Air pollution policies and measures reported under the National Emissions reduction Commitments Directive (NECD)

2021 Update

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The withdrawal of the United Kingdom from the European Union did not affect the production of the report.
Data reported by the United Kingdom are included in all analyses and assessments contained herein, unless otherwise indicated.

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Summary

Article 6 of Directive (EU) 2016/2285 on the reduction of national emissions of certain atmospheric pollutants (NECD) sets out the obligation for Member States to draw up, adopt and implement their respective National Air Pollution Control Programs (NAPCP) to limit their anthropogenic air pollution emissions. These include policies and measures (PaMs) that the Member States are considering and have selected for adoption in view of fulfilling their emissions reduction commitments. This information was required to be reported for the first time in 2019. This short report provides an update on the data reported, with first submissions from Luxembourg and Greece, and resubmissions from Latvia, Hungary and Ireland.

Luxembourg reported that they are considering an additional 15 individual PaMs and three packages of PaMs, and Greece reported 28 individual PaMs and one package.

The majority of Luxembourg's additional PaMs target the agriculture sector, followed by the transport sector. Luxembourg's agriculture policies include measures to reduce ammonia emissions from manure application and storage, and promotion of techniques to reduce ammonia emissions from cattle farming.

The majority of Greece's additional PaMs target the transport sector (70 %). These policies include electrification of railways, promotion of alternative fuels and improving the emission profile and efficiency of the road transport fleet. An additional measure, reported as targeting the energy supply sector, was the electrification of ships during mooring.

Hungary and Latvia's updated submissions did not result in significant changes to any of the analyses previously undertaken. Ireland submitted an updated NAPCP in 2021, which states that the original NAPCP was submitted before the finalisation of a number of relevant national policy frameworks, and as such their additional PaMs under consideration have been updated. The main changes have been around the implementation dates of policies, and a higher focus on the energy consumption and energy supply sectors. The majority of Ireland's policies would be implemented by regulatory means, with a reduction in voluntary measures from the initial submission.

The new submissions have not resulted in significant changes to the EU-wide analysis. A total of 661 individual additional PaMs have been reported, and the transport sector remains the most frequently targeted by the policies.

Acknowledgements

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1 Introduction

Article 6 of Directive (EU) 2016/2285 on the reduction of national emissions of certain atmospheric pollutants (NECD) sets out the obligation for Member States to draw up, adopt and implement their respective National Air Pollution Control Programs (NAPCP) to limit their anthropogenic air pollution emissions[1]. These include policies and measures (PaMs) that the Member States are considering and have selected for adoption in view of fulfilling their emissions reduction commitments. Commission Implementing Decision (EU) 2018/1522[2] requires these additional air pollution PaMs to be reported by Member States via an online webtool hosted by the European Environment Agency. This information was reported for the first time in 2019 and analysis was undertaken and presented in a previous report[3] and briefing[4].

This short report provides an update to this analysis. Since the analysis was undertaken two more Member States, Luxembourg and Greece, have reported their air pollution PaMs and three Member States, Latvia, Hungary and Ireland, have provided an updated submission. All Member States except Romania and Bulgaria have now submitted their additional air pollution PaMs under the NECD for the first time.

[1] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2016.344.01.0001.01.ENG

[2] https://eur-lex.europa.eu/eli/dec_impl/2018/1522/oj

[3] https://www.eionet.europa.eu/etcs/etc-atni/products/etc-atni-reports/etc-atni-report-3-2020-analysis-of-the-air-pollution-policies-and-measures-reported-under-the-national-emissions-reduction-commitments-directive-necd

[4] https://www.eea.europa.eu/publications/measures-to-reduce-emissions-of/actions-to-reduce-air-pollutant

2 Policies and measures (PaMs) reported by Luxembourg and Greece

This chapter describes the characteristics of Luxembourg and Greece's reported individual PaMs as reported through the EEA PaM tool. Luxembourg reported 15 individual PaMs and three packages (groups of PaMs). Greece reported 28 individual PaMs and one package. The following analysis focuses only on the individual PaMs.

While Member States are required to report only on the additional PaMs being considered and selected in order to meet their emission reduction commitments, Greece has also reported on existing PaMs. Of their 28 reported individual PaMs 18 were reported to have been implemented prior to 2020. These PaMs have been excluded from the following analysis. Of those reported with an implementation date in 2020 or later, the majority were reported with an implementation date in 2020 (80%) with one PaM reported with an implementation date of 2021 and one of 2025. Luxembourg only reported PaMs with an implementation date of 2020 or later and similarly to Greece the majority are 2020 (80 %). In addition, Luxembourg reported one PaM with an implementation date in 2022 and two in 2050.

