

# **Energy Efficiency in Lighting & Project of EU Quality Charter for LED lighting**

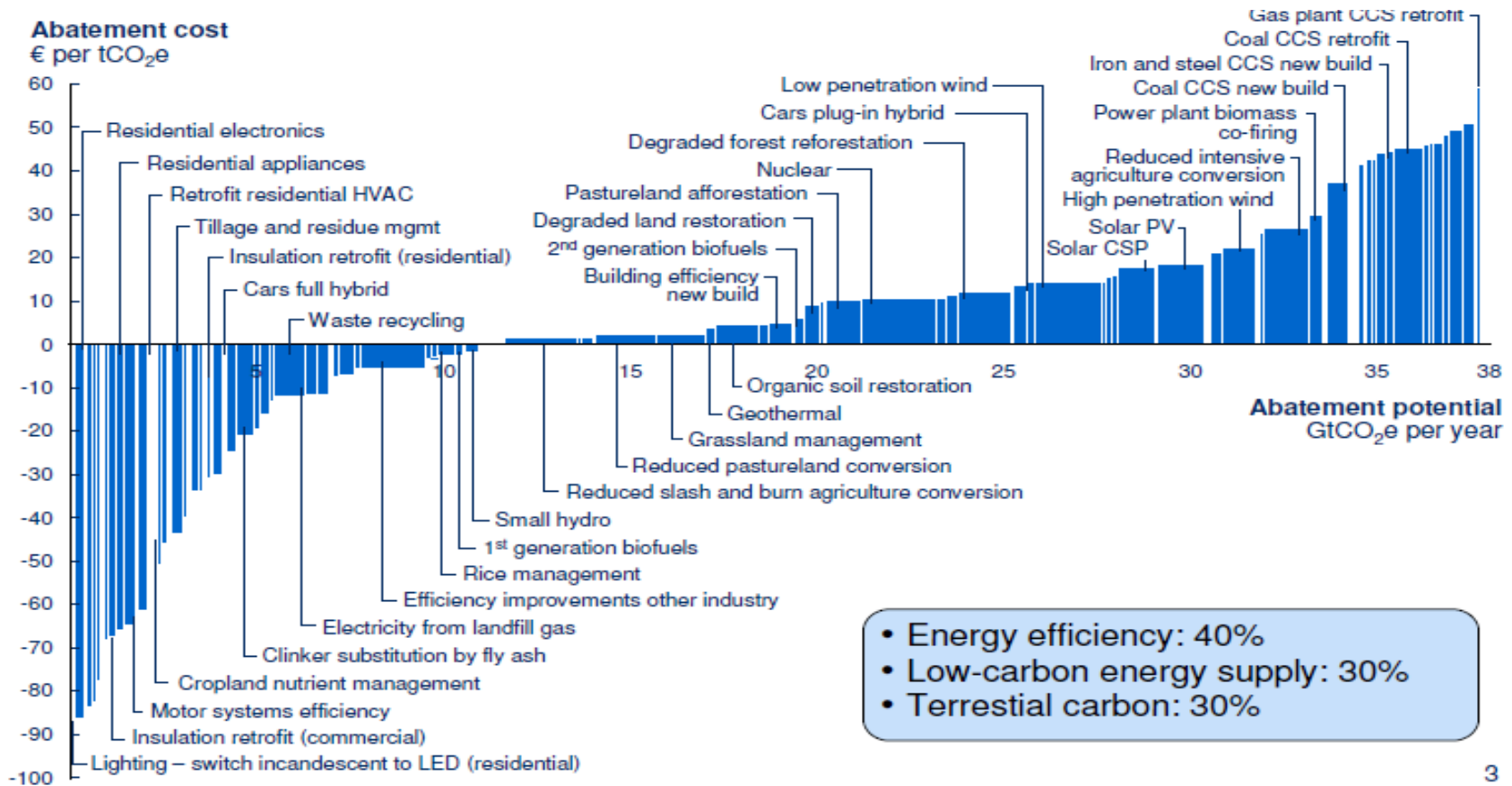
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End-use efficiency is recognised as the fastest and cheapest way to reduce CO<sub>2</sub> emissions by 2020.



Note: The curve presents an estimate of the maximum potential of all technical GHG abatement measures below €60/tCO<sub>2</sub>e if each lever was pursued aggressively. It is not a forecast of what role different abatement measures and technologies will play.

