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# Mitigating climate change: renewables in the EU Vol.2

**Deliverable of the WPK 755 RE-PORT**

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## The report features:

**CO2 emissions 1990-2015**  
**GHG emissions 1990-2015**  
**EU energy system overview**  
**GHG saving through RES 2009-2014**  
**RES deployment 2009-2015**

**European Union outlook**  
**Country snapshot**

**New**  
**GHG emission saving 2015 proxy**  
**Fossil fuels displacement by RES**

JRC SCIENCE FOR POLICY REPORT  
Mitigating climate change:  
renewables in the EU

*Cutting greenhouse gas  
emission through  
renewables – Volume 2*

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# Key points – are renewables working?

The EU is set **to meet its 2020 decarbonisation goal**, thanks in part to changes in its energy mix.

**Fossil fuels** continue to make up the lion's share of the EU's gross domestic energy consumption;

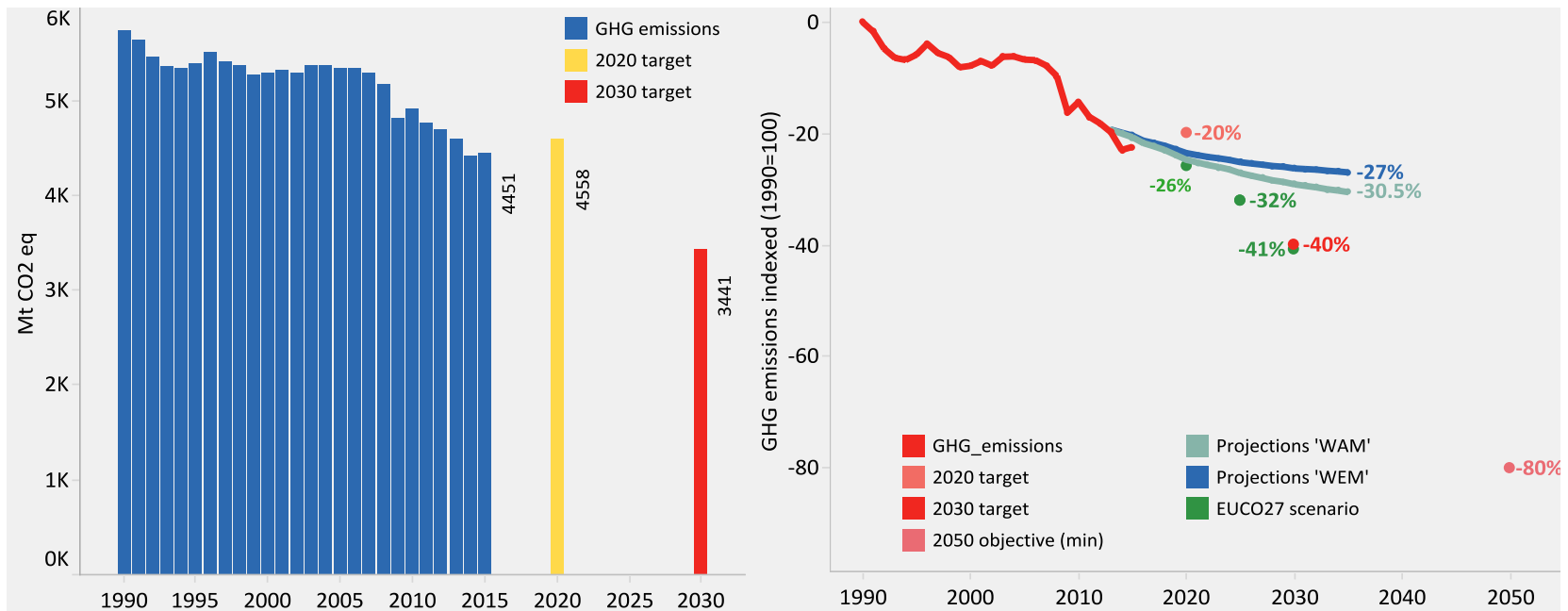
The shift in the energy fuel mix continues, with **renewables spearheading the transformation in the electricity sector**;

Between 2014 and 2015 the EU's GHG emissions remained virtually static as **renewables gradually start displacing more gas than coal**.