Greece reported the majority of their PaMs with a default end date of '9999' (80 %) with two PaMs with an actual end date, of 2040 and 2050. Luxembourg reported more PaMs with an actual end date, the majority of these being 2030 (40 %), but 53 % of their reported PaMs were still reported with an end date of '9999'. This option is available for PaMs where the end date is not yet known, as the additional policies being considered may be in varying stages of development.

Member States are required to report which sector(s) each PaM affected. The majority of Luxembourg's PaMs target the agriculture sector (40 %) with the transport sector also targeted by a high proportion of the PaMs (33 %). Luxembourg's agriculture policies include measures to reduce ammonia emissions from manure application and storage, and promotion of techniques to reduce NH_3 emissions from cattle farming. While Luxembourg has so far met their emission reduction commitments in recent years, the reported 'with measures' projections show that emissions of NH_3 are not expected to meet reduction commitments in 2020, 2025 and 2030 by 24 %, 31 % and 41 % respectively. Additionally, the reported projections show that Luxembourg will miss the reduction targets for NO_X, NMVOC and $PM_{2.5}$ by 46 %, 6 % and 16 % respectively in 2030[5]. As the primary source of NH_3 emissions is from the agriculture sector and a significant source of NO_X, NMVOC and $PM_{2.5}$ emissions is transport, it is expected that Luxembourg would be reporting a significant proportion of additional PaMs targeting these sectors, which they have done so.

The majority of Greece's reported PaMs target the transport sector (70 %). These policies include electrification of railways, promotion of alternative fuels and improving the emission profile and efficiency of the road transport fleet. An additional measure, reported as targeting the energy supply sector, was the electrification of ships during mooring. Greece has also so far met their emission reduction commitments in recent years, however projections in the 'with measures' scenario show emissions of NMVOC and NO_X are expected to be 3 % above the 2030 commitments[6]. Transport is a significant source of these pollutants; it is therefore expected that Greece is considering a significant proportion of their additional PaMs targeting this sector.

Greece reported that all but one of their PaMs would impact all four of the main NECD pollutants (NH_3, NMVOC, $PM_{2.5}$ and SO_2) and the remaining PaM would only impact SO_2. Unsurprisingly, given that the sectors most targeted by Luxembourg's reported PaMs are agriculture and transport, the majority of their PaMs would impact NH_3 emissions (67 %) with $PM_{2.5}$ the next most impacted pollutant (47 %).

Like the majority of other Member States, Greece and Luxembourg reported that the majority of their PaMs would be implemented through regulatory means, 70 % and 80 % respectively. A high number

[5] https://ec.europa.eu/environment/air/pdf/reduction_napcp/Luxembourg_Projections%20review%20report_FINAL.pdf
[6] https://ec.europa.eu/environment/air/pdf/reduction_napcp/Greece_Projections%20review%20report_FINAL.pdf

of PaMs from both Member States would also be implemented through economic and fiscal means. All PaMs from both Greece and Luxembourg would be implemented by a national government entity, with Luxembourg reporting that one of their PaMs would be implemented through both a national government entity and a local one.

2.1 Reported effects of policies and measures under the NECD

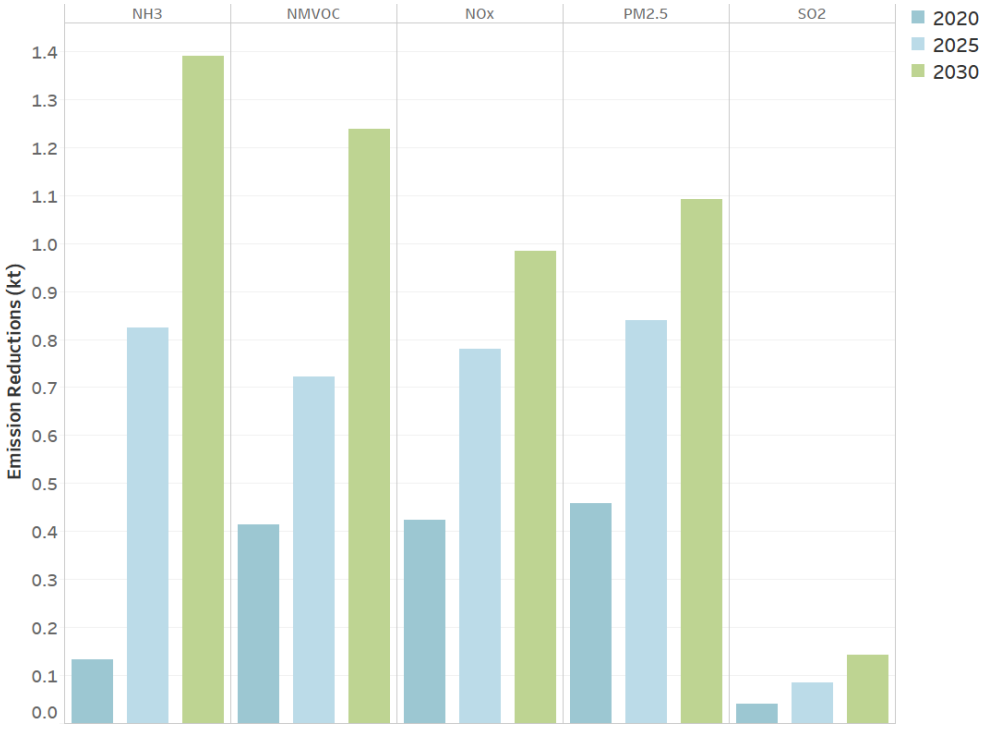
To be consistent with the previous analyses, the following section only includes analysis on PaMs selected for adoption. Greece reported no PaMs selected for adoption with an implementation date of 2020 or later, and therefore only PaMs from Luxembourg are included (87 % of their reported PaMs).

