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Overview of reported national policies and measures on climate change mitigation in Europe in 2015

Information reported by Member States under the European Union Monitoring Mechanism Regulation

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European Environment Agency

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The overall coordination of the report was carried out by François Dejean and Magdalena Jozwicka (EEA) and the ETC/ACM task manager, Tom Dauwe (VITO).

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Abbreviations, symbols and units

CH_4	Methane
CO_2	Carbon dioxide
EED	Energy Efficiency Directive
EPBD	Energy Performance of Buildings Directive
ESD	Effort Sharing Decision
ETC/ACM	European Topic Centre for Air Pollution and Climate Change Mitigation
EU	European Union
EU ETS	European Union Emissions Trading System
GHG	Greenhouse gas
HFC	Hydrofluorocarbon
kt CO_2-eq.	Kilotonnes of carbon dioxide equivalent
LULUCF	Land use, land use change and forestry
MMD	Monitoring Mechanism Decision
MMR	Monitoring Mechanism Regulation
Mt CO_2-eq.	Mega (million) tonnes of carbon dioxide equivalent
N_2O	Nitrous oxide
NF_3	Nitrogen trifluoride
PaM	Policy and measure
QC	Quality control
RED	Renewable Energy Directive
SF_6	Sulphur hexafluoride
TTACCC	Timeliness, transparency, accuracy, completeness, consistency and comparability
UNFCCC	United Nations Framework Convention on Climate Change
WAM	With additional measures
WEM	With existing measures
WOM	Without measures

Summary

This technical report presents a synthesis of the information on climate change mitigation policies and measures (PaMs) ([1]) reported in 2015 by Member States under the European Union (EU) Monitoring Mechanism Regulation (MMR) ([2]). The report aims to provide an overview of the main characteristics of the PaMs implemented, adopted or planned by Member States, such as their objective, type, targeted sectors, entities responsible for their implementation, etc. Where available, Member States also reported quantitative information on the greenhouse gas (GHG) emissions savings achieved by PaMs (or groups of PaMs), both ex post (retrospectively) and *ex ante* (anticipated savings), as well as the projected and realised costs and benefits of the reported PaMs.

Information on PaMs was reported for the first time under the MMR in 2015. However, this reporting stream builds on the pre-existing reporting requirements of the United Nations Framework Convention on Climate Change (UNFCCC) ([3]) and uses of the former EU Monitoring Mechanism Decision (MMD) ([4]).

The report is based on the submissions, by 25 June 2015, of 20 Member States (the list of Member States is presented in Table 2.1). These reports were subject to quality control (QC) by the European Topic Centre for Air Pollution and Climate Change Mitigation (ETC/ACM). Nineteen Member States subsequently revised and resubmitted their reports. For the eight Member States that did not submit a report on their climate PaMs before 25 June 2015 or that did not use the online questionnaire, the most recent submissions on PaMs before 2015 (i.e. from 2013 or 2014) were used.

Key results

What kind of policies or measures have been reported by Member States?

In total, Member States reported information on 1 382 individual PaMs (including: 976 implemented, 183 planned, 142 adopted and 81 expired) and 73 grouped PaMs (a group consisted of between 2 and 62 individual PaMs).

Policies are primarily directed at the energy consumption (26%), transport (23%) and energy supply (10%) sectors. Sectors that represent a smaller share of emissions also have a smaller share of PaMs, namely the agriculture (9%), waste (7%), land use, land use change and forestry (LULUCF) (5%) and industrial processes (5%) sectors. A significant number of policies affect more than one sector (26%).

Most PaMs aim to improve the energy efficiency of buildings (18%) and to increase the share of renewable energy (11%). PaMs affecting the transport sector primarily aim to reduce emissions by improving energy efficiency (7%) and switching to low-carbon fuels or electric vehicles (7%).

The largest share of PaMs are economic (e.g. subsidies or feed-in tariffs) or regulatory (e.g. energy efficiency standards) in nature, each representing 30% of PaMs.

The most important years for the adoption of new PaMs were 2004 and 2014. Despite a dip in the number of policies started in 2012, 2010–2014 is the period in which the greatest number of reported PaMs began implementation.

