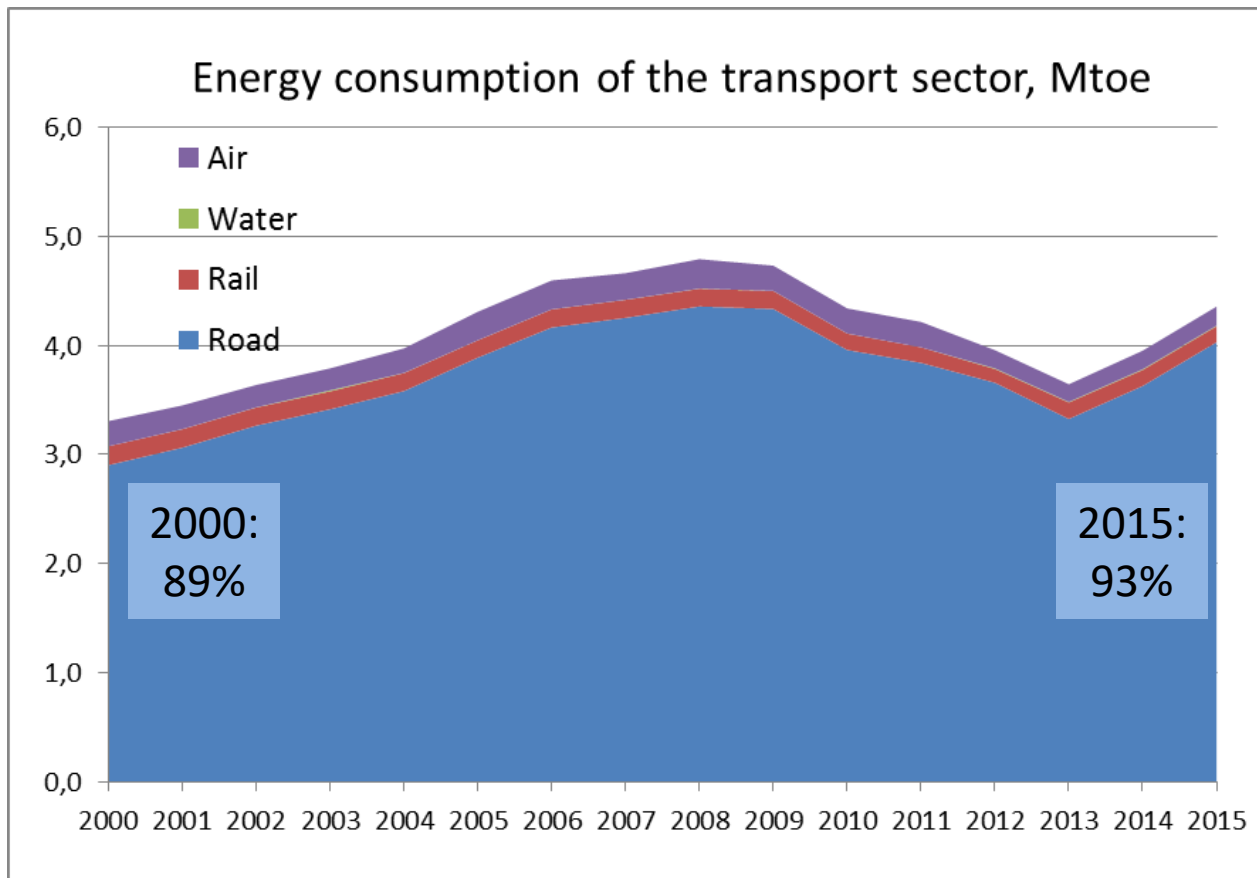


Measures targeting the industry

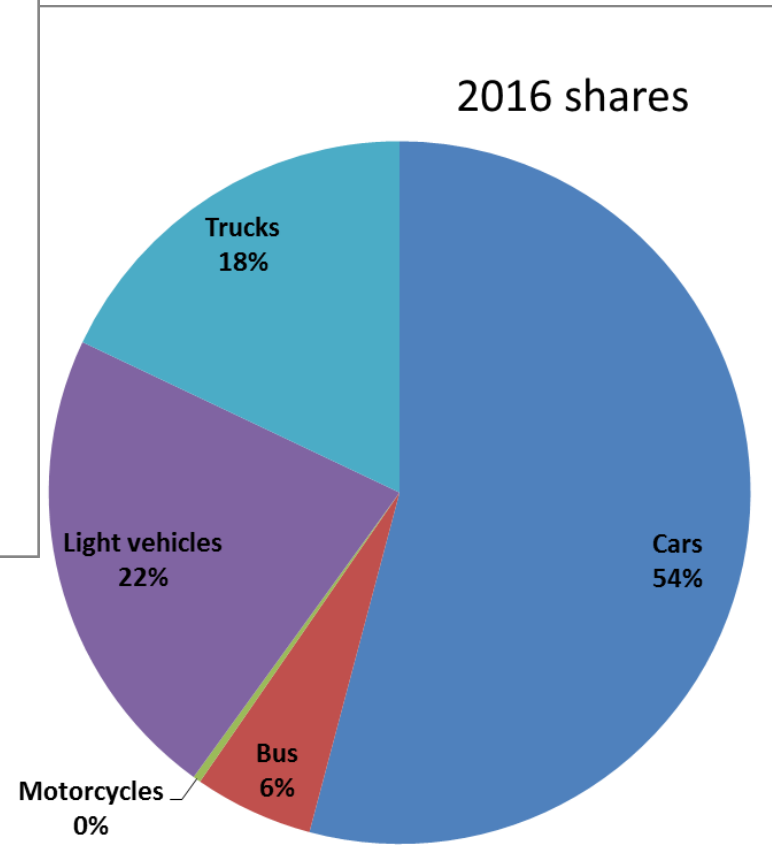
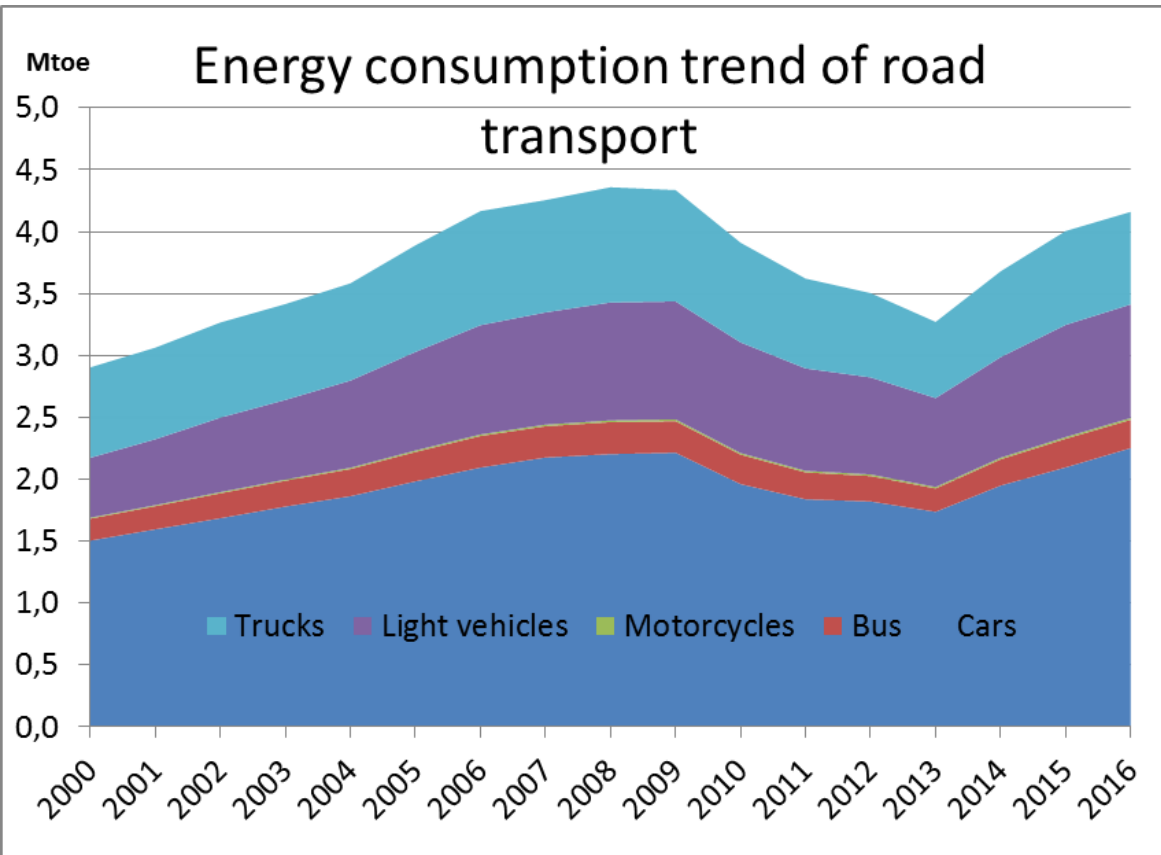
- **SMEs** => EU funded Operational Programmes, non-refundable grants combined with loan programmes are available for ee and renewable projects.
- **Large enterprises** => new measures introduced by the Energy Efficiency Act of 2015
 - mandatory audit for large enterprises (EED Art. 8.)
 - mandatory appointment of an energy manager at large enterprises (*definition is based on energy consumption*)
 - new corporate tax credit was introduced in 2017 for the implementation and operation of investments aimed at improving energy efficiency, tax incentive can be up to 30% of eligible costs (40% for medium, 50% for SMEs)