It was mandatory to report quantified emissions reductions of additional air pollution PaMs for each pollutant that the PaM targeted for the years 2020, 2025 and 2030. They could be reported as absolute values, a range of values or a '#' sign where no quantification was available, with quantified emissions in kilotonnes (kt) of pollutant saved per year. All but one of Luxembourg's PaMs were quantified at either the single or group level.

Figure 2.1: shows the reported emission reductions from Luxembourg. The highest emission reductions were reported for NH_3 with annual reductions of 1.39 kt by 2030. This is expected as the majority of PaMs are targeting NH_3. Reductions of SO_2 are expected to be the lowest, with annual reductions of 0.142 kt per year by 2030. This is partially expected as only 27 % of Luxembourg's additional PaMs target SO_2. However, 27 % of PaMs target NMVOC which have reported reductions 1.239 kt by 2030, the second highest reported reductions from Luxembourg

Figure 2.1: Reported emissions reductions from Luxembourg's additional PaMs (kt).

Figure 2.1: Reported emissions reductions from Luxembourg's additional PaMs (kt)



2.2 Comparison of reported climate and air pollution policies and measures

PaMs could be identified as already reported under the EU Monitoring Mechanism Regulation (MMR) climate mitigation policies, or ambient air quality (AQ) directive, using the 'Related to AQ/MMR?' field. This field was a tick-box field with two options; however, it was not mandatory. Neither Greece nor Luxembourg reported that any of their PaMs reported under the NECD had been reported under the MMR, noting that only single PaMs with an implementation date at or after 2020 were included in this analysis. However, comparison of the PaMs reported under the NECD and MMR show that it was possible to match 20 % and 7 % of Greece's and Luxembourg's NECD PaMs with PaMs reported under the MMR, respectively. This was based on the PaM name and description reported under both regulations. Only one of these PaMs overlapped completely, with PaMs being reported at different aggregations in the different reporting streams. Neither Greece nor Luxembourg reported quantified reductions of CO_2 under the NECD.

3 Updated PaMs reported

Latvia, Hungary and Ireland reported an updated submission in 2021. Hungary and Latvia's updated submissions did not result in significant changes to any of the analyses previously undertaken, including on quantification, and therefore updated analysis for these Member States has not been included in this section.

However, Ireland reported overall 5 fewer PaMs in their most recent submission. There have also been significant changes to the implementation dates of Ireland's reported PaMs. In the previous submission 85 % of PaMs were to be implemented in 2019 or later. Only additional single PaMs are considered in the following analysis.

As for the previous submission, the majority (70 %) of the PaMs yet to be implemented were to be implemented in 2019. The remaining were to be implemented in 2020, 2021 and 2025. In the previous submission, the majority of the PaMs were reported with an implementation end date of 2030 (50 %). The remaining are to end by 2022, 2024, 2026 and 2027.

There have been significant changes to the sectors targeted by Ireland's reported air pollution PaMs. Ireland submitted an updated NAPCP in 2021, which states that the original NAPCP was submitted before the finalisation of a number of relevant national policy frameworks[7]. Presumably, this also applies to the initial PaMs submission under the NECD. 10 PaMs have not been reported in the most recent submission which implies they may have been discarded, and 16 PaMs have been reported with an updated implementation date prior to 2019. However, it is important to note that none of these PaMs have been reported as selected for adoption. There are also five newly reported PaMs, although two of these have an implementation date prior to 2019. The new additionally reported PaMs with an implementation date of 2019 or later are targeting the energy consumption and agriculture sectors.

As in the previous submission, the majority of Ireland's PaMs target energy consumption. However, while a low proportion of PaMs targeted the energy supply sector in the previous submission, an equivalent proportion of PaMs targeting energy consumption targeted the energy supply sector (40 %) in the current submission. No PaMs targeting the transport sector were reported in the current submission, however six PaMs in the 2020 submission are targeting this sector. Additionally, the number of PaMs targeting agriculture has also reduced.

