

Strategies for Energy Efficiency in Buildings in EU Countries

MED-ENEC Capacity Building Workshop
“Political and Economic Framework Conditions for Energy
Efficiency and Renewable Energies in Buildings”
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- **EU Energy Policy: Objectives**

- Security of supply
- Environmental protection
- Competitiveness

EU Energy Policy Target for 2020

- 20% renewable energy share in energy supply
- 20% improvement in energy efficiency

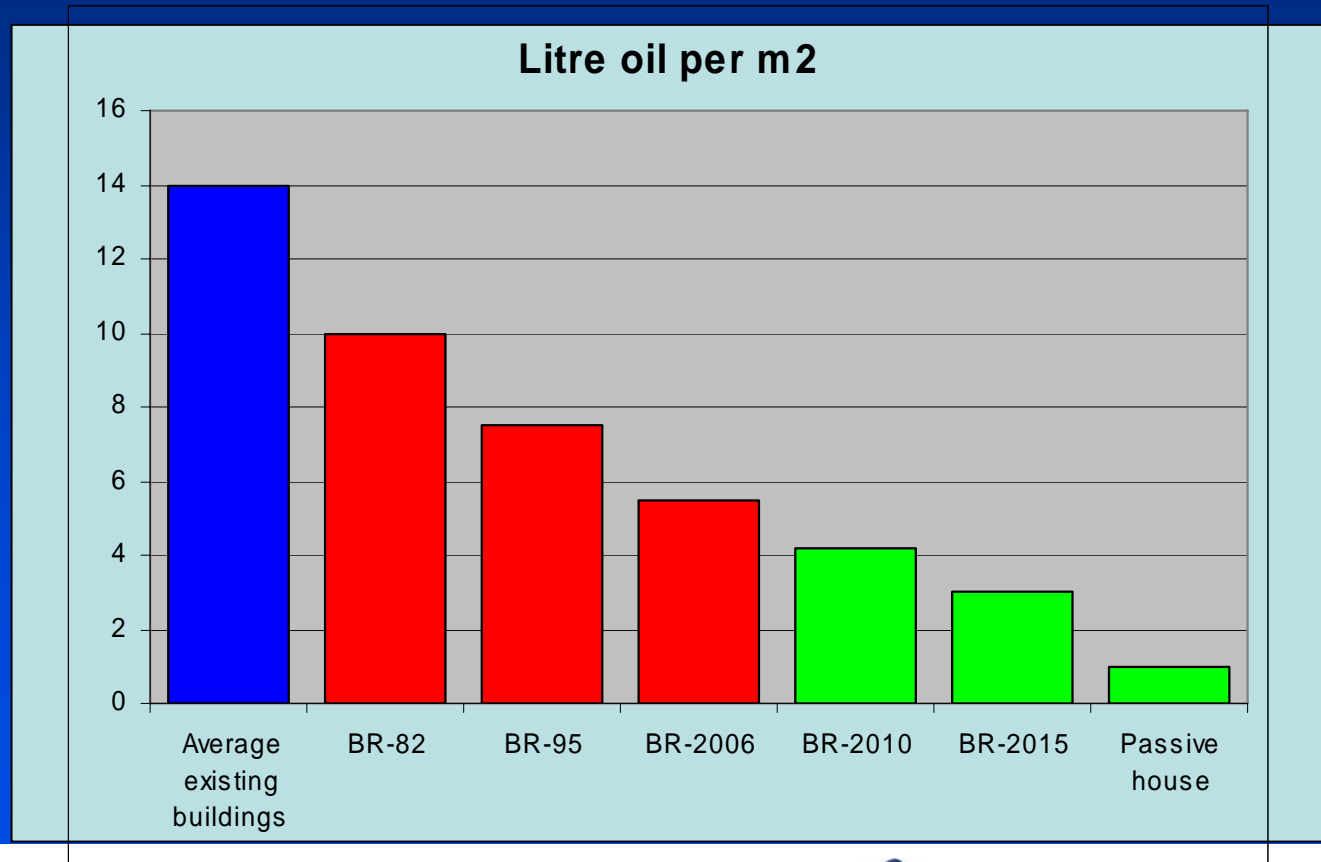
EU Energy Policy Directives

- General framework
- Quantitative targets for EU total + states
- Details for implementation decided by member states

- Target areas for EE Policy

- Increase energy conversion efficiency in power, heat and gas supply
- Increase EE in production processes
- Increase EE of buildings (building envelope, appliances, e-supply)
- Increase EE in transport
- Promote RE-based distributed energy supply
- Switch consumption towards less energy intensive goods
- Change consumer behavior to less energy use