The **electricity sector accounts for almost two-thirds** of total GHG emission savings in the EU and **for nearly 40% of total fossil fuel displacement thanks to its use of renewables**.

# GHG emissions in the EU, 2015

CO2 emissions (fuel combustion and cement industry) -21% below 1990  
 Greenhouse gas emissions fell by -22.1% compared with 1990  
 Effort Sharing Decision emissions (ESD) remained below the 2015 target  
 EU ETS emissions -24.4% below 2005 level

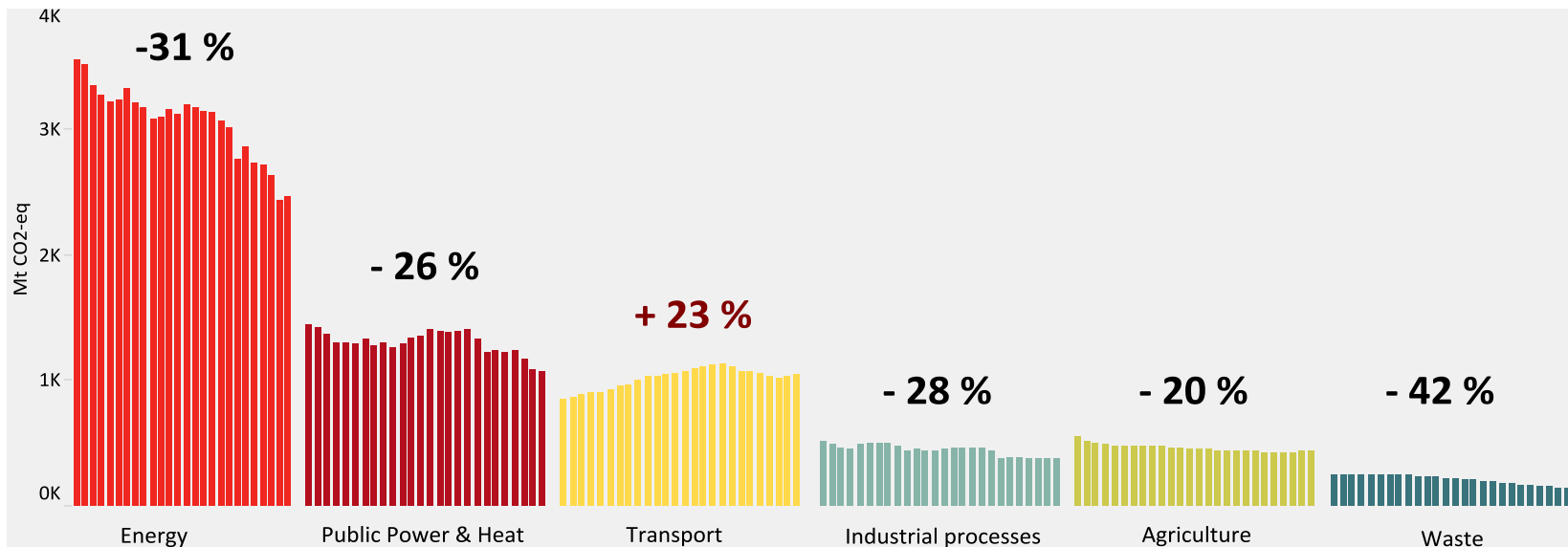


# GHG emissions in the EU, 2015

Energy-related GHG emissions in the EU – 55%

Emissions from transport came to 23 % higher than in 1990.