The changes to the proportion of PaMs targeting these sectors is primarily due to the changes to the reported implementation dates - of the PaMs reported in both submissions only one was reported as targeting a different sector. Using the transport sector as an example, while three of the PaMs relate to the Clean Air Strategy and have not been reported in the most recent submission, two of the remaining three have been included within the submission, reported with an implementation date in 2010 and 2012. The final former transport PaM is for the development of renewable energy in transport, for which the target sector has been updated to energy supply in the most recent submission.

As for the sector distribution, Ireland's updated submission shows large changes in the number of PaMs targeting the main NECD pollutants. The number of PaMs targeting NH_3 has reduced from 52 % to 30 % and the number of PaMs targeting NMVOC, SO_2 and $PM_{2.5}$ has increased from 66 % to 80 %. However, as found from analysis on sectors, the most significant contribution to this change is the updates to the implementation dates to prior than 2019. One PaM has been reported in the most recent submission as no longer impacting NH_3 emissions and one PaM will additionally impact N_2O emissions. In addition, in the most recent submission 6 PaMs have also been reported as impacting CO_2 emissions.

Unlike the previous submission, the majority of Ireland's PaMs will be implemented through regulatory means (60 %). Additionally, no PaMs are now to be implemented through fiscal or planning means.

[7] https://ec.europa.eu/environment/air/pdf/reduction_napcp/Ireland_NAPCP_Feb21.pdf

The proportion of PaMs to be implemented through voluntary means has also decreased from 41 % to 20 %.

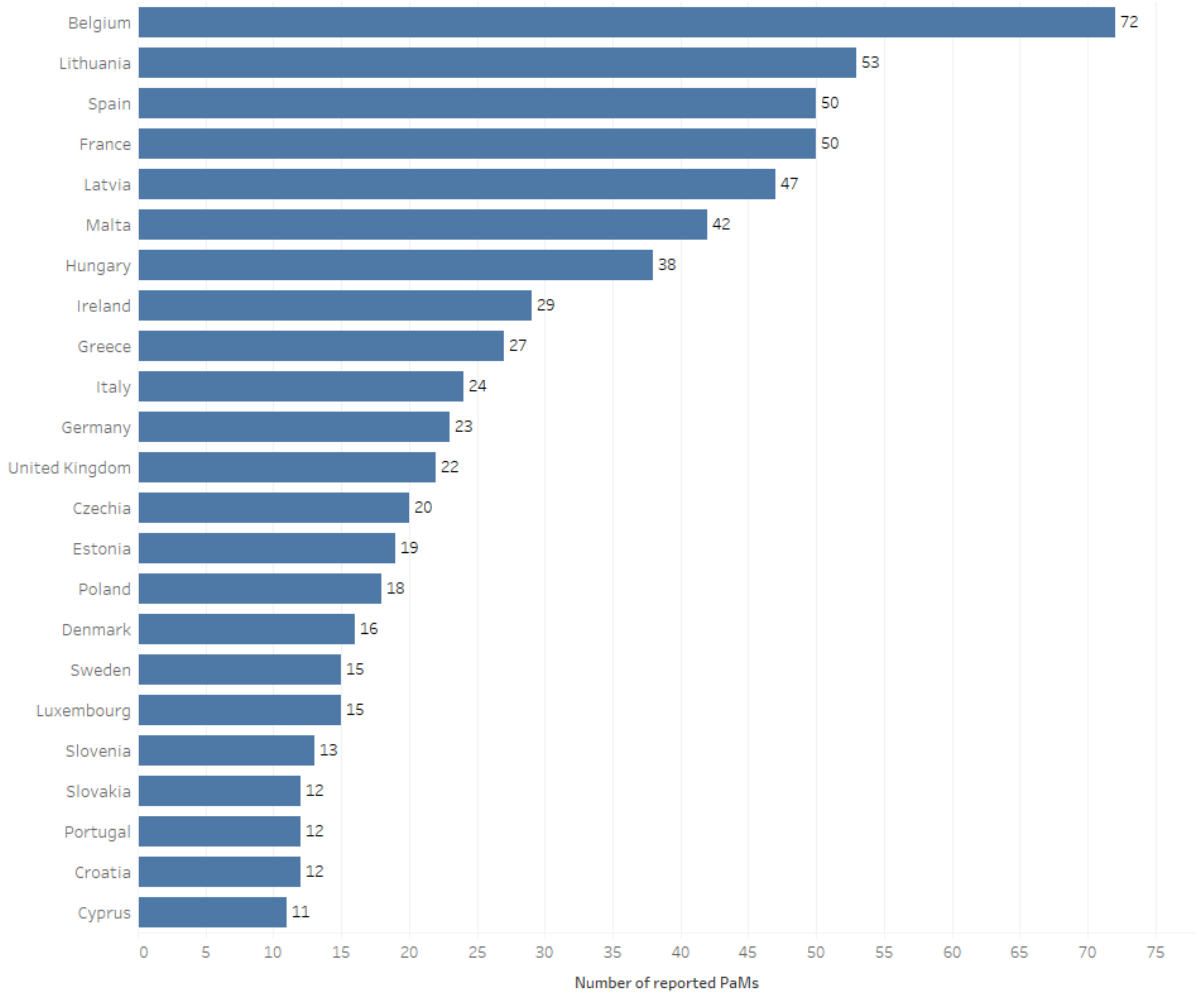
Similarly, to Ireland's previous submission, no PaMs were reported to be selected for adoption, with an implementation date of 2019 or later, and therefore no quantification of the PaMs was provided.

