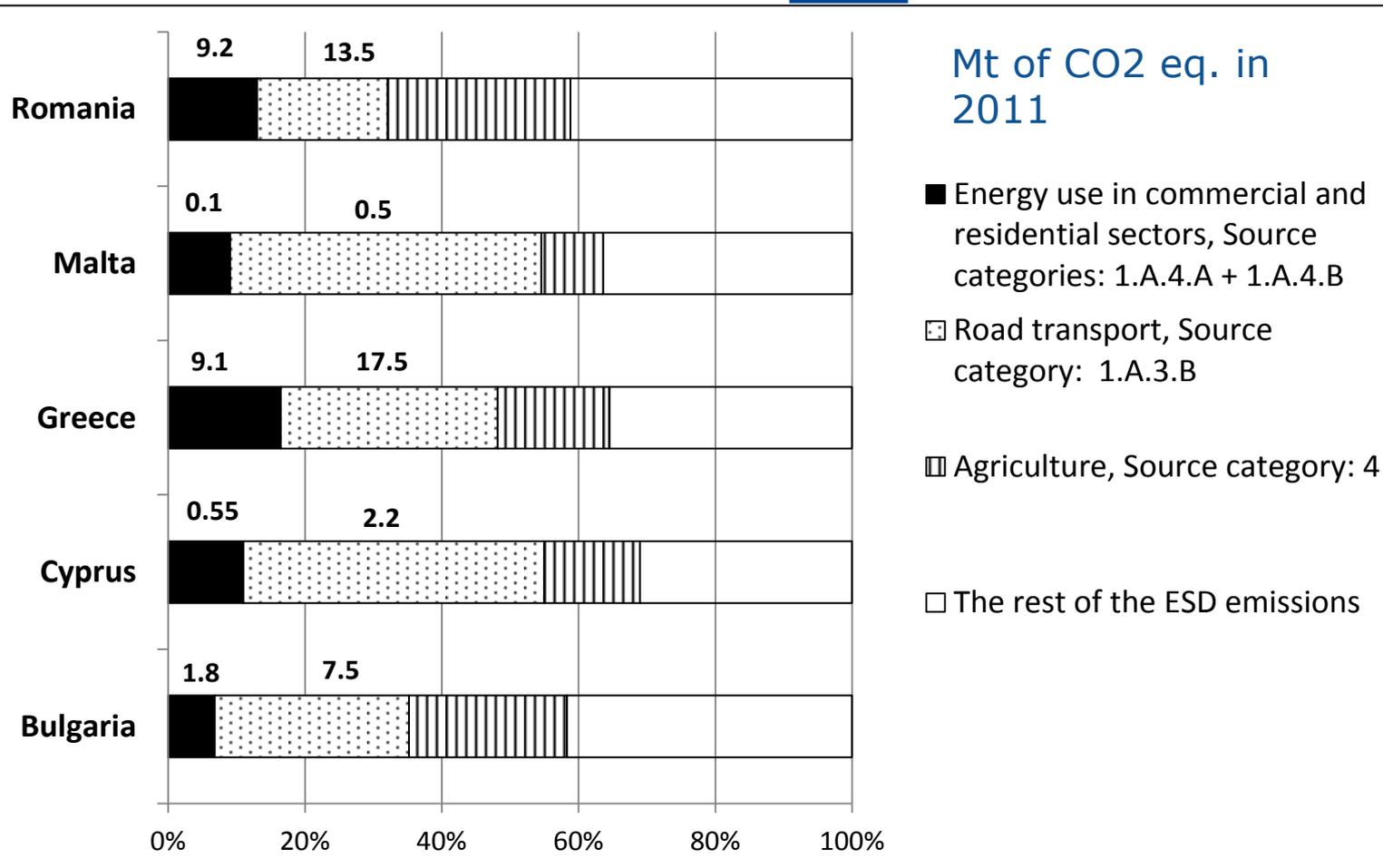


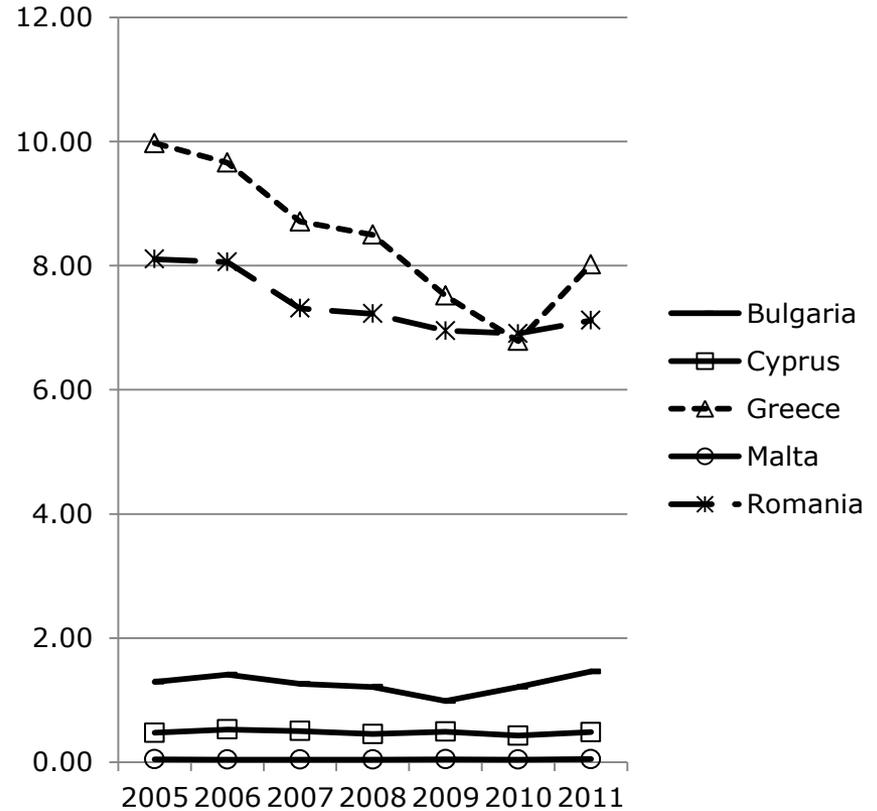
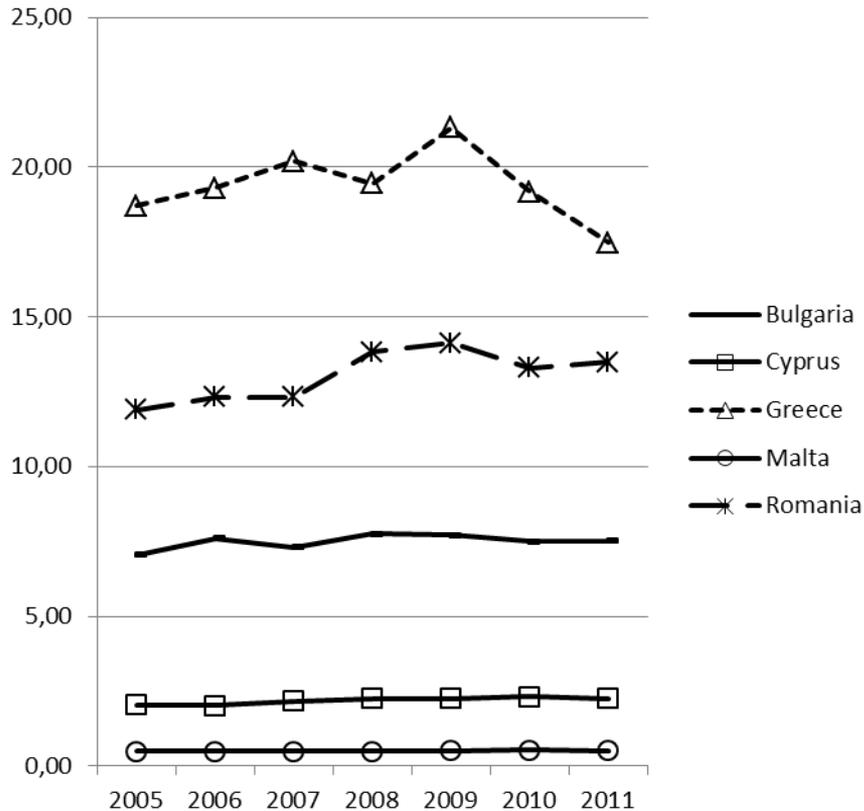


# Effort Sharing Decision

**Overview of EU policies in the  
transport and buildings sectors**



➤ Buildings and transport are responsible for 30-50% of the ESD emissions in BG, CY, GR. MT and RO. Source: EEA GHG data viewer



➤ Road Transportation (1.A.3.B. left) and Residential energy use (1.A.4.B. right) related GHG emissions in 2005 – 2011, Mt of CO<sub>2</sub> eq., source: EEA GHG data viewer