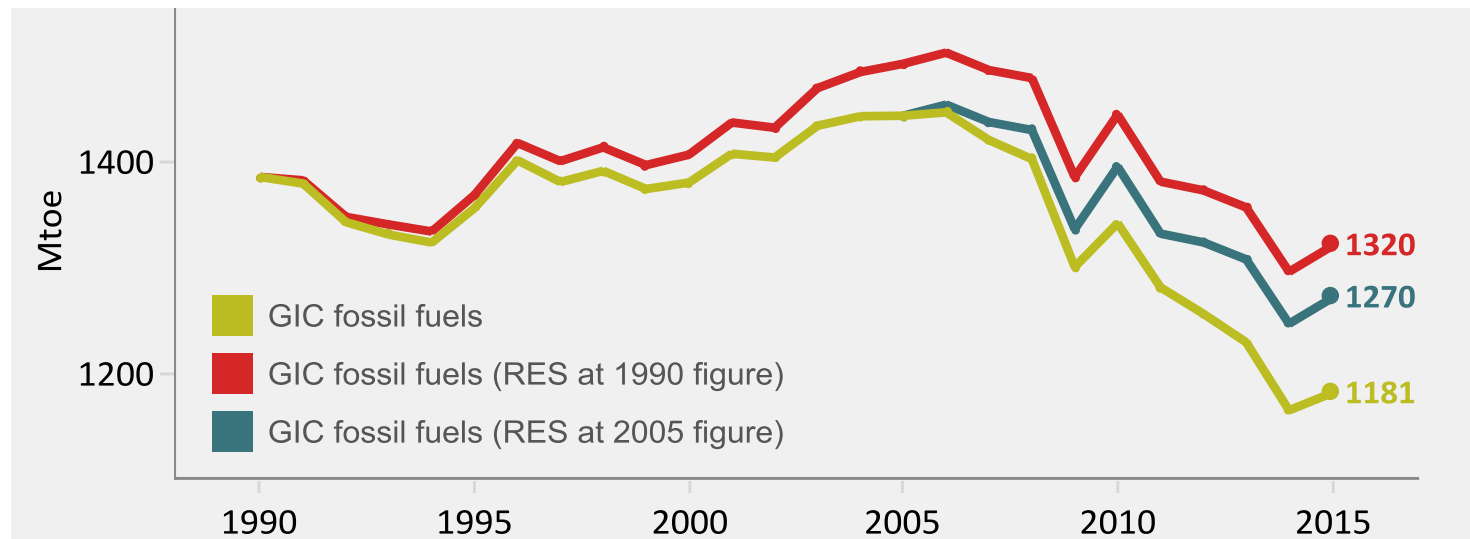
Emissions from public power and heat production accounted 25 % of total emission



# Fossil fuels displacement through RES

The increasing consumption of renewables after 1990 had displaced **139 Mtoe** of fossil fuels in the EU by 2015, equals to 11.5% of gross inland consumption of fossil fuels in 2015.

The total amount of fossil fuel used in generating electricity that was displaced by the increase in electricity from renewable sources was estimated at **56.3 Mtoe**



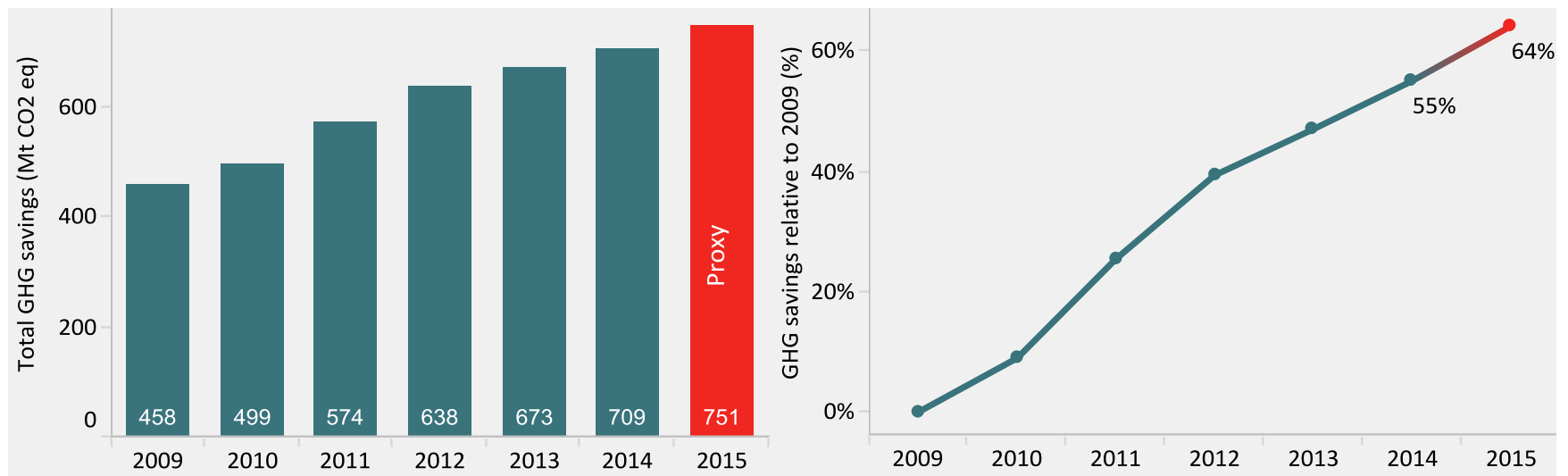
# GHG emission savings in the EU from RES