([1]) 'Policies and measures' means all instruments which aim to implement commitments under Article 4(2)(a) and (b) of the UNFCCC, which may include those that do not have the limitation and reduction of greenhouse gas emissions as a primary objective (European Union Monitoring Mechanism Regulation. Regulation No 525/2013).
Article 4(2)(a) of the UNFCCC says that each of the Annex I party shall adopt national policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs.

([2]) Article 13 of Regulation (EU) No 525/2013 (see http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:165:0013:0040:en:PDF) and Article 22(1) of Commission Implementing Regulation (EU) No 749/2014 (see http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R0749&from=EN).

([3]) Parties to the Convention must submit national reports, such as National Communication and Biennial Reports (including information on policies and measures) on the implementation of the Convention to the Conference of the Parties.

([4]) Article 3.2(a) of Decision No 280/2004/EC (see http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32004D0280&from=EN).

Member States also identified the EU policy or policies that were responsible for the implementation of national PaMs. The most important EU policies were: the Renewable Energy Directive (RED) ([5]), the Energy Efficiency Directive (EED) ([6]), the Energy End-use Efficiency and Energy Services Directive ([7]), the recast Energy Performance of Buildings Directive (EPBD) ([8]) and the EU Emissions Trading System (EU ETS) ([9]).

How much greenhouse gas emissions were avoided and what further emission savings are expected from policies and measures?

Ex post emissions savings are significantly under-reported, with only three Member States (Finland, France and Spain) reporting information on the emissions reductions achieved for a mere 26 different PaMs ([10]). This does not constitute a sufficient basis for an analysis of the emissions savings achieved by existing national climate policies across the EU.

24 Member States reported quantified information on expected (*ex ante*) savings from 799 PaMs (58% of the total number of PaMs) by 2020 ([10]). No information was reported by Hungary and Portugal. The savings reported by Slovakia were not considered owing to quality issues ([11]). The sum of all expected emissions savings ([12]) from existing measures reported by 24 Member States for the year 2020 reaches 665 million tonnes of carbon dioxide equivalent (Mt CO_2-eq.). An additional 50 Mt CO_2-eq. is anticipated from the implementation of additional measures (already planned). The contribution of existing policies to projected GHG emission trends varies greatly across Member States, with reported savings from existing policies for 2020 ranging from close to 0% of total projected emissions ([13]) in Spain to 84% of total projected emissions in Malta (i.e. without any of these existing policy savings, Maltese emissions would have been close to double what they are projected to be today). Overall, the aggregated emissions savings from existing policies reported by 24 Member States correspond to 17% ([14]) of the total projected 2020 emissions.

Current energy generation and efficiency policies represent more than 55% of total expected emissions savings for 2020. Member States did not report sufficient emissions savings for 2025, 2030 and 2035 to allow for a quantitative analysis of such savings. In many cases, Member States present quantified savings for 2020 only, but not for 2025, 2030 or 2035, even though these policies are considered to deliver savings well after 2020.

PaMs savings that are related to EU policies account for 86% of all quantified savings for 2020. Despite their 24 % share in the total number of reported PaMs, the savings not related to EU policies are expected to contribute to only 14% of the total quantified savings for 2020.

How are the '20/20/20' targets ([15]) and the climate and energy package expected to contribute to emission reductions?

The reported data suggest that significant emissions savings are expected by 2020 through the implementation of EU policies that promote renewable energy and energy efficiency.

Existing PaMs linked ([16]) by Member States to EU policies supporting renewable energy ([17]) are expected to deliver savings of 359 Mt CO_2-eq. (54 % of the

