

ENERGY EFFICENCY

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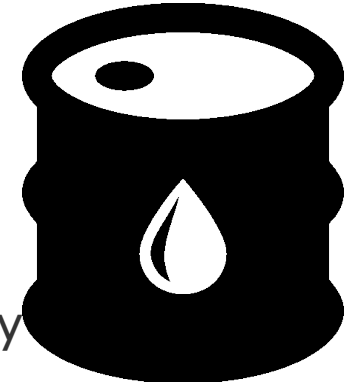
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By using energy more efficiently Europeans can lower their bills, reduce their reliance on external suppliers of oil and gas and help protect the environment.

- Energy efficiency has to be increased at **all stages** of the energy chain from generation to final consumption.
- The benefits of energy efficiency must **outweigh the costs**, for instance those involved in renovations
- EU measures therefore focus on sectors where the potential for savings is greatest such as **buildings**.



PAST



► History:

- European integration in the field of energy policy did not develop too smoothly:
 1. the importance of coal and therefore the ECSC diminish (with oil becoming the most important energy source)
 2. Differences in energy mixes, transport routes or structures of energy markets
- differing interests of the Member States hindering energy policy cooperation.
- Many of the more ambitious plans of the European Commission for a coherent policy often failed in the face of opposition from Member States.



► Development

1. The 1960s were characterised by a focus on the nation-state level.
2. A push towards energy cooperation was triggered by the oil crises in 1973/74. Resulting the "Council of Resolution concerning a new energy policy strategy for the Community" in 1974
3. Energy goal for 1985
4. Advancement of common energy policies usually came via economic routes, though this changed slightly with the inclusion of environmental protection into the Single European Act in 1987.
5. The Commission failed in their attempt to include a separate energy chapter into the "Treaty of Maastricht" in 1992 (vetoed by member states)
6. Important energy regulation, such as the Renewables Directives (2001 and 2003) and the introduction of emissions trading in 2005 were based on environmental regulation
6. It wasn't until March 2007 that EU heads of state and governments endorsed the first EU "energy action plan".
7. The Lisbon Treaty finally included a title on energy. The article 12 first refers to the "functioning of the internal market".

Referring to the article:

- (a) ensure the functioning of the energy market;
- (b) ensure security of energy supply in the Union;
- (c) promote energy efficiency and energy saving and the development of new and renewable forms of energy;
- (d) promote the interconnection of energy networks

PRESENT

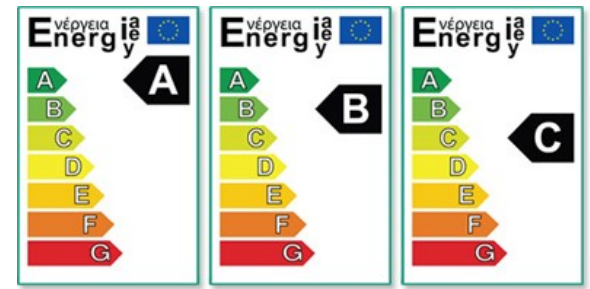
► Targets and policies (EU 2020)

- 20% energy savings target by 2020 (roughly equivalent to turning off 400 power stations)



- Measures:

1. annual reduction of 1.5% in national energy sales
2. efficient renovations to at least 3% of buildings owned by governments
3. mandatory energy efficiency certificates accompanying the sale and rental of buildings
4. minimum energy efficiency standards and labelling for a variety of products



- **Energy efficient products**

- **Energy labelling:** Energy labels help consumers choose energy efficient products (Companies can create their own labels for energy efficiency)
- **Ecodesign:** Ecodesign regulations require manufacturers to decrease the energy consumption of their products by establishing minimum energy efficiency standards

- **Buildings**

Buildings are responsible for 40% of energy consumption and 36% of CO₂ emissions in the EU.

- **Financing energy efficiency**

The scale of investment needed to meet the EU's 2020 energy efficiency target is estimated at around **€100 billion per year**. The EU has increased the amount of public funds available for energy efficiency (Horizon 2020, etc..)



- PROGRESS MADE ON 2020 ENERGY EFFICIENCY TARGET

- According to a new report published on November 18th by the European Commission:

- final energy consumption **decreased** by 7%
- primary energy consumption **decreased** by 8%
- The largest cut in energy consumption was made in industry, where energy use was cut by 15%
- In the residential sector energy consumption **decreased** by 3%
- in the transport sector a 6% **reduction** was made
- In the services sector, final energy consumption **increased** by 6%

The report stated that EU countries will need to do more if the 20% energy efficiency target for 2020 is to be met.



FUTURE



► ENERGY TRENDS UP TO 2050

- this publication (EU ENERGY, TRANSPORT AND GHG EMISSION) was prepared for the Directorate-General for energy, Directorate General for climate action, and the Directorate-General for mobility and transport;
- This report is an update and extension of the previous trend scenarios for development of energy systems taking account of transport and GHG emissions developments ;

EU SCENARIO

- ✓ The Reference 2013 scenario includes all binding targets set out in EU legislation regarding development of renewable energies and reductions of greenhouse gas (GHG) emissions;
- ✓ balances represent the starting point for projections which are presented from 2015 onwards in 5 years' steps until 2050. Good feedback in the end.

RESULTS OF THE SCENARIO



Guidelines for 2050

- ❖ Decarbonisation of the energy system is technically and economically feasible;
- ❖ Energy Efficiency and renewable energy are critical;
- ❖ Early Investments cost less;
- ❖ Contain the increase of prices;
- ❖ Economies of scale are needed.





► OUR POSITION

- People would voluntary do it without regulations?

- actual levels of savings derived from behavioral energy efficiency are 2-3% behavioral programmes (Denmark, Italy, Ireland), Citizenergy portal
 - new generation (awareness, responsibility), education, personal choice

- **Green buildings: we have incorrect information about it?**

- Disadvantages (Indoor Air Quality → we are literally choking on the indoor pollution, recycled product containing chemicals; florescent lights → are known to emit more radiation)

- **Why spend money for energy efficiency while there is a high rate of unemployment?**

- one of the most economically effective means of combatting climate change
- Long-term benefit

- **Conflict of interest: opposition from big suppliers of electricity and petrol**

- Lobbies and companies

- **Political issue: countries don't want lot of regulations. It is better to let them decide "how" (only providing "what") or provide "how" and "what"?**

- Flexibility