All of Ireland's single PaMs with an implementation date of 2019 or later were reported to have been reported under the MMR, whereas under the previous submission only 50 % of the PaMs were reported to overlap with the MMR PaMs.

4 Updated EU wide analysis

This chapter presents updated figures from the 2019 PaMs analysis report. In total, 661 individual PaMs have been reported and the total number of PaMs ranges from 11 (Cyprus) to 72 (Belgium) as shown in Figure 4.1. It is important to note that there is no strict definition of a single PaM and therefore Member States may differ in their approach.

Figure 4.1: Number of individual PaMs reported by Member State



The recent submissions have not resulted in a significant change to the sectors most frequently targeted by the reported PaMs.

Figure 4.2 shows transport is still the sector reported most frequently as affected by the additional air pollution PaMs. However, the number of PaMs impacting energy consumption has increased to be the second most impacted sector; previously agriculture and energy consumption were reported to be impacted equally.

Figure 4.2: Number of individual PaMs by sector

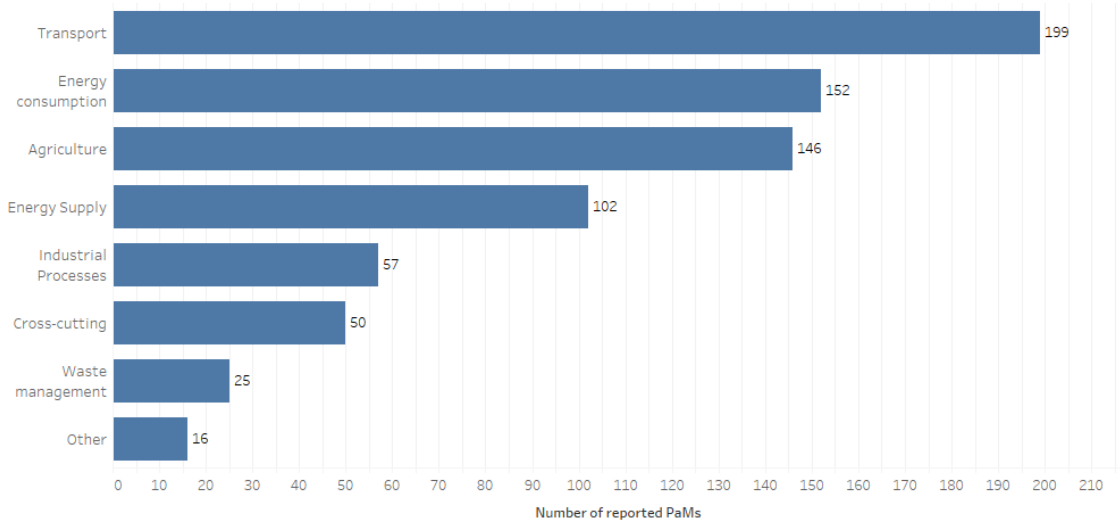
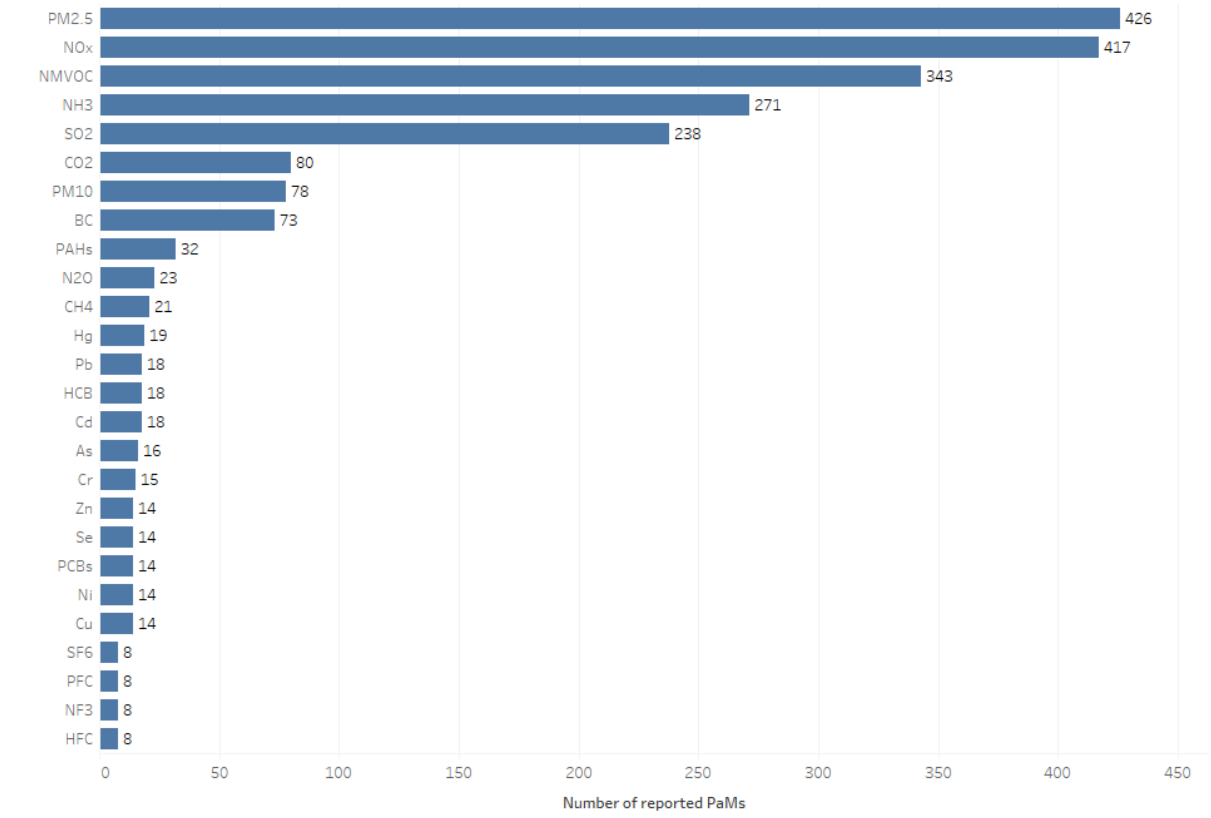


