

UNIVERSITY COLLEGE CORK

SUSTAINABLE ENERGY

European Progress on Greenhouse Gas and Renewable Energy Targets

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1 Introduction

The European Union has specified a number of greenhouse gas (GHG) and renewable energy targets for the period until 2050. These targets are split into a roadmap with three main parts - short term, medium term and long term targets. The 2050 low-carbon economy roadmap [1] suggests the EU should cut emissions to 80% below 1990 levels by 2050.

The 2030 climate and energy framework [2] specifies:

- At least 40% cuts in greenhouse gas emissions (from 1990 levels)
- At least 27% share for renewable energy
- At least 27% improvement in energy efficiency

The 20-20-20 targets[4] are a set of binding targets for the year 2020. They specify:

- 20% cut in greenhouse gas emissions (from 1990 levels)
- 20% of EU energy from renewables
- 20% improvement in energy efficiency

As the 20-20-20 targets are the most relevant targets at the moment, this paper will discuss the EU progress towards meeting these targets.

2 What progress has been made in terms of EU GHG emissions targets reductions targets?

According to the European Environment Agency Trends and predictions report [3], the EU as a whole is on track to meet its climate and energy targets for 2020. According to Eurostat [4], in 1990 the EU produced 5,632,126.62 thousand tonnes of CO₂ equivalent greenhouse gas emissions. The figure in 2012 was 4,548,355.03 thousand tonnes. This is a reduction of approximately 19%. Based on these figures, the EU is well on track to meet the GHG emission target, and may achieve a 24% reduction by 2020 [3]

2.1 Successful Areas

Most of the reduction in GHG emissions are taking place under the Emissions Trading System. The EU Emissions Trading System (ETS) is designed to let large producers of greenhouse gas such as power plants and heavy industry trade emission allowances with each other. In this way large emissions producers that cannot easily reduce emissions can effectively buy emission credits from other industries to make an overall reduction. The main market for credits is emission-saving projects around the world and in developing countries. Around 45% of EU emissions are covered by the ETS scheme [5]. The ETS target for 2020 is a 21% reduction from 2005 levels [6]. In 2014, the GHG emissions in areas covered by the ETS scheme were 23% less than 1990 levels. The 2014 ETS emissions were significantly lower than estimations, and this may be due to the fact that 2014 was a particularly warm year in Europe [3].

The non-ETS sector accounts for the rest of the emissions targets. The non-ETS EU target for 2020 is a 10% reduction on 2005 levels [6]. Non-ETS emission reductions are on track and the level of emissions was 7.3% below the sum of the 28 national ESD targets for 2013 [3].

2.2 Unsuccessful Areas

The reliance on fossil fuels in the transport sector is still a major issue. According to the Trends and projections in Europe 2015 report [3], between 1990 and 2013 the transport sector was the only major emitting sector to increase its GHG production. Emissions increased by 19.4% in this sector, and in 2013 the transport sector represented 22.1% of total GHG emissions.

Emissions from international aviation are included in the ETS programme. They have increased by 93% in the period 1990 - 2013 and are expected to continue this increase [3].

More recent figures are better and emissions from transport have been decreasing since 2008 [7].

Agriculture is another area where significant reductions have been hard to achieve. Going forward, a slight increase in agriculture emissions is forecast [3].

2.3 Renewable Energy Sources

Renewable energy sources (RES) have steadily been developed around Europe and now represent a significant percentage of the energy mix. In 2012, RES accounted for 14.1% of the fuel mix. This is up from 8.7% in 2005. [8]/2015. If the rate of development of RES can be continued, Europe can meet the 20% target by 2020. Hydropower and biomass account for the largest share of renewable energy sources, but wind and solar are increasing at a stronger rate [3].

2.4 Successful Areas

Renewable electricity production is steadily increasing and in 2013, 25.4% of electricity was produced by renewables [3]. The share of renewables in heating and cooling is also growing steadily and in 2013 accounted for 16.5%.

2.5 Unsuccessful Areas

Once again, transport is an issue. There is a 2020 sub-target which specifies 10% share of renewables in the transport sector [3]. According to the Trends and projections in Europe 2015 report, RES was only 5.4% of transport energy consumption. An increase in the renewable share in transport could be achieved by increasing the blending of biofuels into diesel and petrol [9]. There is also an issue around the sustainability of biofuels. If sustainability can not be demonstrated, it is not counted towards the target [9].

3 Conclusion

Good progress has been made across the EU towards the 20-20-20 targets. Some sectors have made more progress than others. The ETS scheme is working well to reduce the carbon produced by large emitters. Challenges remain in the non-ETS sector, in particular in the transport area. It is unlikely that the targets for renewables in transport or reduction in carbon in transportation will be achieved.

References

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