

【欧州】【Common, 運輸共通】

Common - EU-ETS, Road/Railways - Environmentally friendly vehicles: EU' s 2019 GHG emissions show lowest level in three decades but the transport sector' s emissions remain a problem

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【概要 : Summary】

The European Commission's Climate Action Progress Report "Kick-Starting the Journey Towards A Climate Neutral Europe" describes the progress made by the EU and its Member States in reducing GHG emissions. The Climate Action Progress Report also reports on recent developments in EU climate policy. The report shows that while the GHG emissions of stationary installations continuously decreased, the GHG emissions in transport only decreased between 2007 and 2013. Thereafter, the GHG emissions in transport increased again in every year, meanwhile reaching only a marginally lower level of -2% compared to 2005. According to the European Environment Agency (EEA)' s indicator assessment on GHG emissions from transport in Europe, the sector' s GHG emissions have increased again in 2018 and 2019 and have not followed the EU' s general trend of decreasing GHG emissions. After the temporary decrease in transport GHG emissions resulting from the 2008/09 economic crisis, they have continued to increase due to the increasing demand.

Meanwhile, on 16 December 2020, the European Commission adopted an Implementing Decision, setting out the annual emission allocations (AEAs) for 2021-2030 under the Effort Sharing

Regulation. The Commission' s Implementing Decision translates the Member States' targets into GHG emission limits in tonnes of CO₂ equivalent for each year and Member State along a linear trajectory between 2021 and 2030. Adopting this decision is an important step in order to set the EU Member States on the right path to achieving the EU-wide GHG emission reduction target of 2030.

【記事 : Article】

1. Background

In the 2015 Paris Agreement, the EU and its Member States committed to reduce their GHG emissions in order to make the Climate change related temperature increase to stay below a 1.5° C increase compared to pre-industrial levels.

In December 2019, the European Commission presented the European Green Deal (COM/2019/640 final) as a comprehensive multi-sectoral roadmap toward ensuring climate neutrality by 2050. A new proposal for a European Climate Law to make the climate neutrality target legally binding in the EU was presented in March 2020. On 17 September 2020, the Commission presented an amended proposal to introduce a target of 55 % GHG emission reduction in the EU' s by 2030 (COM(2020)563).

With the European Green Deal and the planned European Climate Law, the Commission proposed not only a legally binding target of net zero GHG emissions to be achieved by 2050. In order to achieve this climate neutrality by 2050, a more ambitious mid-term target for 2030 needs to be considered. Therefore, the Commission amended the proposal for a European Climate Law and increased the 2030 GHG emission reduction target to at least 55%, compared with 1990 levels, up from the currently planned 40% reduction.

However, the transport sector represents a major challenge for EU Member States due to its still increasing GHG emissions. According to the EEA's findings, the EU's transport emissions increased in 2019 by 0.8 % (not including shipping) compared to 2018. This follows a 0.9 % increase in 2018. These rates of increase are the slowest since 2014, but projections indicate that transport emissions will increase by 32% by 2030 compared with 1990 levels and if all policy measures to reduce GHG emissions are introduced, estimates indicate that GHG emissions in the transport sector would increase by 17% compared to 1990 levels. Consequently, all transport sub-sectors will need to reach more ambitious targets if the sector wants to contribute to the European Green Deal's goal.

2. The European Commission's EU Climate Action Progress Report

The European Commission's Climate Action Progress Report "Kick-Starting the Journey Towards A Climate Neutral Europe", which was adopted on 30 November 2020, covers the EU's progress in cutting GHG emissions in 2019. It describes the progress made by the EU and its Member States in reducing GHG emissions. It also reports on recent developments in EU climate policy. The report is produced by the Commission's Directorate-General for Climate Action based on data submitted by Member States under the Climate Monitoring Mechanism Regulation.

According to the European Commission's report, GHG emissions in the EU-27 decreased by 3.7% year-on-year, representing a total reduction of 24% compared to 1990 levels. This is the EU's GHG emissions lowest level since 1990. Including emissions and removals from land use, land use change and forestry this results in a net emission reduction of 25%. Considering these overall results of the annual EU Climate Action Progress Report, the EU remains on track to achieve its target under the UN Framework Convention on Climate Change (UNFCCC) of reducing GHG emissions by 20% by 2020.