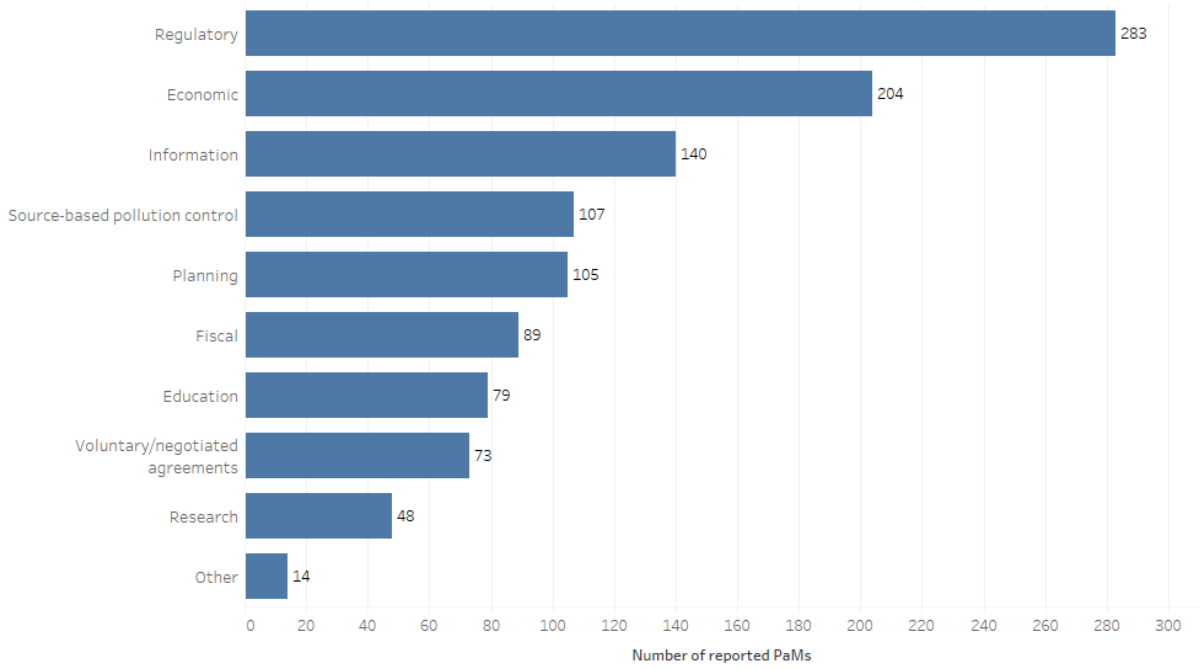
Figure 4.3 shows that, as previously, the reported PaMs most frequently targeted $PM_{2.5}$ emissions, closely followed by NO_X. The number of PaMs targeting CO_2 emissions has increased significantly in comparison to the other wider pollutants, increasing from 57 to 80 individual PaMs.