# Effort Sharing Decision

**EU policies cutting GHG emissions  
in road transport**



## Road transport emissions

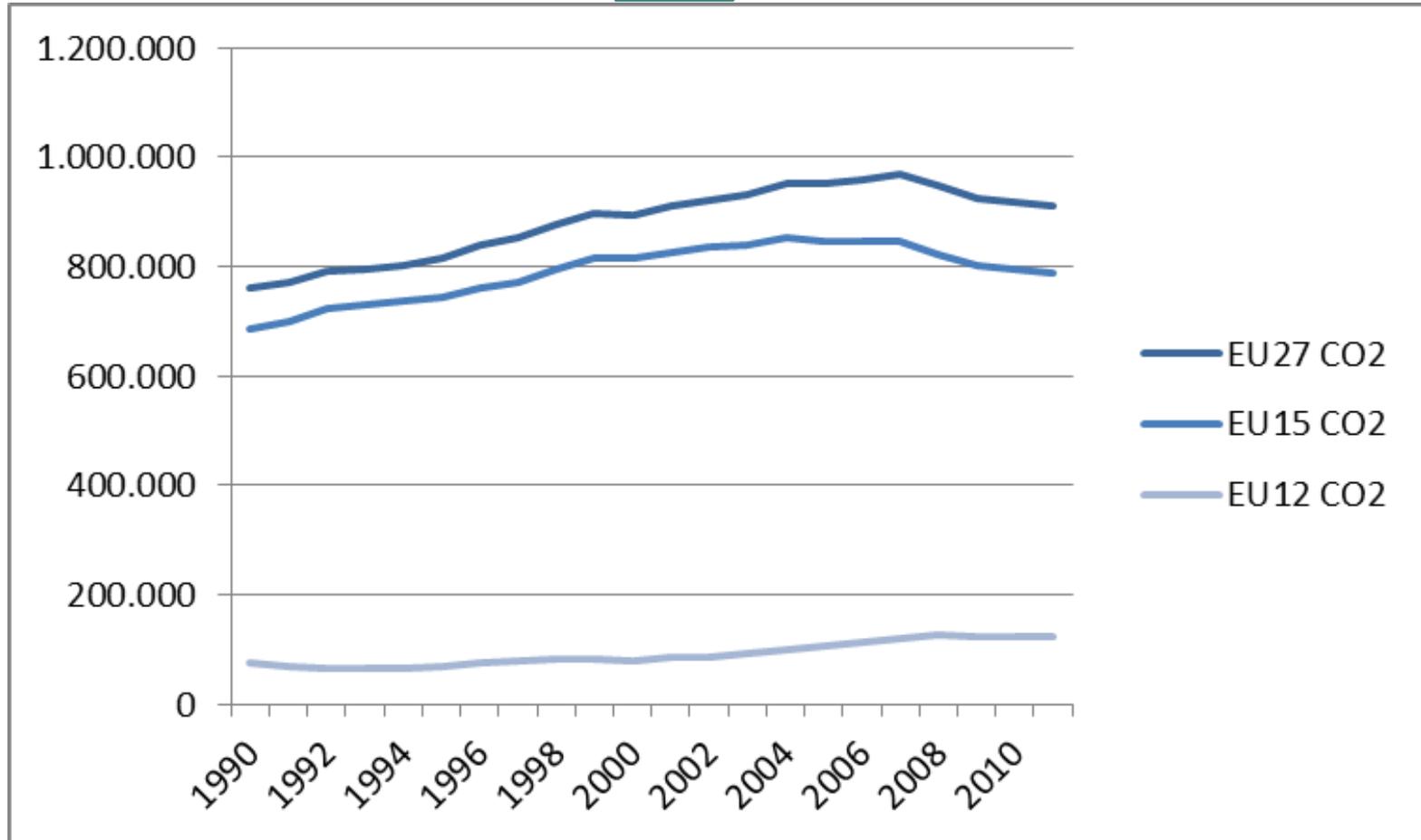
- Approx. 868 MT CO<sub>2</sub> in 2009 (*about 1/3 of all 2009 ESD emissions*)
- About 72% of all EU transport CO<sub>2</sub> emissions.  
Plus about 15% refinery emissions  $\approx$  130 MT CO<sub>2</sub>

### Of this:

- Powered two wheelers  $\approx$  1%**
- Heavy Duty Vehicles (HDV)  $\approx$  30%**
- Light Duty Vehicles (LDV)  $\approx$  70%**

Exact split LDV-HDV unknown because diesel consumed in both. Expectation is that LDV emissions are decreasing as a result of regulations while HDV emissions are probably increasing due to the absence of regulation and increasing activity.