Transport trends

- Increasing energy consumption by 4,7%/year before 2008
- 24 % drop in consumption due to recession, strong increasing trend of 6% after the recession
- Growing share of road transport energy use

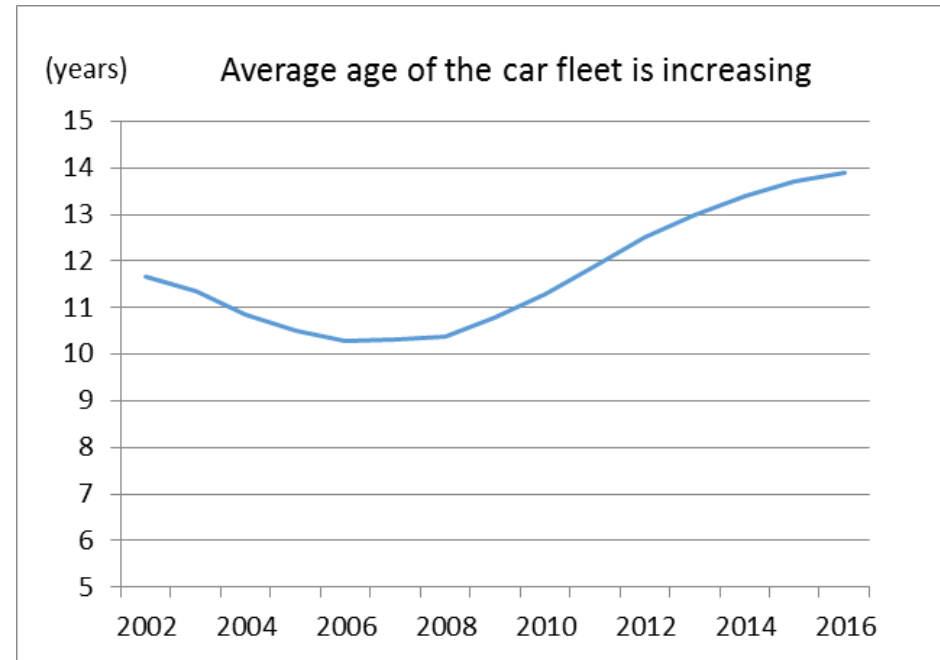
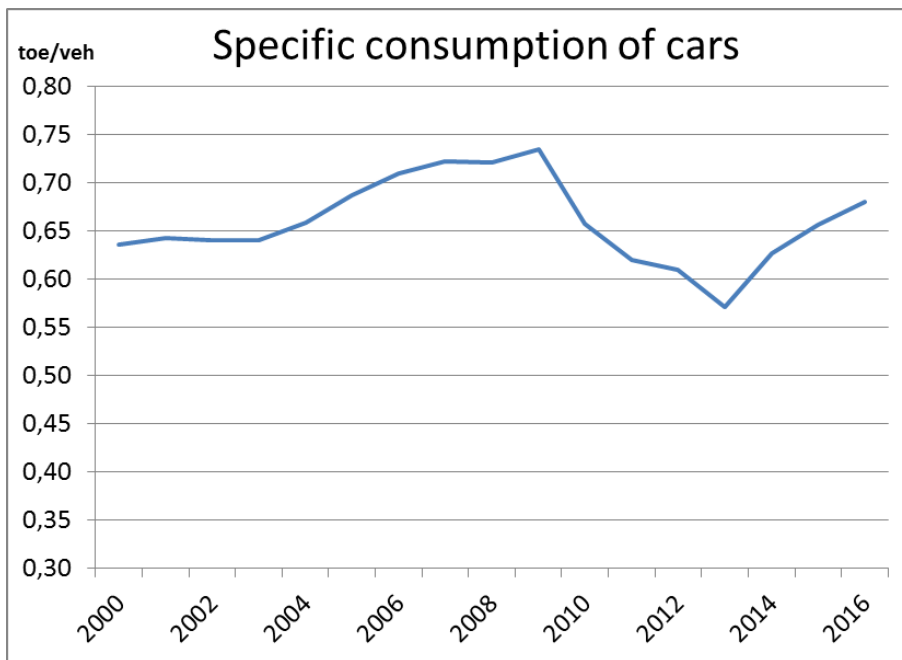