# EU Key Climate and Energy Objectives for 2020

By 2020 -20% **EU GHG**

By 2020 +20% **ENERGY SAVING**

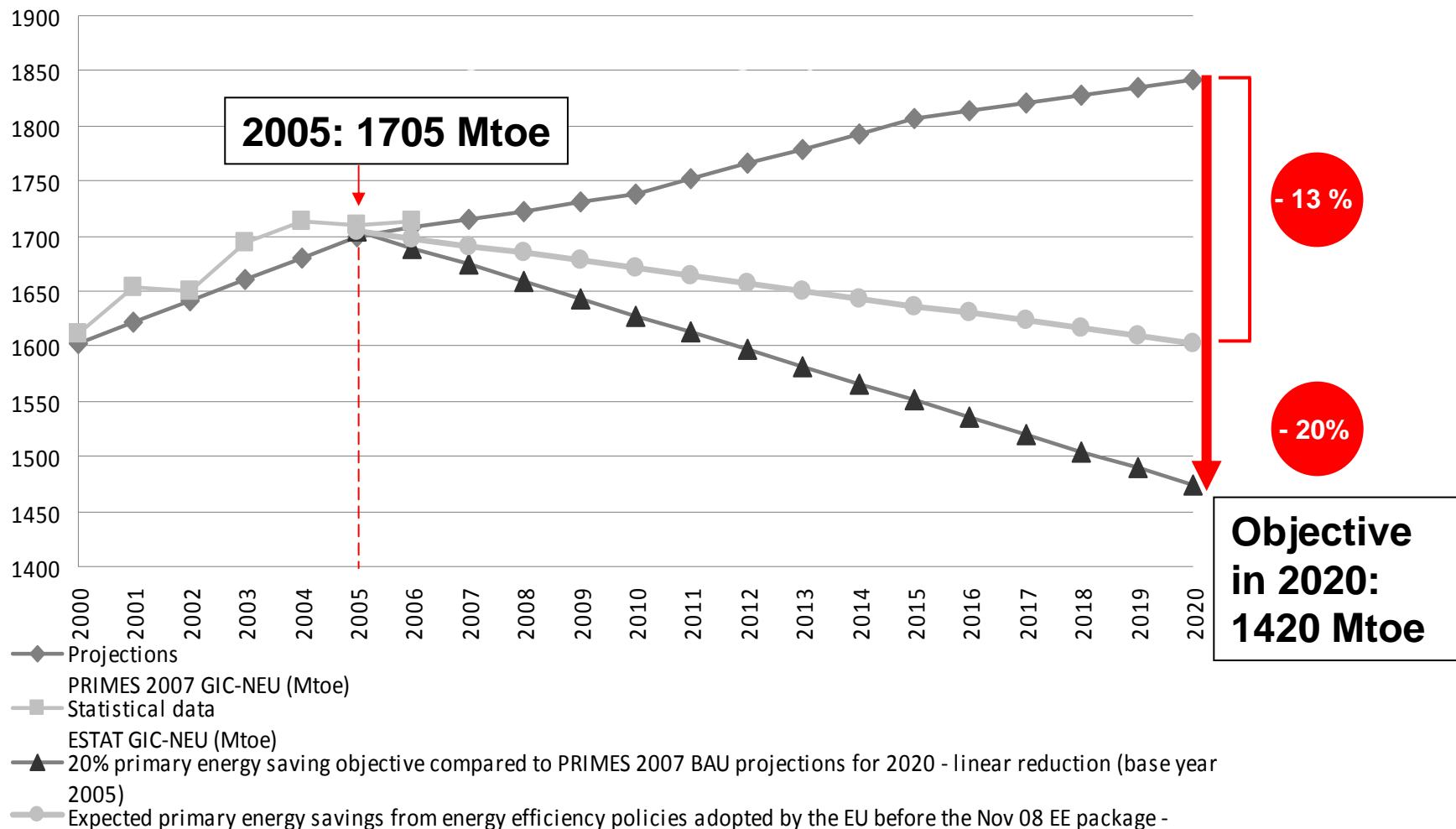
By 2020 binding 20% **RENEWABLES** in final energy consumption at EU level