# EU road transport CO<sub>2</sub> trends



<http://www.eea.europa.eu/publications/ghg-trends-and-projections-2012>

# Options to reduce transport GHG



- There are a wide range of options to reduce transport GHG emissions.
- Many measures can deliver GHG benefits with negative costs (i.e. benefits) to the society.
- Co-benefits are important (health co-benefits are often overlooked but can be large).
- As regards interaction between congestion and GHG, only 3 measures appear effective at reducing both – pricing, land use planning and speed.
- Need to ensure GHG properly taken into account in e.g. the Environmental Impact Assessment.
- Embedded GHG is important – it can be a large part of total GHG from construction and use.



# Technical and non-technical

**Technical** – improve energy efficiency; promote lower GHG per energy.

**Non-technical** – (1) reduce the need to travel [e.g. e-commerce, e-government; teleworking, etc.], (2) encourage shift of modes [e.g. planning and management of transport system; pricing; modal choice, etc.] and (3) encourage to be more efficient [e.g. speed limits, etc.].

**Note:** Technical options can take substantial time to have an impact due to fleet lifetime etc. Many non-technical measures can have a quicker impact since they influence all users.

## **Some options more appropriate at EU level:**

E.g. vehicle and fuel standards because of single market

## **Some options more appropriate at national or local level:**

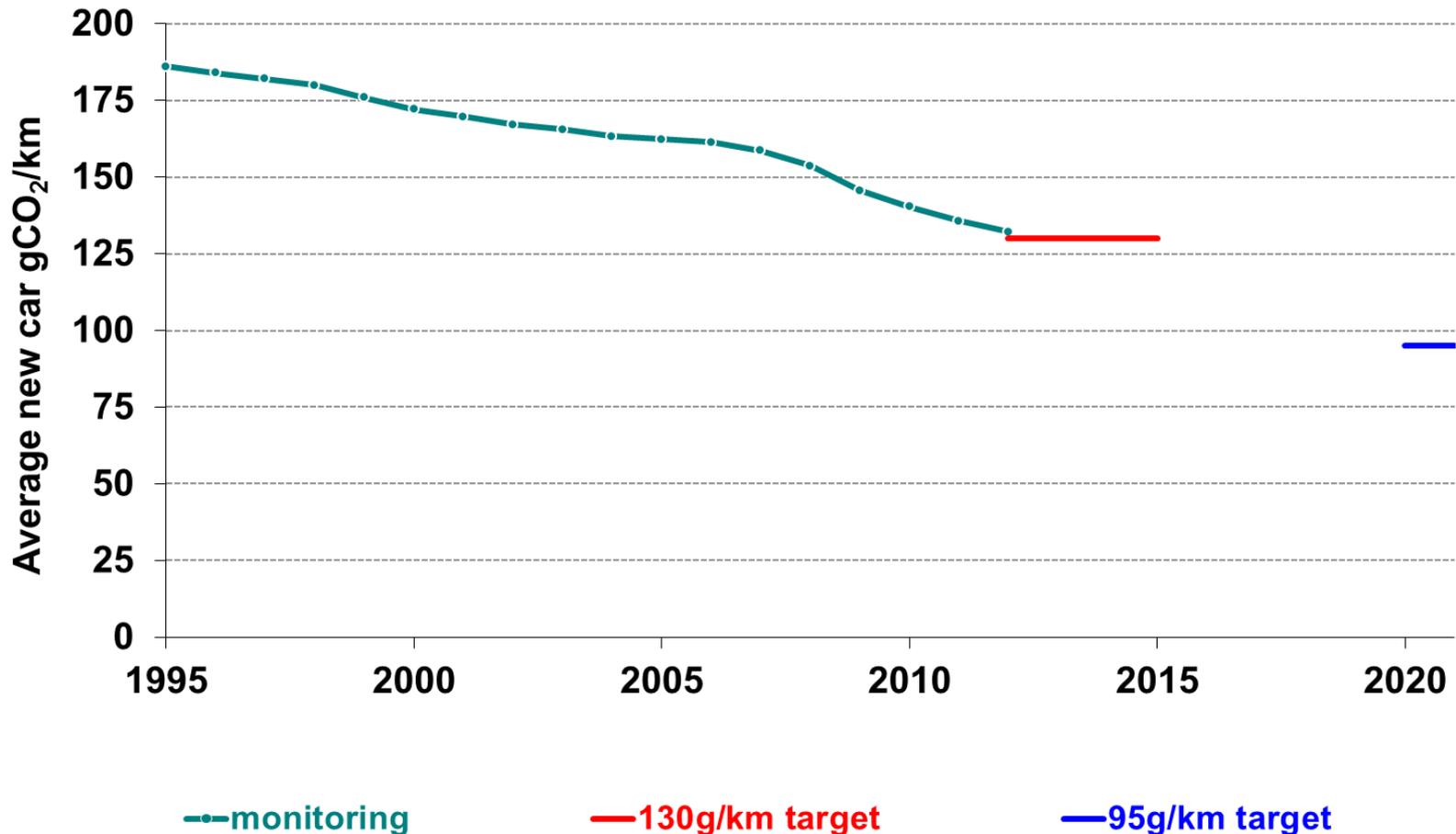
E.g. tax reform (e.g. fuel and company car), speed enforcement, lower speed limits, pricing externalities, parking policy and pricing, provision of information, improving and encouraging bus and rail transport, encouraging non-motorised transport, land use planning