([5]) Directive 2009/28/EC: http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32009L0028.
([6]) Directive 2012/27/EU: http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1399375464230&uri=CELEX:32012L0027.
([7]) Directive 2006/32/EC: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32006L0032.
([8]) Directive 2010/31/EU: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32010L0031.
([9]) Directive 2003/87/EC: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32003L0087, amended by 2008/101/EC and 2009/29/EC.
([10]) In addition, Denmark reported information on effects of PaMs. The format used was not suitable for further statistical analysis (no use of the online questionnaire) and could therefore not be taken into account in this report.
([11]) Slovakia reported emission savings higher than emissions.
([12]) The reported emission savings are add together. To address double counting the summed impacts are compared with projected emissions in 2020 to check whether the reported emission savings are credible. Moreover, the Member States have the option to group PaMs and report the aggregated impacts from several PaMs.
([13]) Excluding emissions and removals from LULUCF.
([14]) 16% for the 20 Member States that submitted in 2015 under the MMR.
([15]) EU '20/20/20' targets aim to achieve: 20% reduction of GHG emissions (compared to 1990 levels), 20% share of renewables in energy consumption and 20% savings of the EU's primary energy consumption (compared to baseline projections) by the year 2020.
For more information check: EEA, 2015, Trends and projections in Europe 2015 — Tracking progress towards Europe's climate and energy targets (http://www.eea.europa.eu/publications/trends-and-projections-in-europe-2015).
([16]) A 'link' means that a Member State indicated that the PaM was implemented in response to an EU policy. This has been checked during QC but ultimately this is interpretation of Member State whether or not that is the case.
([17]) Renewable Energy Directive; Biofuel Directive 2003/30/EC; Directive 2001/77/EC on the promotion of electricity from renewable energy sources; Directive 2014/94/EU on the deployment of alternative fuels infrastructure and Biomass Action Plan COM(2005) 628 final.

total reported emission savings) by 2020. Additional measures could deliver further savings of 11 Mt CO_2-eq. Most of the savings would take place under the EU ETS: 71% of the total emissions savings in 2020 are reported to take place in the ETS sectors ([18]) and 15% in the Effort Sharing Decision (ESD) sectors ([19]).

The total emissions savings expected from existing PaMs linked by Member States to EU energy efficiency policies amount to 135 Mt CO_2-eq (20 % of the total reported emission savings). Planned policies would deliver an additional saving of 8 Mt CO_2-eq.

Member States did not specifically relate substantial savings to the implementation of the Effort Sharing Decision (ESD) ([20]), although a large part of the total estimated savings by 2020 are expected to take place in the sectors covered by the ESD (those that are outside the EU ETS). This could be due to incomplete reporting of emissions savings by Member States or the fact that, so far, limited policy action might have been taken in direct response to the ESD, possibly because most Member States are currently well on track to achieve their ESD targets. The other explanation could be that emissions savings are reported for other specific policies, also implemented to reach the ESD targets, but not for the ESD itself (e.g. F-gas regulation ([21])).

Quality of the reported information

The assessment of the information reported by Member States highlights a number of quality issues, which affect the analysis and the conclusions that can be drawn from that information.

The completeness of the reported information per PaM has improved compared with previous reporting under the MMD in 2013. However, completeness remains the most important issue undermining the quality of the analysis. Besides the complete lack of reporting by some Member States, some sectors and important EU policies that require transposition into national legislation are missing in the reports of some Member States. In particular, information on *ex post* emissions savings, costs and benefits, and indicators, which are mandatory reporting requirements for Member States (when information is available) remain severely underreported.

Although the reporting requirements are fulfilled by Member States, the quality of quantitative information is subject to additional quality issues. Information on the emissions savings resulting from PaMs is either completely missing (e.g. for Hungary and Portugal ([22])) or incomplete (e.g. for Spain). The reported data can also be incorrect (for this reason, data from Slovakia on emissions savings were omitted from the analysis ([11])), not reported using the required tools (e.g. Denmark) or simply heterogeneous, i.e. estimated using methodologies which are not fully comparable across Member States (there is no specific requirement on the use of specific methods). There is therefore considerable scope to improve the reporting of emissions savings.

([18]) The ETS covers installations performing specified activities (such as: power stations and other combustion plants, oil refineries, coke ovens, iron and steel production facilities, installations involved in the production of cement clinker, glass, lime, bricks, ceramics, pulp, paper and board, aluminium, petrochemical, ammonia and nitric acid, adipic acid and glyoxylic acid, and aviation.

([19]) Decision 406/2009/EC http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2009.140.01.0136.01.ENG Sectors covered by the ESD not included in the EU ETS, such as transport (except aviation and international maritime shipping), buildings, agriculture and waste.

([20]) A total expected reduction of 27 Mt CO_2-eq. in 2020, accounting for 4 % of the total reported emission savings.

([21]) F-gas regulation; 842/2006/EC.