Dominance of road transport both in passenger traffic and freight

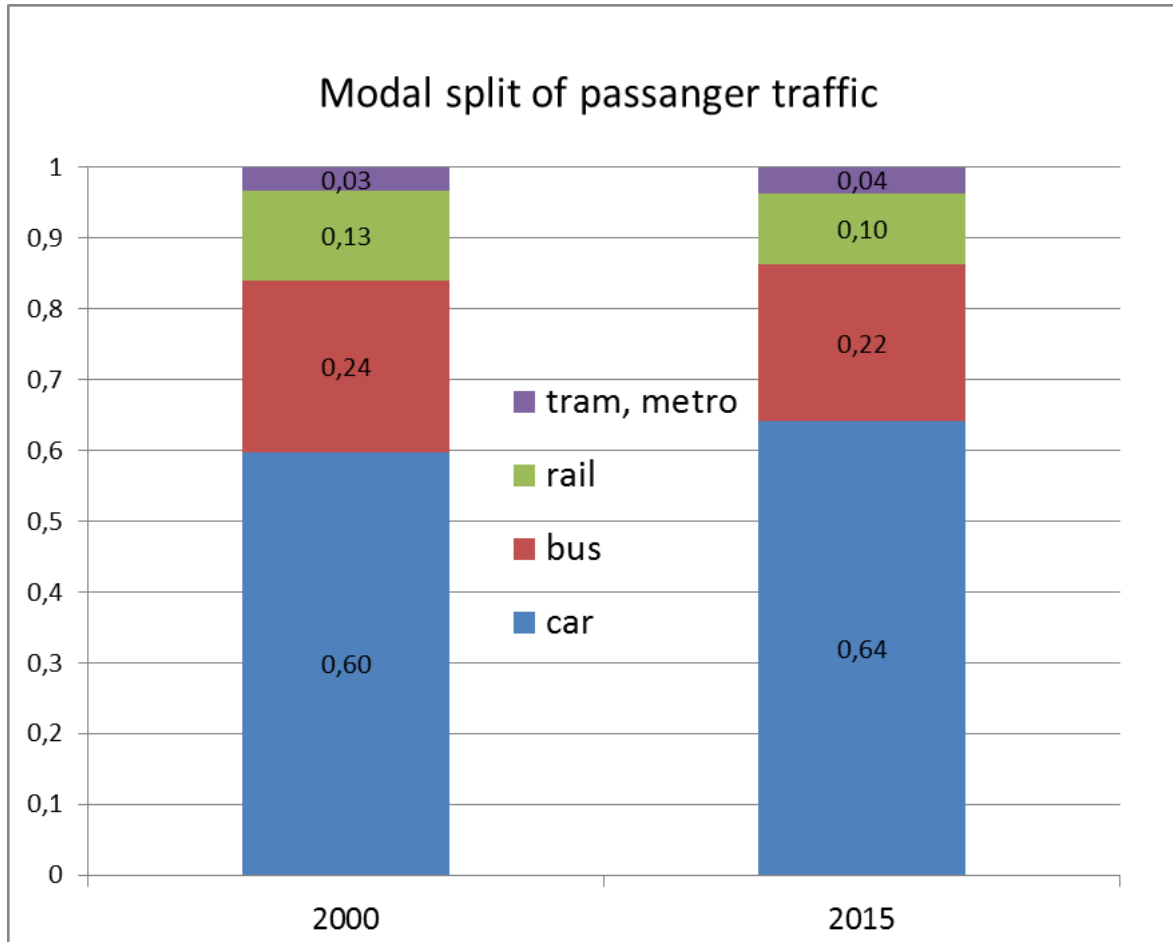


Transport

- The economic crises had a major impact on the sale of new cars: in 2015 it was still very low (3% of total stock in 2015)
- Used cars determine the performance of the car fleet, with increasing specific consumption and growing age of the stock
- High share of gasoline cars (71%) compared to diesel cars (28%)
- Specific consumption of trucks and light vehicles followed a similar trend



Modal shift(?)



- Modal split is increasingly dominated by cars
- Traditionally high share of public passenger transport (HUN:36%, EU: 18%)