## Light Duty Vehicle CO<sub>2</sub> Regulations

- Two Regulations set new vehicle average fleet CO<sub>2</sub> targets for the EU:
  - **Regulation (EC) 443/2009** establishes new car CO<sub>2</sub> targets of **130g CO<sub>2</sub>/km for 2015** and **95g CO<sub>2</sub>/km for 2021** and modalities for achieving them.
  - **Regulation (EU) 510/2011** establishes new light commercial vehicle targets of **175g CO<sub>2</sub>/km for 2017** and **147g CO<sub>2</sub>/km for 2020** and modalities for achieving them.
- These are complemented by legislation on labelling and monitoring.

## Monitoring EU new car CO<sub>2</sub> emissions





## Light Duty Vehicles CO<sub>2</sub> Regulations beyond 2020

- Regulations request the Commission to bring forward a report by December 2015 and if appropriate proposals to establish targets beyond 2020:  
*"based on an assessment of the necessary rate of reduction in line with the Union's long term climate goals..."*
- Commission has started work to prepare for post 2020 LDV Regulation proposals.
- A number of studies are underway to expand and update technical knowledge before preparation of the Impact Assessment and proposal.
- A consultation with stakeholders will be launched shortly.

## Reduction in GHG intensity of fuel used in road vehicles

- The **Fuel Quality Directive (EC) 2009/30** imposes a binding target on (fossil) fuel suppliers to reduce life cycle GHG emissions from fuel supplied by 6% by 2020.
- Implementation of the provisions to bring this into force is on-going.



- There is a lot of potential to reduce transport GHG emissions at low cost while bringing other important societal benefits.
- Technical measures largely more applicable at EU level – single market.
- Many non-technical measures more readily applicable at local/national level
- Any additional EU-wide technical legislation (beyond those already adopted) would not have significant effect on overall emissions before 2020.
- Non-technical transport measures have more rapid effect and there is a considerable scope for additional measures at Member State level that could reduce emissions by 2020



## Links to some relevant EU policies and studies

### DG CLIMA web pages:

Transport: [http://ec.europa.eu/clima/policies/transport/index\\_en.htm](http://ec.europa.eu/clima/policies/transport/index_en.htm)

Road: [http://ec.europa.eu/clima/policies/transport/vehicles/index\\_en.htm](http://ec.europa.eu/clima/policies/transport/vehicles/index_en.htm)

Cars: [http://ec.europa.eu/clima/policies/transport/vehicles/cars/index\\_en.htm](http://ec.europa.eu/clima/policies/transport/vehicles/cars/index_en.htm)

LCVs: [http://ec.europa.eu/clima/policies/transport/vehicles/vans/index\\_en.htm](http://ec.europa.eu/clima/policies/transport/vehicles/vans/index_en.htm)

### *EU transport GHG: Routes to 2050?* Project

Main page: [www.eutransportghg2050.eu](http://www.eutransportghg2050.eu)

Reports: <http://www.eutransportghg2050.eu/cms/reports/>

### Papers on non-technical options to reduce transport GHG:

<http://www.eutransportghg2050.eu/cms/assets/EU-Transport-GHG-2050-Paper-4-Operational-options-18-12-09-FINAL.pdf>

<http://www.eutransportghg2050.eu/cms/assets/EU-Transport-GHG-2050-Paper-5-Modal-split-and-decoupling-options-22-12-09-FINAL.pdf>

<http://www.eutransportghg2050.eu/cms/assets/EU-Transport-GHG-2050-Paper-7-Economic-Instruments-9-01-10-FINAL.pdf>

<http://www.eutransportghg2050.eu/cms/assets/EU-Transport-GHG-2050-Paper-8-Infrastructure-08-03-10-FINAL.pdf>

<http://www.eutransportghg2050.eu/cms/assets/EU-Transport-GHG-2050-Paper-9-Awareness-and-innovation-19-11-09-FINAL.pdf>