([22]) Portugal did report the emissions savings of one PaM, but this belonged to the 'with additional measures' scenario.

1 Introduction

This report presents a synthesis of the information on national climate change mitigation PaMs reported by EU Member States under the EU MMR ([23]) and its Implementing Regulation ([24]).

Information was reported for the first time under the MMR in 2015. The MMR subsequently replaced the MMD. Table 1.1 shows differences in reporting requirements between the MMD and the MMR.

For reporting under the MMD, Member States could report their information using a Microsoft Excel reporting template. The reporting requirements for the MMR were elaborated in Article 22 and Annex XI of Implementing Regulation No 749/2014 on the structure, format, submission processes and review of information reported by Member States pursuant to the MMR (see Annex 1).

To facilitate reporting by Member States, the EEA developed an online reporting questionnaire that followed the reporting template of the implementing act (see Annex 1). This template was available via ReportNet and included automatic quality checks to ensure completeness of the reported information.

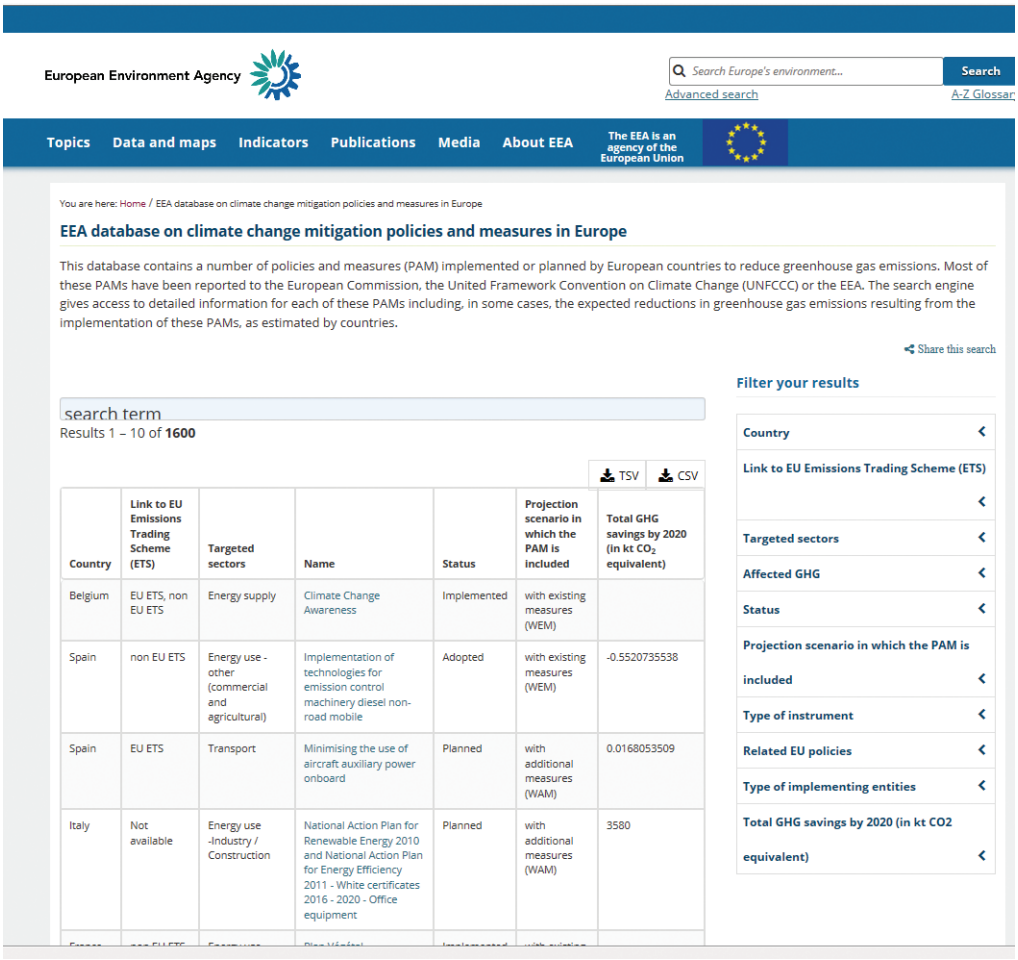
The data are aggregated by the EEA and can be accessed by the general public via the online PaM database viewer. Figure 1.1 presents the EEA viewer of climate change mitigation PaMs reported under the MMD. It will be refreshed and adapted to reflect the changes in the reported information under the MMR.