3. The EEA's results on the EU-ETS in 2020

The EU-ETS covers about 40% of the EU's total greenhouse gas emissions and the GHG emissions of approximately 11,000 power stations and manufacturing plants, as well as aviation within and between the participating countries in Europe. According to the European Commission's Climate action Progress report of 30 November 2020 and the EEA's report on trend and projections for the EU-ETS of 10 December 2020, GHG emissions from installations in all countries participating in the EU-ETS are estimated to have decreased by 9.1% in 2019, compared to 2018. This result for 2019 represents the largest drop in CO₂ emissions since 2009. Between the start of the EU-ETS in 2005 and 2019, emissions from stationary installations decreased by 35%. The decrease in 2019 was mainly driven by changes within the electricity and heat production sectors and to replace coal with renewable and gas-fired power sources. The CO₂ emissions in the power sector fell by about 15% compared to 2018. According to the EEA report, the decarbonisation trend in the EU's energy system continues. The three Member States Germany (-54.2 Mt), Poland (-15.6 Mt) and Spain (-15.4 Mt) account for over half of the combustion-related emission reductions in 2019. In Germany and Poland, more electricity was produced from natural gas, wind power and imports

from neighbouring countries, rather than firing coal for energy production. In Spain, coal was partially displaced by natural gas and, to a lesser extent, by increased wind and nuclear power generation. Belgium and Croatia are the only two countries that showed an increase in the amount of electricity produced from coal.

The EEA expects that under the current and planned measures, the CO₂ emissions covered by the EU-ETS will continue to decrease. However, the EEA projections do not yet include the recently planned measures as well as the impact of the COVID-19 pandemic in 2020. Significant CO₂ emission reductions are expected in 2020, partially because of the lock down measures during the COVID-19 pandemic. However, significant further cuts in GHG emissions remain necessary to achieve climate neutrality by 2050.

4. The transport sector' s dragging GHG emission reductions

4.1. The EEA' s assessment of GHG emissions in the transport sector

While there can be observed a steady overall tendency of GHG emission reduction in the EU-ETS covered industries in the EU, the transport sector is significantly lagging behind this general trend. According to preliminary estimates, the EU' s transport sector' s GHG emissions increased in 2019 by 0.8 % (not including shipping). This follows a 0.9 % increase in 2018. These rates of increase are the slowest since 2014. The transport sector remains the only main European economic sector, which shows a significant increase in the GHG emissions, when compared with 1990 levels. It means that the transport sector is also a major obstacle for the EU to realising its climate targets. Projections indicate that by 2030, the GHG emissions from transport will increase by 32% compared with 1990 levels. If the additional measures planned in national policies are considered in the

projections (‘with additional measures’ scenario), the estimates indicate that GHG emissions will increase by 17% by 2030, compared to 1990 levels. Therefore, the transport sector is unlikely to contribute to the emission reductions needed to achieve the EU' s new targets for 2030 or to achieving climate neutrality by 2050.

In order to change this, all transport sub-sectors will need to be much more ambitious if the sector as a whole has to contribute to the 2050 goal of net zero GHG emissions in the European Green Deal. In particular, further action is needed in road transport, the highest contributor to transport emissions but also in aviation and shipping, where transport demand is driving GHG emissions upward in both, absolute and relative terms. However, considering the increased GHG emissions in road transport, international maritime transport and aviation emissions, only road transport has the potential to achieve a decrease in GHG emissions in the next 15 years.

4.2. Aviation

The largest increases of GHG emissions in the transport sector up to 2030 are projected in the aviation sector, followed by international maritime transport. These sub-sectors are expected to constitute a higher proportion of the transport sector' s GHG emissions in the coming years, according to EEA.

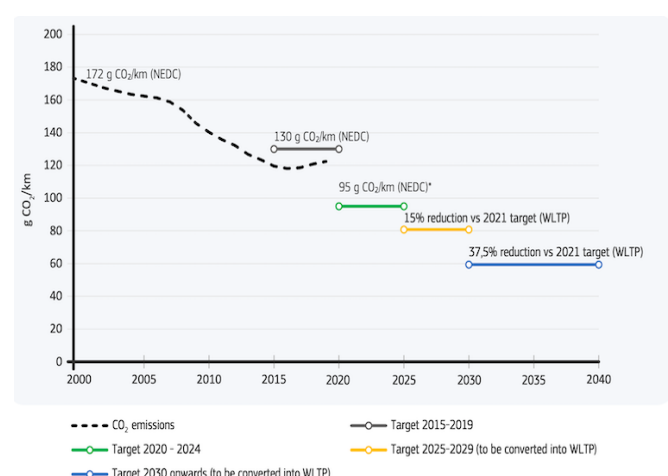
Under the EU-ETS for aviation, all commercial aircraft operators, and non-commercial aircraft operators with significant emissions, are accountable for their emissions from flights within the European Economic Area (EEA), based on Regulation No.421/2014 and Regulation (EU) 2017/2392, until 2023. Since the aviation within the EEA was included in the EU-ETS, aviation emissions have continued to increase. In 2019, aviation emissions covered by the EU-ETS amounted to 68.2 Mt CO₂e, representing an increase of 1.0%