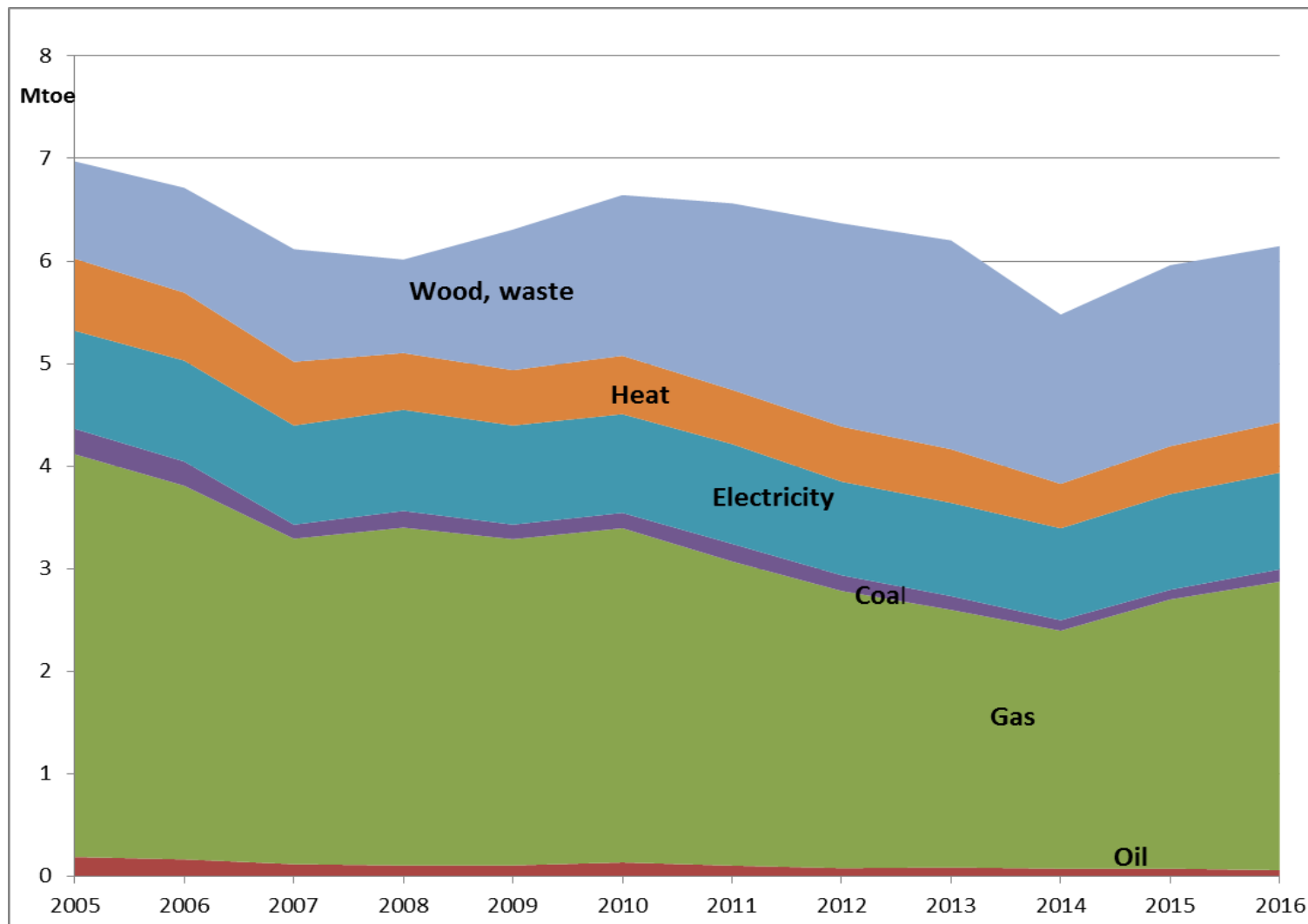
Transport measures

- Toll road system introduced in 2013
- Jedlik Ányos Plan aims to promote electro mobility
- Development of infrastructure for bicycle use, bicycle traffic multiplied since 2010 in Budapest, savings estimated in 2015: 0,34 PJ/year
- Various infrastructure projects in the Transport Operational Programme, supported by EU Funds, related to public transportation in urban and suburban regions, e.g. finalizing the 4th metro line in Budapest (but no saving ascribed to it 😞)
- Total savings documented in 2015: 1 PJ