Table 1.1 Overview of the reporting requirements in the MMD and MMR

	MMD	MMR
Description	Not mandatory	Mandatory
Objective	Mandatory	Mandatory
Sector	Mandatory	Mandatory
GHG	Mandatory	Mandatory
Policy instrument type	Mandatory	Mandatory
EU policy	Mandatory	Mandatory
Status of implementation	Mandatory	Mandatory
Indicators	Mandatory	Mandatory, where used
Quantitative estimates *ex ante*, split between ESD and ETS	Mandatory	Mandatory, where available
Quantitative estimates *ex post*, split between ESD and ETS	Not mandatory	Mandatory, where available
Projected or realised costs and benefits	Not mandatory	Mandatory, where available
References to the assessments and the technical reports underpinning them	Not mandatory	Mandatory, where available

([23]) Article 13 concerning PaMs. Other articles of Regulation No 525/2013 relate to reporting requirements concerning national GHG emissions, projections, adaptation to climate change, etc.
([24]) Article 22(1) of Commission Implementing Regulation (No 749/2014).

Figure 1.1 EEA viewer of climate change mitigation policies and measures in Europe



Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

The search engine gives access to detailed information for each of the PaMs (or groups of PaMs). The EEA continues to work on improving and refreshing the display interface so that it reflects the changes in the reported information under the MMR.

1.1 Scope of the analysis

The analysis was based on information reported by Member States as part of their submissions under the MMR. Information requested for each measure that falls under Article 13 of the MMR and its implementing acts includes:

- name, objective (quantified if available) and description of each PaM or group of PaMs;
- type of instrument used;
- gases and sectors targeted;
- EU policy responsible for implementation of PaM;
- current status and period of implementation (start and end year);
- indicators used to monitor and evaluate progress;
- projected emissions savings (in years 2020, 2025, 2030 and 2035), divided between ETS and ESD, when available;
- entities responsible for implementing the policy;
- *ex post* and *ex ante* effects on GHG emissions;
- projected and realised costs and benefits of the reported PaMs.

An analysis is provided of the overall trends in the PaMs data, but focuses on four key themes, namely:

- characteristics of PaMs reported at national and European level;
- the emissions savings of policies with special focus on the EU ETS versus policies targeting emissions related to the ESD;
- outlook to 2020 emission reductions;
- the impact of energy efficiency and renewable energy policies on emissions.

1.2 Outline of the report

Chapter 2 provides information on the data availability and quality of submissions. Chapter 3 presents description of policies and measures reported by Member State. Chapter 4 provides estimates on the reported expected emissions savings resulting from the reported policies. Further, it addresses reported costs and benefits and presents information on reported indicators to monitor the reported policies. The final chapter provides recommendations to further improve the reporting on PaMs.

2 Data availability and quality of submissions

2.1 Quality control process by the European Topic Centre for Air Pollution and Climate Change Mitigation

After submission of the questionnaire, the ETC/ACM subjected the reported information to quality checks. This QC process is set up to improve Member States' submissions and to enable direct communication with Member States. The core of the QC checks are the timeliness, transparency, accuracy, completeness, consistency and comparability (TTACCC) criteria, which build the framework for the QC procedure:

- **Timeliness:** only four Member States met the reporting deadline of 15 March 2015. All other Member States submitted their reports after this deadline ([25]).
- **Transparency:** a verification of the submission took place. This including checking whether references, supporting information, the description and title of the PaM were provided.
- **Accuracy:** emissions savings were compared with total emissions or, when available, differences between without measures (WOM), with existing measures (WEM) and with additional measures (WAM) projections.
- **Completeness:** a verification took place to see if all mandatory reporting requirements had been fulfilled. In addition, a comparison was made between the number of policies provided against those previously reported under the MMD.
- **Consistency and Comparability:** this check focused on whether or not the information in all fields was consistent (e.g. whether the selected sector(s) or GHG(s) corresponded with the description and name of the PaM).