Estimated GHG emission saving by 2015 – 751 Mt CO<sub>2</sub>-eq

A decarbonisation trend of 9% in average since 2009

Electricity sector accounts for almost two-thirds of total GHG emission savings

Contribution in emission savings from heating/cooling and transport slow down

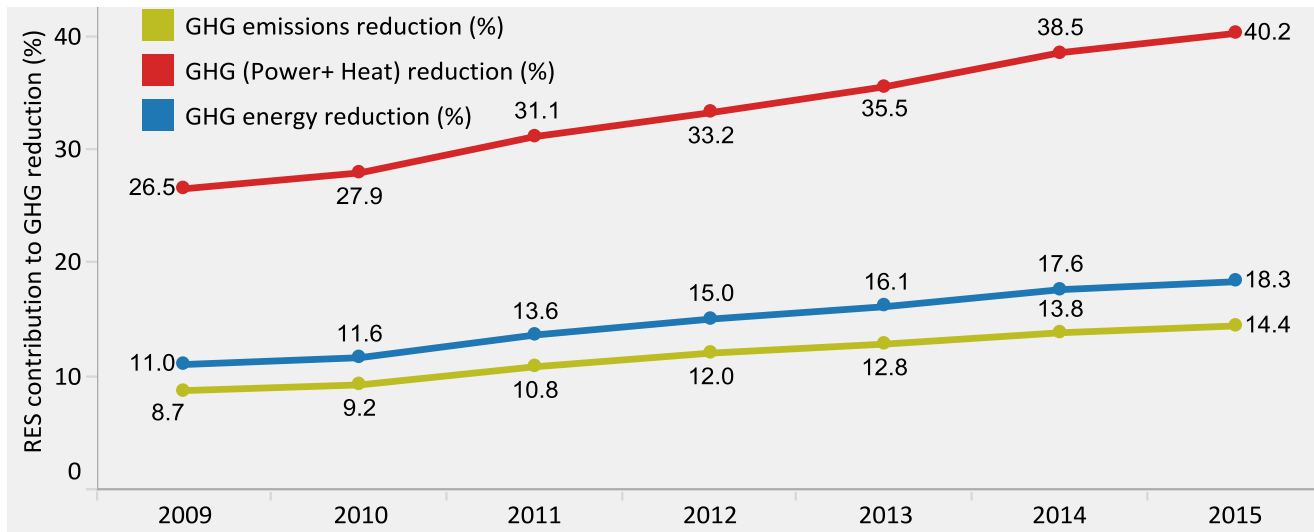


# RES contribution in GHG emission savings

Total EU emissions would have been almost 15 % higher by 2015

More than 18% was the reduction of energy-related EU emissions by 2015

The largest reduction was experienced in emissions from power and heat – 40%





# The way forward.....

Evidence shows that the move towards renewable energies is **helping long-term efforts on climate change mitigation.**

**But what to make renewables working better?**

The **trend towards decarbonising the energy system must be maintained and supported....**

...and **the slowdown in the renewables deployment since 2015 is a concern that needs to be addressed.**

Renewable energy sources **will have to displace fossil fuels to a much greater extent** in the upcoming years.