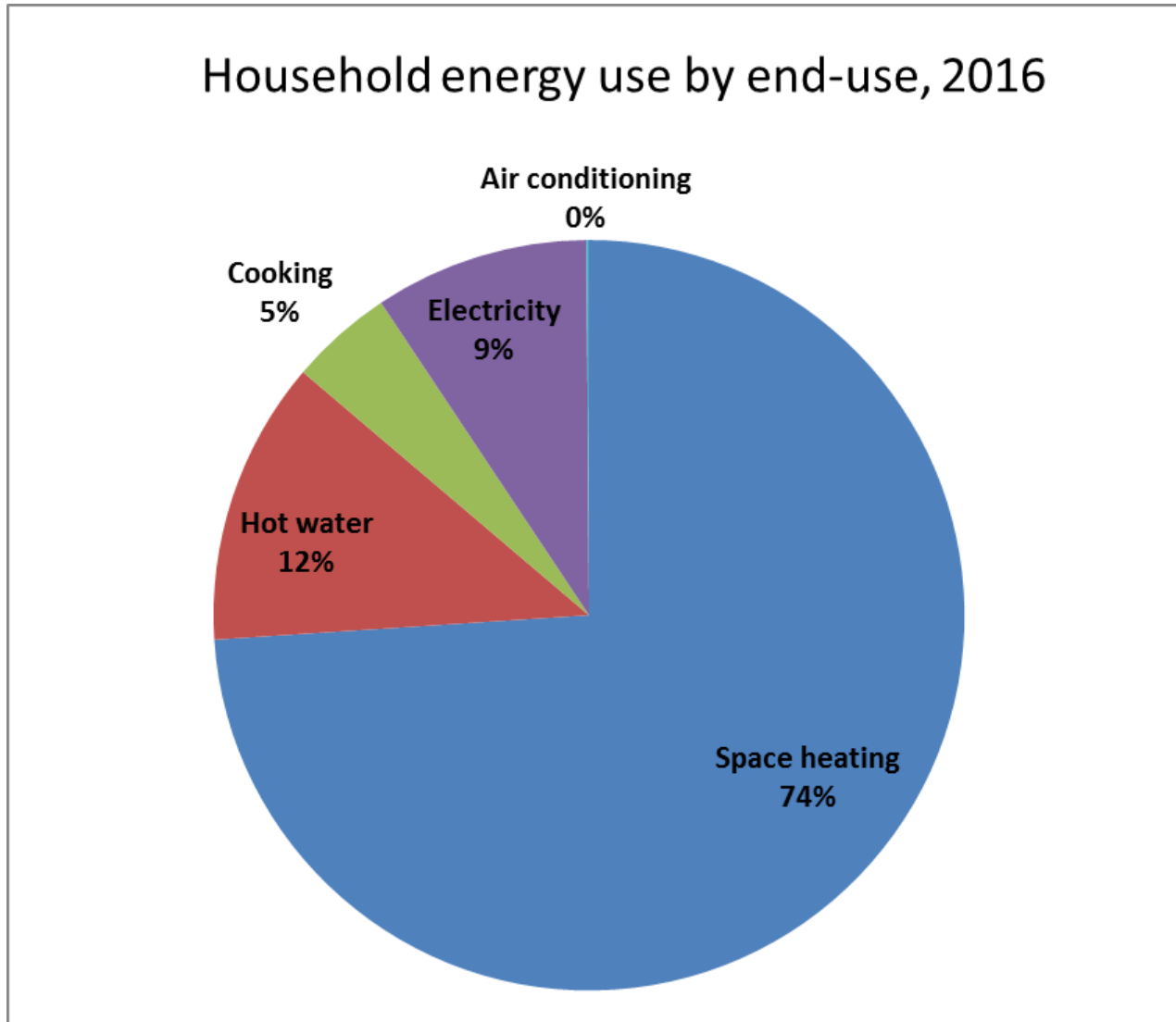
Buildings

- The building sector represents the largest end-use sector in Hungary, it accounts to 47% of FEC, the third highest among EU countries.
- 70-90 % of the building stock needs renovation, more than 25% of the population lives in households with poor living conditions (damp walls, leaking roofs)
- The residential sector consumes more than one-third (34%) of total energy and accounts for 78% of building's consumption (75% of heat energy demand), more than 10 percentage point higher than the EU average
- 10-12 000 public and services buildings make up about 22% of buildings' energy consumption
- ~100 central government buildings: yearly 3% renovation rate obligation concerns 15 000 m²