Figure 4.3: Number of individual PaMs targeting each pollutant



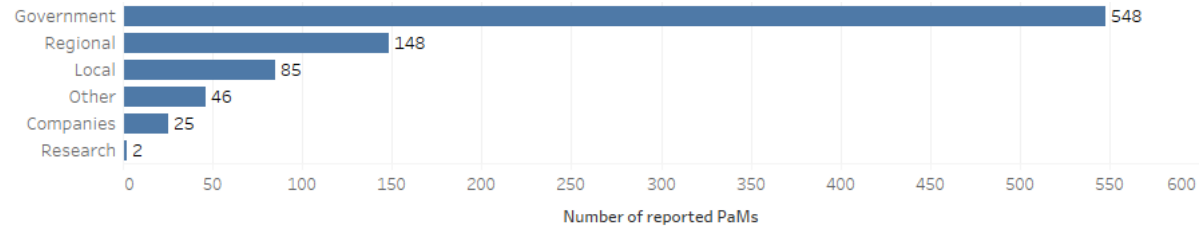
There has been no change to the proportion of PaMs reporting the different instrument types; regulatory PaMs continue to be the most frequently reported instrument type (Figure 4.4).

Figure 4.4: Number of individual PaMs by instrument types



The majority of PaMs reported a national government as an implementing entity (548 out of 661 individual PaMs). As found previously, with a few exceptions, all PaMs that were reported as being implemented by other entities were in addition to a national government entity, Figure 4.5.

Figure 4.5: Number of individual PaMs by implementing entity type



Of the 392 single PaMs reported as selected for adoption, 278 were reported with emission reduction values (green bars in Figure 4.6). These PaMs had emissions reductions reported for at least one year for at least one pollutant, either as an individual PaM or as part of a package. 114 single PaMs did not have associated emissions reductions reported (blue bars in Figure 4.6). Compared to the previous analysis this represents a small increase in the proportion of PaMs not quantified. As for the previous report, the highest emission reductions were reported for NO_X, Figure 4.7.