### DG MOVE urban mobility web pages:

[http://ec.europa.eu/transport/themes/urban/ump\\_en.htm](http://ec.europa.eu/transport/themes/urban/ump_en.htm)

### Sustainable Urban Mobility Plans:

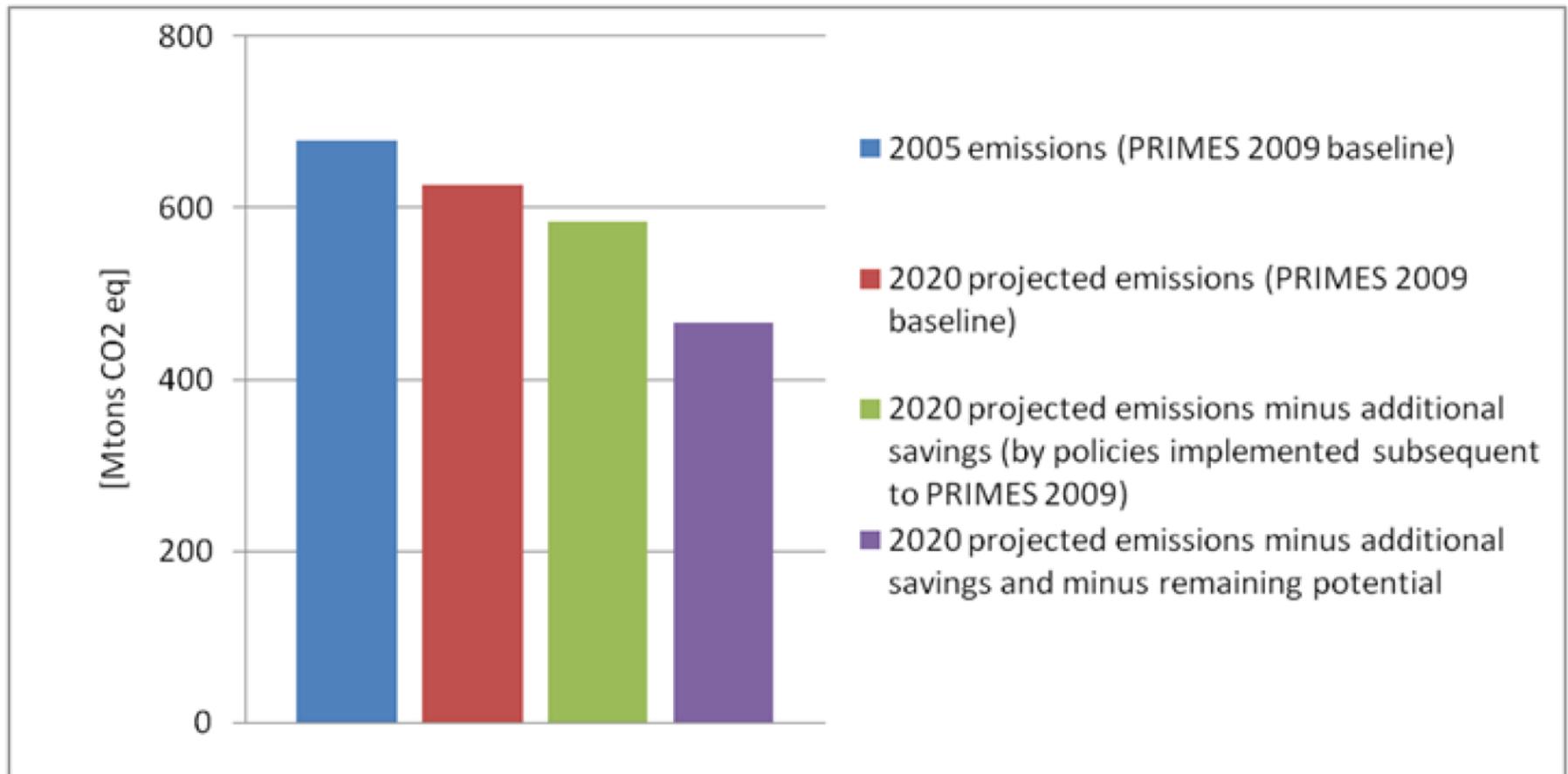
[http://ec.europa.eu/transport/themes/urban/doc/ump/com\(2013\)913-annex\\_en.pdf](http://ec.europa.eu/transport/themes/urban/doc/ump/com(2013)913-annex_en.pdf)

# Effort Sharing Decision

**Overview of EU policies and  
measures in the buildings sector**

- The EU building sector includes both the non-residential (services) and residential sectors. The European building sector accounts for 40 % of the total energy use and for 36 % of Europe's CO2 emissions.
- Only direct emissions related to the combustion of fossil fuels are covered by the ESD. Electricity and district heating related emissions are mostly covered by the EU ETS.