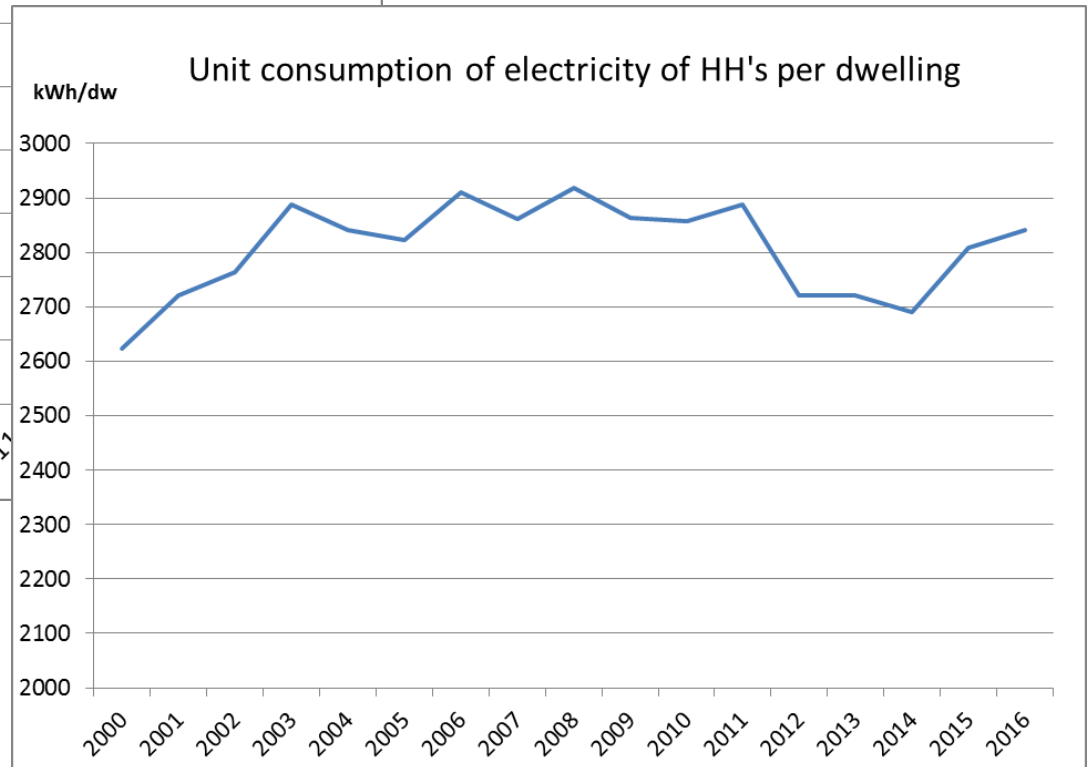
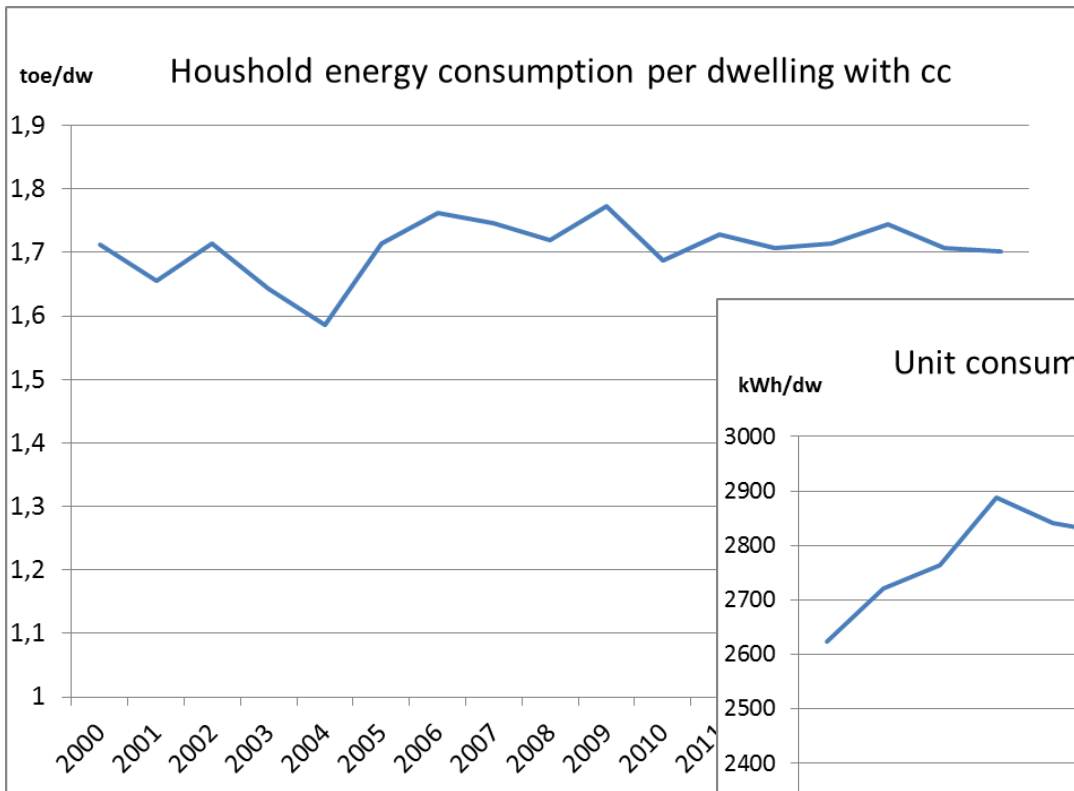
Household energy use is dominated by gas (46%) and wood (28%),
with stable 15% share of electricity and heat (8%)