Figure 4.6: Reported quantification overview of PaMs selected for adoption

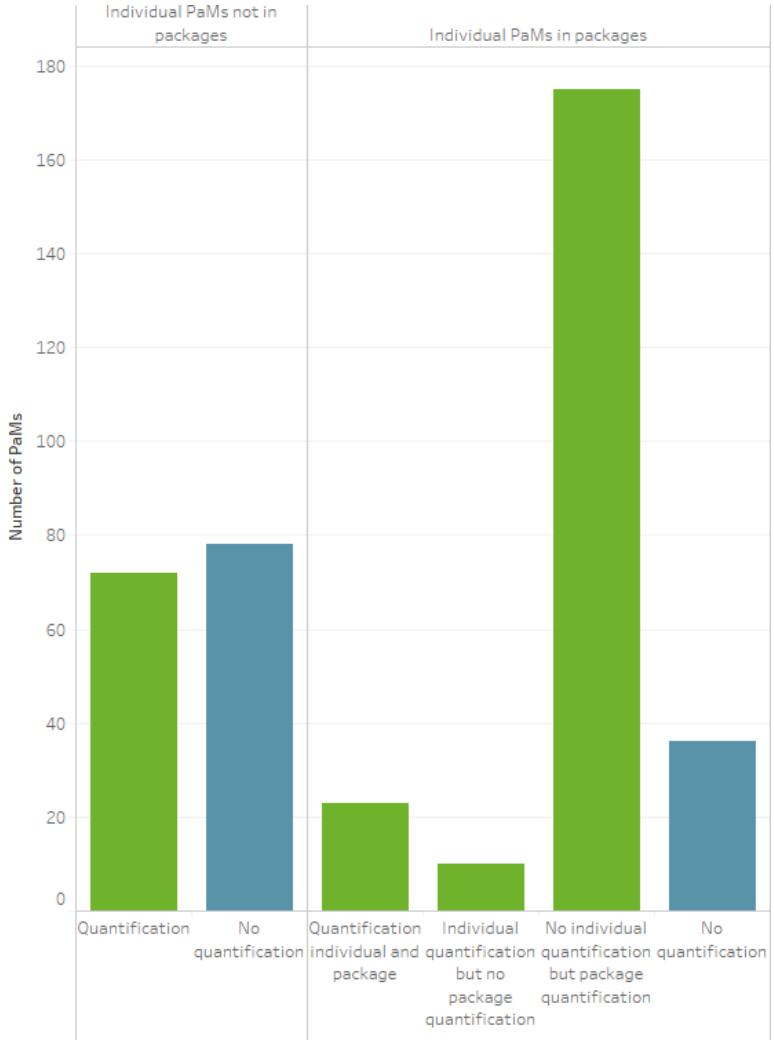
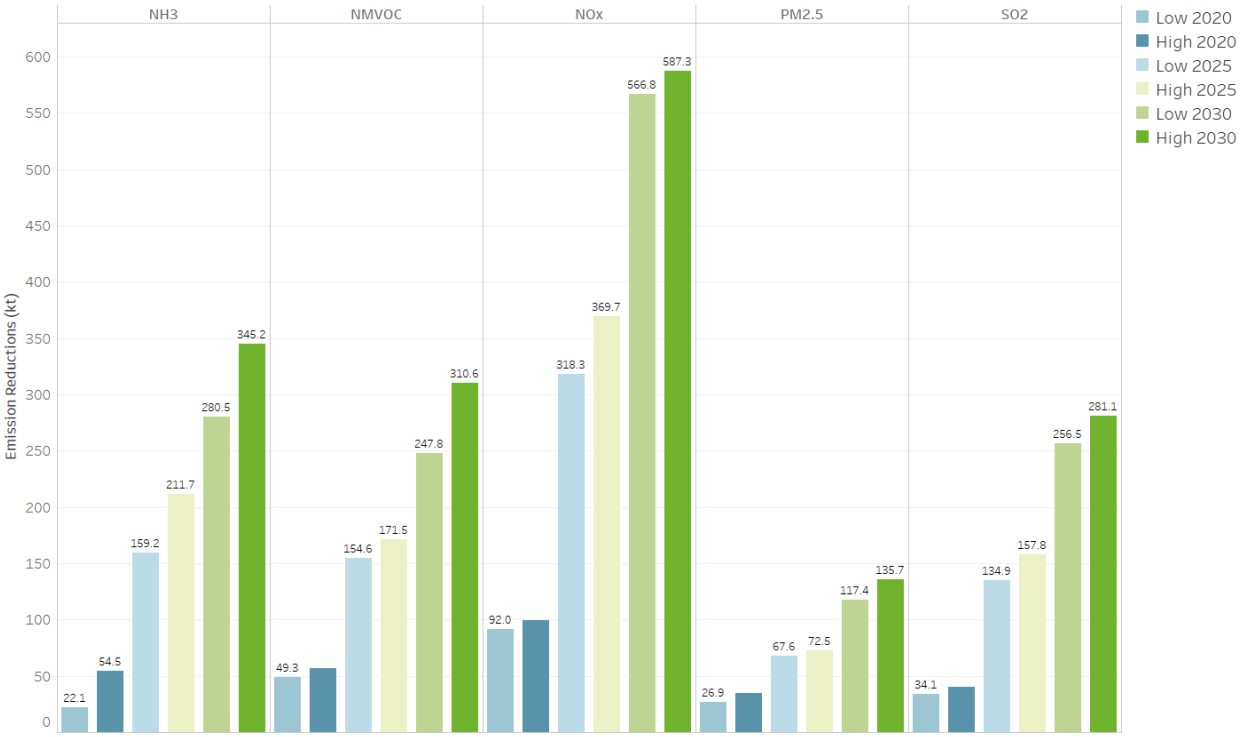


Figure 4.7: Reported emissions reductions (kt) of PaMs selected for adoption



Note: Member States could report a range of estimated emissions reductions for each PaM, shown in the figure as low and high estimates for each year.

5 Conclusion

This report contains information on national air pollution policies and measures (PaMs) reported by European Union (EU) Member States under Directive (EU) 2016/2284 of the European Parliament and of the Council on the reduction of national emission of certain atmospheric pollutants (the 'NECD') and Commission Implementing Decision (EU) 2018/1522. The NECD requires Member States to report on their additional national air pollution PaMs considered and selected for adoption to meet emission reduction commitments.

This information was reported for the first time in 2019 and analysis was undertaken and presented in a previous Eionet report 3/2020[8].

The data analysed in this report provides an update to the initial analysis ; two more Member States, Luxembourg and Greece, have reported their air pollution PaMs and three Member States, Latvia, Hungary and Ireland, have provided an updated submission. All Member States except Romania and Bulgaria have now submitted their additional air pollution PaMs under the NECD for the first time.

[8] https://www.eionet.europa.eu/etcs/etc-atni/products/etc-atni-reports/etc-atni-report-3-2020-analysis-of-the-air-pollution-policies-and-measures-reported-under-the-national-emissions-reduction-commitments-directive-necd

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