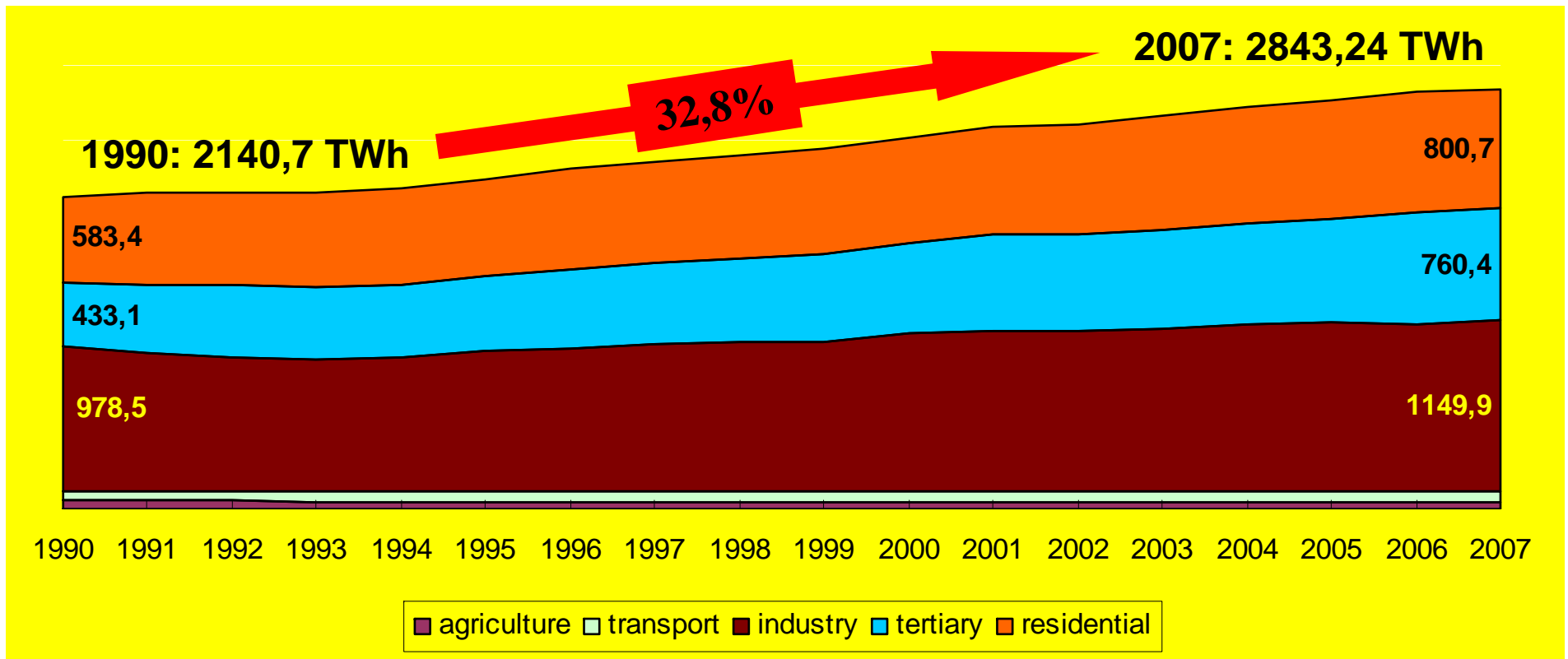
**RES in transport**  
Min 10% binding

**ELECTRICITY**  
MS binding choice

**HEATING & COOLING**  
MS binding choice

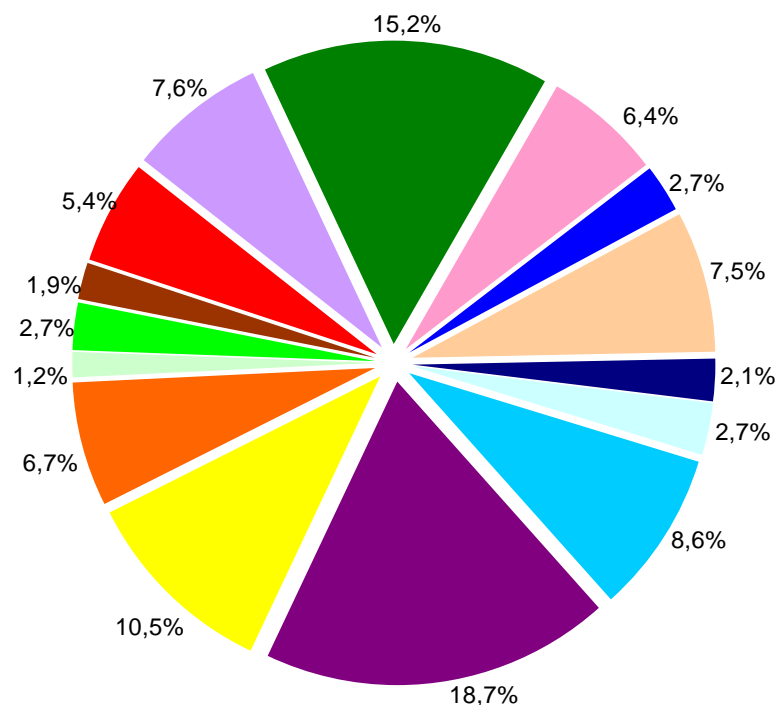
**NATIONAL TARGETS & ACTION PLANS**



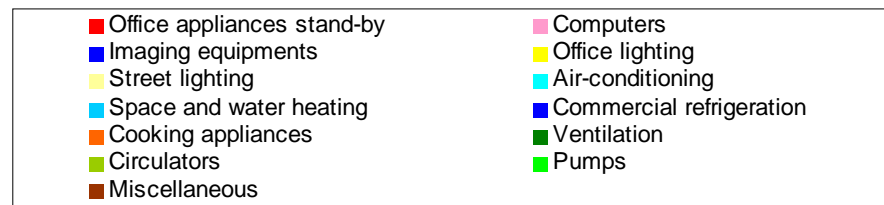
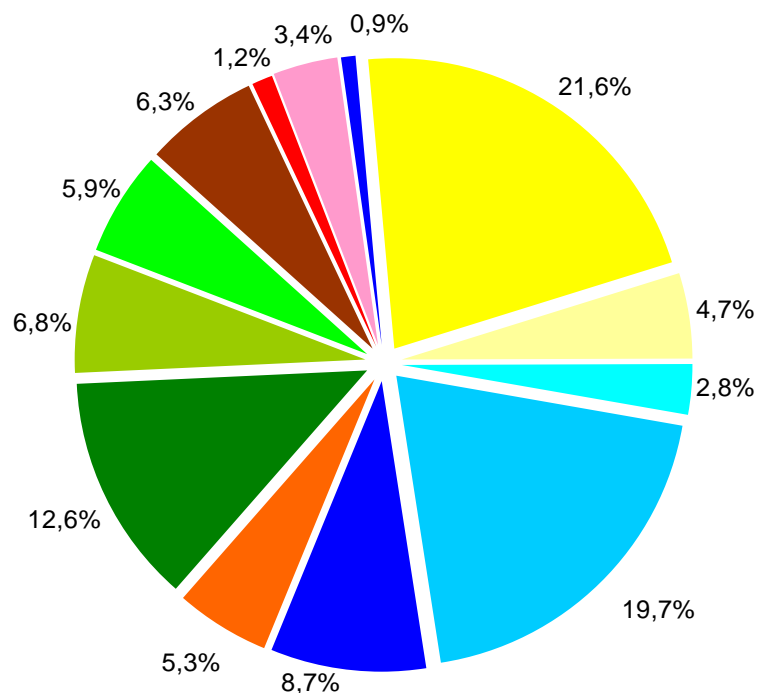


- **Residential:** 84TWh/yr in 2007
- **Tertiary - offices:** 164,5 TWh/yr in 2007
- **Street lighting:** 36 TWh/yr in 2007

**Residential, 800,7TWh in 2007**



**Tertiary, 760,43TWh in 2007**



- White-light emitting diode WLED lamps are recently becoming available on the market with increasing efficacy and increasing life-time as a result of decades of semiconductor research and development.
- For indoor (office and residential) lighting several manufacturers are developing WLED (white LEDs) lamp luminaires. The different power range and light properties are influencing new luminaire design.
- In the recent years, there has been a new trend to promote more white light sources for outdoor lighting and the Solid State Lamps (SSL or LEDs) become a very promising efficient solution on the market.
- SSL are starting to be being used in street lighting due to sharp price reduction.
- Traffic lights are already using this technology thanks to the high efficacy for coloured light.

- In street lighting, amber LEDs could be used too that offer a higher efficacy (e.g. 40 lumen/W), but a lower colour rendering. Applications where efficient coloured light is required benefit nowadays from LEDs too, e.g. traffic and other signs (applications with a low power density).
- LEDs also have perfect dimming capabilities far better than HID lamps which could be beneficial for lighting where dimming is required, like in offices and street lighting,

