Country fact sheet: Denmark



1. Total greenhouse gas emissions

Figure 1: Left hand side: Total greenhouse gas emissions (excl. international aviation) 1990-2018 (index 1990 = 100 %). Right hand side: Greenhouse gas emissions by sector¹ – historical emissions 1990-2017, projections 2018-2030 (Mt CO_2 -eq).





¹ The sectors in the figure correspond to the following IPCC sectors: Energy supply: 1A1, 1B and 1C. Energy use in manufacturing industries: 1A2. Industrial processes and product use: 2. Transport: 1A3. Other energy use: 1A4, 1A5 and 6. Agriculture: 3. Waste: 5. International aviation: memo item.

² Excluding international aviation, CO_2 from domestic aviation and NF₃.

2. ETS emissions



Figure 3: ETS emissions 2005-2018 (Mt CO₂-eq).³

3. Emissions in Effort Sharing sectors



Figure 4: Left hand side: Emissions and targets under the Effort Sharing Decision/ Effort Sharing Regulation 2018, 2020 and 2030 as percentage change from 2005. Right hand side: Emissions, annual emission allocations (AEAs) and accumulated surplus/ deficit of AEAs under the Effort Sharing Decision 2013-2020 (Mt CO₂-eq).

³ The scope of ETS was extended from 2013. To reflect the current scope of ETS, estimates made by EEA are included in the figures from 2005 to 2012. The estimates cover only emissions from stationary installations.



4. Land use, land use change and forestry

Figure 5: Reported and accounted emissions and removals from LULUCF (Mt CO₂-eq.)⁴

Reported quantities under the Kyoto Protocol for Denmark show net emissions of, on average, 2.3 Mt CO₂-eq for the period 2013 to 2017, which represents -0.6% to the annual average sink of -411.9 Mt CO₂-eq of the EU-28. Denmark is one of three EU Member States that show net emissions in this preliminary exercise. Accounting for the same period depicts net average annual credits of-3.5 Mt CO₂-eq, which corresponds to 3.1% of the EU-28 accounted sink of -111.9 Mt CO₂-eq. Reported net emissions are lowest for 2014 and increase markedly in the following years, which is similar to accounted net credits being highest for 2014 with a decreasing trend thereafter. Denmark elected to report and account for Cropland Management as one of seven EU Member States and for Grazing Land Management as one of six EU Member States.

Highest reported quantities vary over the five-year period but, on average, emissions by Cropland Management are the highest, albeit with a fluctuating trend. Removals by Forest Management are prominent for 2013 and 2014 but turned into emission thereafter. Denmark is one of two EU Member State with emissions by Forest Management for some years. Emissions by Grazing Land Management are of moderate importance and appear to show stable levels. Removals by Afforestation/Reforestation and emissions by Deforestation vary and play a minor role in the overall emission budget of the LULUCF sector. There are 0.01 and 0.03 Mt CO₂-eq of emission by Afforestation/Reforestation for 2013 and 2015; Denmark is the only EU Member State with such singularity.

Credits by Forest Management dominate the accounts for 2013 and 2014 but transform into small quantities of debits for the last three year of this analysis. Denmark is one of twelve EU Member States with debits by Forest Management, at least for some years. Credits by Cropland Management are prominent and dominate the accounts as of 2015. Credits by Afforestation/Reforestation are only noteworthy for 2015 and 2017. Credits by Grazing Land Management are very small and remain rather constant.

⁴ The differences between reported and accounted emissions from LULUCF under the Kyoto Protocol are described in the '*explanatory note on LULUCF – accounted and reported quantities under the Kyoto Protocol*'.

Data sources

Figure 1: Annual European Union greenhouse gas inventory 1990–2017 (EEA greenhouse gas data viewer: <u>https://www.eea.europa.eu/data-and-maps/data/data-viewers/greenhouse-gases-viewer</u>). *Approximated EU greenhouse gas inventory 2017* (European Environment Agency). Member States national projections, reviewed by the European Environment Agency.

Figure 2: Verified ETS emissions abstracted from European Union Transaction Log 21.10.2019 (EEA ETS data viewer: <u>https://www.eea.europa.eu/data-and-maps/dashboards/emissions-trading-viewer-1</u>). ESD data from European Commission: *Commission Implementing Decision (EU) on greenhouse gas emissions for each Member State for the year 2017 covered by Decision No 406/2009/EC of the European Parliament and of the Council* (forthcoming).

Figure 3: abstract from European Union Transaction Log 21.10.2019 (EEA ETS data viewer: https://www.eea.europa.eu/data-and-maps/dashboards/emissions-trading-viewer-1).

Figure 4: European Commission: Commission Implementing Decision (EU) on greenhouse gas emissions for each Member State for the year 2017 covered by Decision No 406/2009/EC of the European Parliament and of the Council (forthcoming). Approximated EU greenhouse gas inventory 2017 (European Environment Agency). Member States national projections, reviewed by the European Environment Agency.

Figure 5: European Commission based on data accounted and reported by Member States under the Kyoto Protocol.