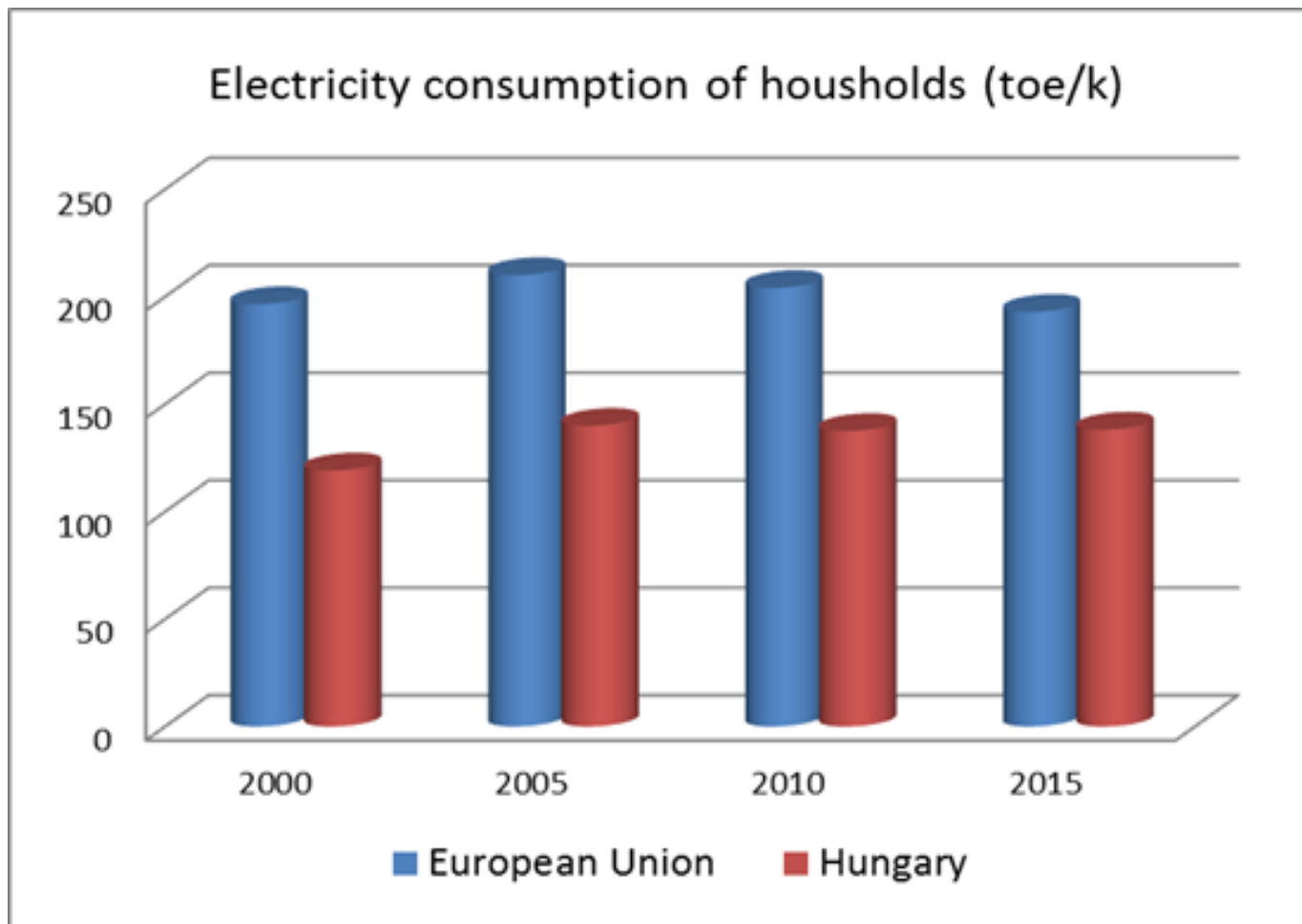
High share of space heating in HH's energy consumption



No declining trend in space heating, no in electricity unit consumption



Lower but growing electrification of homes than in the EU
Increasing electricity consumption is expected



Measures in the building sector

- EPBD transposition into HUN law → stricter building requirements, introduction of a building certification scheme
- EED transposition (Art 5.) → national building registry system was set up in 2013
- Directives of Eco-design and Labelling transposition → effect electricity consumption of homes and offices

Measures in the building sector (2)

- Block house (panel) refurbishment programmes
- Warmth of Homes Program
- New residential loan scheme provided by the Hungarian Development Bank (MFB)
- Owners and operators of public buildings are required to prepare an energy efficiency action plan every 5 years, and report implemented measures and savings to the National Network of Energy Managers' offices

- 1/5th of residential buildings (750k) was built from industrialized pre-fabricated building blocks in the years of 1960-90, with a peak in 1971-85
- Today 36% of panel buildings are refurbished



Huge potential in buildings, but numerous barriers of large-scale building renovations

- Lack of fin. resources (savings) of HHs, high up-front costs
- High rate of owner-occupied homes (90%) and detached family houses with 1-3 flat (93%)
- High rate of energy poverty
- Household's low willingness to get a mortgage
- Lack of due diligence in construction/workmanship – no quality guarantee of renovation work – high share of grey market in construction – lack of trust
- Deep renovation's cost effectiveness is weakened by residential price cuts
- Information barriers on costs&returns, on financial instruments, lack of large scale home advise programmes and awareness programmes

Public bodies responsible for the implementation of energy efficiency measures

- Ministry of National Development (Energy strategy, NEEAP, ee in transport)
- Ministry of National Economy (electro mobility, ee in industry, Eco-design, labelling)
- Prime Minister's Office (EPBD implementation and public procurement)
- Hungarian Energy and Public Utility Regulatory Authority (energy statistics, monitoring, EED Art. 8.)
- National Network of Energy Managers (advisory network)

Policy making, regulation and implementation is fragmented, and divided over several ministries and public bodies,
with insufficient coordination and cooperation