- JRC has been active on **CFL quality** since 1997, and it has introduced the European CFL Quality Charter, to improve quality of CFLs especially those distributed as part of utilities DSM programmes
- JRC is willing to start a European initiative on quality of LED lighting to assure the right quality level.
- LED quality is need to make sure consumer accept this technology and will not feel “cheated” by poor light quality, short life time, and other possible problems.

- **International Workshop in Stockholm on 26-27 January 2010 on LED quality**, test methods, standards, and policy support organised by JRC and STEM was the first step to organise a European LED Quality Charter
- Issues:
- LED industry is very international so need to harmonise criteria and test methods
- Other initiatives starting right now: better to work together than ending up with several different quality criteria as for CFLs. The aim of the workshop was to share this information
- **First meeting** dedicated to the **European LED Quality Charter on 4 May 2010 in Ispra (Italy)**

- There is a **large potential** to further improve energy efficiency in buildings (about 25%) in Europe and elsewhere. Lighting plays a key-role
- It requires efficient solutions and **new technologies**, including **LEDs and SSL**.
- Attention must be paid to **quality**, if we want customer to accept it
- **Policies and programmes** are needed: information (labelling), minimum efficiency standards and building regulation, and incentives (ESCO, white certificates, procurements), support for R&D, demonstration programmes such as GreenLight,

**THANK YOU!**

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<http://re.jrc.ec.europa.eu/energyefficiency/>