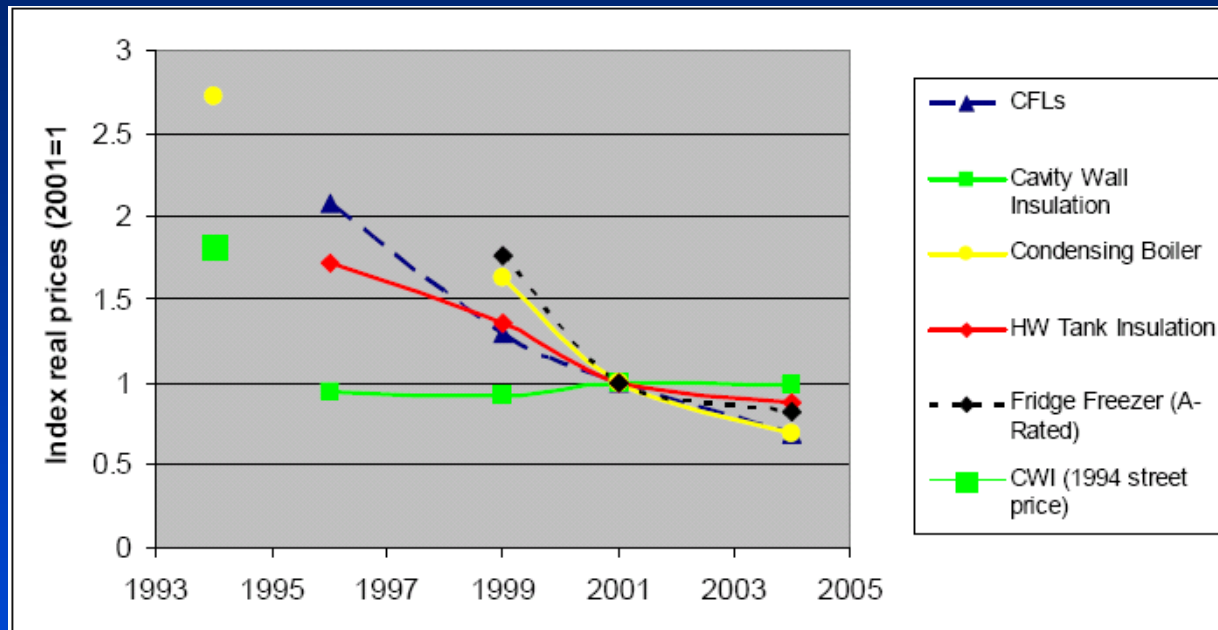
- Challenge for EE Policy for Buildings:
- Presently existing buildings in Germany use on average three times as much energy as standard in latest building code (below Denmark)
- 85% of building stock in use in EU in 2030 have been constructed already



- Since early 2000's: **PARADIGM SHIFT** in RE&EE policies
 - The goal is not to make existing markets more efficient, the objective is **MARKET TRANSFORMATION** (= re-arrangement of institutional roles). Scale of EE challenge is too large for conventional tools
 - Background: change towards low-carbon economy while protecting industrial competitiveness
 - Catchword is integration of services:
 - energy supply companies are to become energy service companies
 - in construction of buildings optimised solutions integrating the building envelope, the electrical & lighting system and the energy supply and conversion systems;

- Economic drivers for EE & RE Policy
 - Policies are economically beneficial if they lead to:
 - Better resource allocation (= higher national productivity)
 - Exploitation of under-utilized national resources (= higher national employment)
 - There is in all countries a substantial commercially viable EE potential which is not exploited for various reasons.
 - EE&RE measures that have a higher market price than the market value of savings in conventional fuels can be economic also due to
 - Employment impact of EE&RE policies is higher in oil&gas exporting countries than in fuel importing countries (provided an adequate national production content policy for RE&EE is implemented)
 - dynamic efficiency from learning curves + spill-over effects

- Focus on Energy Efficiency in Supply or in Final Use?



Source: Eoin Lees (2006)

- Categorization of policy instruments by how they work:
 1. Command and control instruments
 - Regulation
 - Minimum standard standards
 2. Market-instruments:
 - Tradable energy saving certificates (white certificates)
 - Support to know-how building:
 - Information
 - TA
 - Public support to R&D
 - Financial incentives:
 - Investment grants (direct or tax credits)
 - Soft loans
 - Taxes on fossil fuels (or on carbon content)

- Categorization of EE- instruments by target:
 1. Remove bad practices
 - regulation
 - standards
 2. Promote good practices
 - incentives
 - labelling and other information services
 3. Do things better and cheaper
 - R&D
 - Public procurement of new “clean technologies”
 - Market transformation through innovative deployment
 - Capacity building

- MARKET TRANSFORMATION: promoting "neutral" TA-intermediaries
 - "Passive" EE&RE advisory offices
 - "third party financing" / ESCOs
 - Turning energy supply companies into energy service companies
 - French scheme with mandated EE targets and white certificate scheme
 - Danish scheme with negotiated EE targets and no certificate scheme

- **Strategy for private buildings:**
 1. **Building codes - minimum performance standards**
 - for new construction
 - for existing building stock when changes are introduced (in Germany only 2% of annual investments in modernization of building stock are energy related)
 2. **Energy labelling**
 - Standard “A-F” classification for existing buildings + report with list on cost-effective investments in EE)
 - Normative “high-EE” labels for advanced EE-new buildings to create niche market for new approaches and technologies
 3. **Advisory offices for RE&EE in buildings**

- Strategy for publicly owned buildings:
 1. Contracting
 - energy saving contracting
 - energy supply contracting
 2. Mandated targets for realising EE potential in public buildings

- Promoting roof-top RETs

- In promotion of solar water heater systems, policy has been mainly on the supply side: testing for better equipment, identifying standardised, cheaper ways to install SWHs and training installers. Demand side policies have the "conventional" of investment grants
- German policy for PV of combining generous feed-in-tariff with low-interest rate loans for investments in PV re-confirms the "explosive" market-expanding impact of that policy. More than 70% of installed PV-capacity in 2006 worldwide was installed in Germany