compared to 2018. According to the Commission, 54% of these emissions were covered by allowances acquired from auctions or other sectors. Aircraft operators received free allocation of 31.3 million allowances, covering 46% of these emissions. The eight largest aircraft operators were responsible for 49 % of total emissions. Ryanair and Easyjet were responsible for the largest share of EU ETS-covered emissions in 2019, and Ryanair remains one of the top ten overall emitters in the EU-ETS. However, it has to be considered, that Ryanair is exclusively flying on European routes, while several other airlines are also flying to intercontinental destinations, which are not covered with their CO₂ emissions under the EU-ETS. Some former flag carriers like Lufthansa or British Airways, have experienced much slower growth in CO₂ emissions than Ryanair. However, since these airlines not only fly on intra-EEA routes but also on many long-haul routes outside the EEA, their total GHG emissions could be much higher than those of Ryanair, which flies exclusively on intra-European routes. Regarding emissions from extra-EEA international aviation, they will be covered by the global market-based mechanism, the Carbon Offsetting and Reduction Scheme for international aviation (CORSIA). The EU already has an integrated monitoring, reporting and verification framework for the EU-ETS and CORSIA in place. The Commission is assessing different policy options for a legislative proposal by June 2021 to implement further aspects of CORSIA in the EU by amending the EU-ETS Directive.

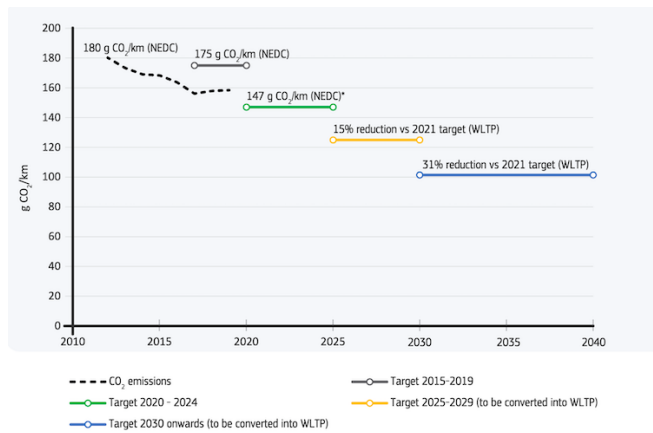
4.3. GHG emissions in road transport

Road Transportation includes all types of light-duty vehicles and passenger cars as well as heavy-duty vehicles such as tractors, trailers and buses, and two and three-wheelers. Road transport is by far the biggest emitter of GHG emissions in the transport sector and it is responsible for around 71% of GHG emissions of the transport

sector's total GHG emissions in 2018. The road transport is also the second largest key source of all GHG emissions in the EU and it accounted for 21% of the EU's total GHG emissions in 2018. Between 1990 and 2018, CO₂ emissions from road transport increased by 24% in the EU. However, at the same time, road transport is also the sub-sector with the best ability to decrease its emission levels, as road transport decarbonises faster than the other transport modes, according to EEA estimates. In the road transport sector, mandatory CO₂ emission reduction targets were defined in Regulation (EC) 443/2009 for passenger vehicles and in Regulation (EU) No 510/2011 for new light duty vehicles (vans). In April 2019, the Regulation (EU) 2019/631 was adopted, setting new CO₂ emission reduction targets for new passenger cars and for new light commercial vehicles (vans) in the EU for the period after 2020. From 2025, a 15% fleet-wide reduction target based on the 2021 target was set for the new passenger cars and the new light commercial vehicles. From 2030, the EU fleet-wide target for CO₂ emissions of the new passenger cars is set to be reduced by 37,5%, based on the 2021 target. For the new light commercial vehicles fleet (vans), an EU fleet-wide target of 31% below the 2021 target was determined for 2030.