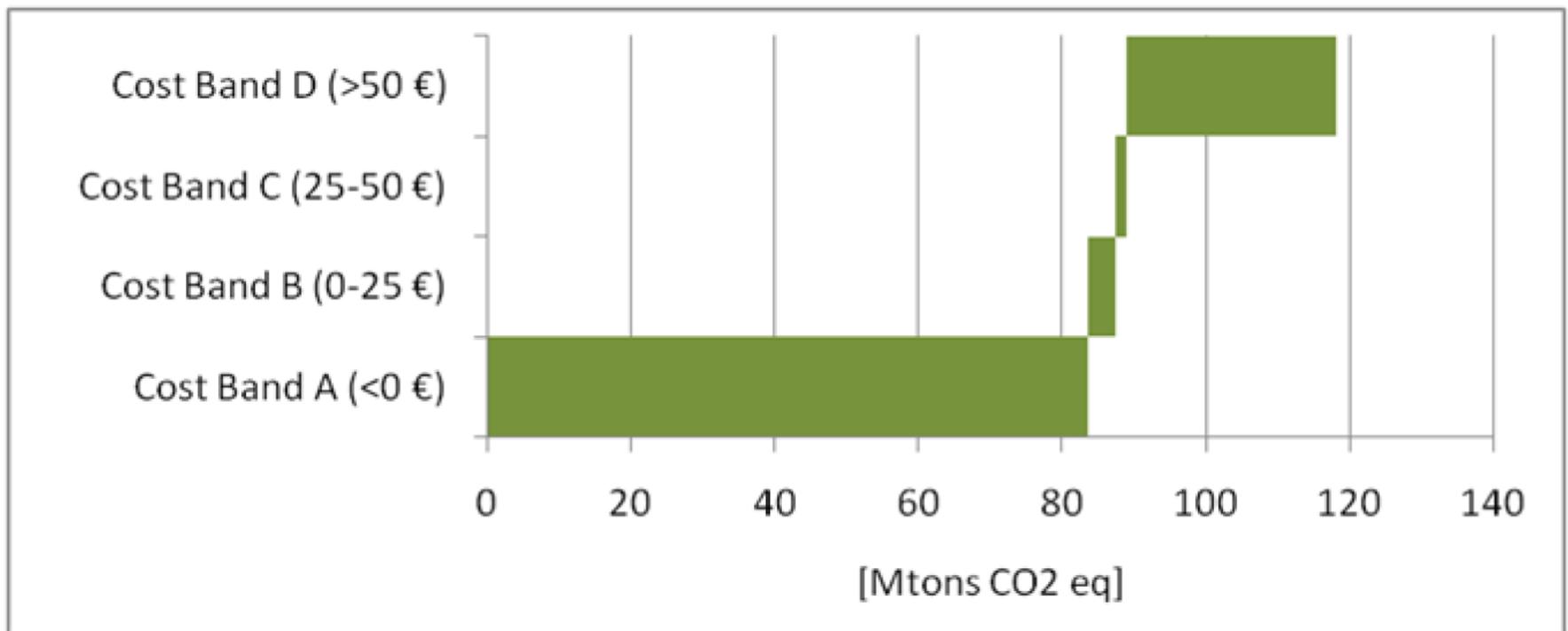
**Figure 1: Emissions and abatement potential in the building sector**



Source: Calculations by Ecofys on base of the SERPEC data

- Abatement potential is rather significant in the EU (Source: AEA report).

**Figure 2: Abatement potential and cost bands of the underlying options in the building sector in the EU 27 (residential and non-residential) in 2020. The abatement potential is relative to the baseline (PRIMES 2009 plus policies implemented subsequent to PRIMES until June 2010).**



Source: Calculations by Ecofys based on SERPEC data

- Significant share of the abatement potential in buildings comes at below zero cost, i.e. it's profitable (Source: AEA report)

- Most of building sector policy making takes place in Member States and regional and local authorities therefore sound local / regional / Member State policies are very important.
- The EU is supporting Member States to achieve emission reductions in building sectors via mainly energy efficiency measures:
  - Directive 2010/31/EU on the energy performance of buildings.
  - Directive 2012/27/EU on energy efficiency
  - Eco-design and energy labelling Directives 2009/125/EC and 2010/30/EU and other legal acts

## Directive 2010/31/EU on the energy performance of buildings

- Member States are to adopt, either at national or regional level, a methodology for calculating the energy performance of buildings and minimum requirements for energy performance with a view to achieving cost-optimal levels;
- When undergoing major renovation, existing buildings are to have their energy performance upgraded so that they also satisfy the minimum requirements;
- Building elements that form part of the building envelope and have a significant impact on the energy performance of that envelope (for example, window frames) are to also meet the minimum energy performance requirements.