Passenger cars



Vans

Fig. 1: Average CO₂ emissions (g/km) for newly sold passenger cars and vans compared to current fleet-wide targets until 2040, in g CO₂/km

Source: https://ec.europa.eu/clima/sites/clima/files/strategies/progress/docs/com_2020_777_en.pdf

GHG emissions from new lorries will have to be 15% and 30% lower than in 2019. The standards include a mechanism to incentivise the uptake of zero and low-emission vehicles based on benchmark values from 2025 onwards.

According to the European Commission's report and provisional data, in 2019 average emissions were 122.4g CO₂/km for cars (1.6g above 2018) and 158.4g CO₂/km for vans (0.5g above 2018). The CO₂ emissions of passenger cars increased in both consecutive years, 2017 and 2018. Instead, the newly registered vans showed a further decrease in CO₂ emissions by 4.7% in 2017, whereas 2018 data showed again an increase in CO₂ emissions for newly registered vans.

These are concerning results, as, in order to meet the future GHG emission reduction targets for passenger cars and vans from 2020 onwards, CO₂ emissions will have to further decrease significantly.

5. Expected impact of the COVID-19 pandemic

The COVID-19 crisis is expected to lead to an unprecedented fall in GHG emissions in 2020, but first reliable data will only be available later

in 2021. However, a swift economic recovery could cause a strong and rapid rebound in GHG emissions, unless more measures toward the green transition are taken. Before the pandemic, the GHG emissions from stationary installations covered by the EU-ETS fell by 9.1% from 2018 to 2019. However, the GHG emissions not covered by the EU-ETS, including emissions from transport, increased slightly from 2018 to 2019. Although the GHG emissions from transport including international aviation are expected to have declined significantly due to the COVID-19 pandemic in 2020, any positive impact of the pandemic on the GHG emission trends should be considered being temporary only.

6. The Commission's implementing decision on annual emission allocations 2021-2030

Meanwhile, the European Commission adopted the "Commission Implementing Decision (EU) 2020/2126 of 16 December 2020 on setting out the annual emission allocations of the Member States for the period from 2021 to 2030 pursuant to Regulation (EU) 2018/842 of the European Parliament and of the Council". This Commission Implementing Decision (EU) 2020/2126 sets out the annual emission allocations (AEAs) of the Member States for the period from 2021 to 2030 under the Effort Sharing Regulation (EU) 2018/842.

The Implementing Decision (EU) 2020/2126's date of entry into force is still unknown, but the adoption of this decision is an important step to ensuring the Member States take the right path to achieving an EU-wide GHG emission reduction of 30% by 2030 compared to 2005 in the sectors not covered under the EU-ETS. The Effort Sharing Regulation (ESR) covers the GHG emission of sectors outside the EU-ETS, like the transport sector. It sets binding annual GHG emissions targets for EU Member States for 2030, in percentage change compared to 2005 levels. The Regulation stipulates how to calculate AEAs for 2021-2030 and defines flexibilities that Member

States can use to meet these targets. The Commission's Implementing Decision (EU) 2020/2126 translates these targets into GHG emission limits in tonnes of CO₂ equivalent for each year and Member State along a linear trajectory between 2021 and 2030. The Decision entered into force in January 2021, twenty days after its publication.

7. Conclusion

According to the European Commission's findings, the further decline in GHG emissions of 9.1% in 2019 compared to 2018 in installations covered by the EU-ETS suggests that the EU's energy system is decarbonising rapidly. Further significant reductions are expected in 2020, although they are partially caused by the COVID-19 pandemic. However, the actual impacts of the COVID-19 pandemic on EU-ETS emissions in the short- and possibly the medium-term as well as the impact of the UK's exit from the EU on the EU-ETS results are still uncertain. While the lock down measures during the COVID-19 pandemic could lead to a significant reduction of the EU-ETS emissions in 2020, any impact of the COVID-19 pandemic on the GHG emission trends should be considered being temporary only.

The aviation sector's GHG emissions can be expected to return to pre-pandemic levels after the pandemic will end. Furthermore, in the road transport sector, there is some potential for a decrease of GHG emissions by the progress of electrification of road transport. However, the higher electricity demand due to electrification in the transport sector could lead to higher GHG emissions, if the increased electricity demand is not covered by renewable energy sources.

The transport sector's GHG emissions are projected to be reduced by 20% by 2030, compared to 2005, if all the planned policies and measures are implemented. This underlines the strong need to focus the post-pandemic recovery measures on GHG emission reduction in this particular sector.

The policy instruments for GHG emissions reduction in the transport sector must be reinforced, otherwise the EU's 2030 target of reducing the overall GHG emissions by 55% could be missed, partially due to the transport sector and its several hard-to-decarbonise sub-sectors.

References

- Amended proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on establishing the framework for achieving climate neutrality and amending Regulation (EU) 2018/1999 (European Climate Law). COM/2020/563 final. In:
<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020PC0563>, retrieved 14 January 2021
- Communication from the Commission to the European Parliament, the European Council, the European Economic and Social Committee and the Committee of the regions. The European Green Deal. COM/2019/640 final. In:
<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1588580774040&uri=CELEX%3A52019DC0640>, retrieved 14 January 2021
- European Commission: Kick-starting the journey towards a climate-neutral Europe by 2050. In:
https://ec.europa.eu/clima/sites/clima/files/strategies/progress/docs/com_2020_777_en.pdf, retrieved 29 December 2020
- European Commission: Commission Implementing Decision (EU) 2020/2126 of 16 December 2020 on setting out the annual emission allocations of the Member States for the period from 2021 to 2030 pursuant to Regulation (EU) 2018/842 of the European Parliament and of the Council (Text with EEA relevance). C/2020/8865. In:
https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2020.426.01.0058.01.ENG, 16 December 2020, retrieved 29 December 2020
- European Commission: Commission sets annual emissions budgets for 2021-2030 under the Effort Sharing Regulation. In:
<https://ec.europa.eu/clima/news/commission-sets-annual-emissions-budgets-2021-2030-under-effort-sharing>

[sharing-regulation_en](#), 17/12/2020, retrieved 29

December 2020

European Commission: EU greenhouse gas emissions fell in 2019 to the lowest level in three decades. In:

https://ec.europa.eu/commission/presscorner/detail/en/ip_20_2182, 30 November 2020, retrieved 14 January 2021

European Commission: Kick-starting the journey towards a climate-neutral Europe by 2050. EU climate action progress report. In:

https://ec.europa.eu/clima/sites/clima/files/strategy/es/progress/docs/com_2020_777_en.pdf, November 2020, retrieved 29 December 2020

EEA: Average CO2 emissions from new cars and new vans increased in 2018. In:

<https://www.eea.europa.eu/downloads/d1474c4b84cb435287f2a092ec07b37d/1561367883/average-co2-emissions-from-new.pdf>, 24 Jun 2019, retrieved 28 June 2019

EEA: EU Emissions Trading System (ETS) data viewer. In:

<https://www.eea.europa.eu/data-and-maps/dashboards/emissions-trading-viewer-1>, 18 May 2020, retrieved 29 May 2020

EEA: EU greenhouse gas emissions kept decreasing in 2018, largest reductions in energy sector. In:

<https://www.eea.europa.eu/downloads/calb98d013a846468169173a8cfd10c/1590731318/eu-greenhouse-gas-emissions-kept.pdf>, 29 May 2020, retrieved 15 June 2020

EEA: Greenhouse gas emissions from transport in Europe. In:

<https://www.eea.europa.eu/data-and-maps/indicators/transport-emissions-of-greenhouse-gases-7/assessment>, 18 December 2020, retrieved 14 January 2021

EEA: The EU Emissions Trading System in 2020: trends and projections. Briefing no. 20/2020. In:

<https://www.eea.europa.eu/downloads/3013b20fc16945dd872c724b35deb95a/1607952211/the-eu-emissions-trading-system.pdf>, retrieved 14 January 2021

EEA: Total greenhouse gas emission trends and projections in Europe. In:

<https://www.eea.europa.eu/data-and-maps/indicators/greenhouse-gas-emission-trends-6/assessment-3>, 19 Dec. 2019, retrieved 15 June 2020

European Environment Agency: The EU Emissions Trading System in 2020: trends and projections. Briefing no. 20/2020. In:

<https://www.eea.europa.eu/downloads/3013b20fc16945dd872c724b35deb95a/1607952211/the-eu-emissions-trading-system.pdf>, 10 December 2020, retrieved 14 January 2021

European Environment Agency (EEA): Trends and drivers of EU greenhouse gas emissions. EEA Report No 3/2020. In:

<https://www.eea.europa.eu/publications/trends-and-drivers-of-eu-ghg>, 29 May 2020, retrieved 12 June 2020

Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No 525/2013. In:

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32018R0842>, retrieved 14 January 2021