## Directive 2010/31/EU on the energy performance of buildings

- By 31 December 2020, all new buildings shall be "nearly zero-energy buildings". New buildings occupied and owned by public authorities shall comply with the same criteria by 31 December 2018;
- Member States had to implement by January 2009 at the latest, a system for energy performance certification that includes information on the energy performance of a building and recommendations for cost improvements;
- As of 9 January 2013 at the latest, when a building or building unit is offered for sale or for rent, the energy performance indicator of the energy performance certificate shall be included in advertisements in commercial media.

## Directive 2012/27/EU on energy efficiency

- Building renovation (Article 4): Member States shall establish a long-term strategy for mobilising investment in the renovation of the national stock of residential and commercial buildings (by 30 April 2014);
- Exemplary role of public bodies' buildings (Article 5): central governments as from 1 January 2014 shall renovate annually a 3% of the surface area of the buildings they own and occupy;
- Purchasing by public bodies (Article 6): if products, services & buildings are purchased, they should have a high energy efficiency performance.
- Interpretative notes on the key provisions of the Directive:
  - »Article 5: Renovation of central government buildings
  - »Article 6: Public procurement

## Directive 2012/27/EU on energy efficiency

- Energy efficiency obligation schemes (Article 7): Member States will need to achieve average annual energy savings in the amount of 1.5% on energy sales by obliging utilities to implement energy efficiency measures with the final users. Member States have the possibility to propose alternative energy savings mechanisms that lead to the same results.
- Removal of regulatory and non-regulatory barriers to energy efficiency (Article 19): Member States are to remove the split of incentives between the owner and the tenant and other barriers inhibiting improvements of energy efficiency.
- Interpretative notes on the key provisions of the Directive:
  - »Article 7: Energy efficiency obligations (or alternatives)

## Eco-design and energy labelling Directives 2009/125/EC and 2010/30/EU

- Suppliers are to place on the market products that have a label containing information on the product's consumption of energy
- Before being placed on the market, all products must undergo conformity assessment concerning all of the Eco-design requirements.
- A number of eco-design and energy labelling regulations help to reduce GHG emissions covered by the ESD such as:
  - Commission Regulation (EU) No 813/2013 with regard to eco-design requirements for space heaters and combination heaters
  - Commission Delegated Regulation (EU) No 811/2013 with regard to the energy labelling of space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar device and others.



## What would be helpful for achieving emission reductions in the ESD sectors?

- Sound and ambitious methodology adopted for calculating the energy performance of buildings and minimum requirements;
- Effective enforcement of minimum requirements for building renovation;
- Ambitious strategy for mobilising investment in the renovation of the building stock adopted and implemented;
- Use of energy efficiency obligation schemes not only for improving energy efficiency but also for reducing GHG emissions in the ESD sectors;
- Removal of regulatory and non-regulatory barriers to energy efficiency in buildings;
- Effective market surveillance to ensure product compliance with eco-design and energy labelling regulations.



## **Links to some relevant EU policies and studies**

**DG CLIMA web pages:**

**AEA and other reports:** [http://ec.europa.eu/clima/policies/effort/studies\\_en.htm](http://ec.europa.eu/clima/policies/effort/studies_en.htm)

**DG ENER web pages:**

**Energy efficiency page:** [http://ec.europa.eu/energy/efficiency/index\\_en.htm](http://ec.europa.eu/energy/efficiency/index_en.htm)

**Energy efficiency in buildings page:**

[http://ec.europa.eu/energy/efficiency/buildings/buildings\\_en.htm](http://ec.europa.eu/energy/efficiency/buildings/buildings_en.htm)

**Financing energy efficiency page:**

[http://ec.europa.eu/energy/efficiency/financing/financing\\_en.htm](http://ec.europa.eu/energy/efficiency/financing/financing_en.htm)

**Energy Efficiency Directive (EED) page:**

[http://ec.europa.eu/energy/efficiency/eed/eed\\_en.htm](http://ec.europa.eu/energy/efficiency/eed/eed_en.htm)

**EED guidance documents:**

[http://ec.europa.eu/energy/efficiency/eed/guidance\\_notes\\_en.htm](http://ec.europa.eu/energy/efficiency/eed/guidance_notes_en.htm)

**The European portal for energy efficiency in buildings:** <http://www.buildup.eu/>