After QC, all findings were communicated to the Member States with, if needed, a request for clarification or revision of the reported information.

2.2 Data availability

Table 2.1 gives an overview of the types of data that were used for this report. Member States that did not submit or resubmit a report before 25 June 2015 have not been included. Seven Member States (Bulgaria, Cyprus, Greece, Latvia, Luxembourg, Poland and Slovenia) ([26]) did not submit a report before this date and, therefore, information reported for the MMD was used (for 2013/2014 ([27])). To do this, the structure of the 2014 PaM database was adjusted and transferred into the 2015 database, which was specifically designed for the new reporting procedure under the MMR. In only a few cases, the information was not compatible (i.e. PaMs objectives was an open text field in 2014, but a drop-down menu in 2015) or had to be adjusted (e.g. for the EU policies). For Member States that did submit a report in 2015, the latest version available before this date (first submission or resubmission) was used. In a number of cases, the review team adjusted the report, when this was deemed appropriate (e.g. when there was an obvious error in the report). Austria did submit a report in 2015, but as the online questionnaire was not used, the data from 2013/2014 were used in this report. In all figures and tables throughout this report Member States for which 2013/2014 data were used are identified with an asterisk.

([25]) Note: the online tool was made available in early March 2015.
([26]) In July, August and September 2015, Bulgaria, Cyprus, Greece, Latvia, Luxembourg, Poland and Slovenia submitted a report on PaMs, but this information could not be included for the report.
([27]) The previous reporting year was 2013, but some Member States adjusted their report in 2014 after additional QC by the ETC/ACM.

Table 2.1 Overview of the data used for this report

	2013/2014 [a]	2015			Data used
	Submission	Submission	Re-submission after QC	ETC/ACM adjustments	
Austria	Yes	No [b]	No	No	2013/2014
Belgium	Yes	Yes	Yes	Yes	2015
Bulgaria	Yes	No	No	No	2013/2014
Croatia	No	Yes	Yes	No	2015
Cyprus	Yes	No	No	No	2013/2014
Czech Republic	Yes	Yes	Yes	Yes	2015
Denmark	Yes	Yes	Yes	Yes	2015
Estonia	Yes	Yes	Yes	Yes	2015
Finland	Yes	Yes	Yes	Yes	2015
France	Yes	Yes	Yes	Yes	2015
Germany	Yes	Yes	Yes	Yes	2015
Greece	Yes	No	No	No	2013/2014
Hungary	Yes	Yes	Yes	Yes	2015
Ireland	Yes	Yes	Yes	Yes	2015
Italy	Yes	Yes	Yes	Yes	2015
Latvia	Yes	No	No	No	2013/2014
Lithuania	Yes	Yes	Yes	Yes	2015
Luxembourg	Yes	No	No	No	2013/2014
Malta	Yes	Yes	Yes	No	2015
Netherlands	Yes	Yes	Yes	Yes	2015
Poland	Yes	No	No	No	2013/2014
Portugal	Yes	Yes	Yes	No	2015
Romania	Yes	Yes	No	No	2015
Slovenia	Yes	No	No	No	2013/2014
Slovakia	Yes	Yes	Yes	Yes	2015
Spain	Yes	Yes	Yes	Yes	2015
Sweden	Yes	Yes	Yes	Yes	2015
United Kingdom	Yes	Yes	Yes	Yes	2015

Note: [a] The data for 2013/2014 was adjusted, where possible, to align with the changes in reporting in 2015 (e.g. Union policies were given the same name).

[b] Austria submitted an updated Excel report in 2015 and not the online questionnaire. Since the 2015 submission could not be processed for this report we therefore used the report of 2013/2014.

The ETC/ACM applied corrections to the reported information when:

- a Member State agreed with the observation from the ETC/ACM but did not modify its questionnaire. This occurred in only a few cases;
- a Member State modified the information initially reported, but the changes were incorrect or incomplete;
- a Member States requested that the ETC/ACM adjust the report on its behalf (e.g. when errors were found in the description or in the selected objectives by the reporters after resubmission);
- based on the feedback provided by a Member State provided feedback on the observation from the ETC/ACM, there seemed to be a misinterpretation of the reporting options.

Corrections were not applied when:

- it was not possible to adjust the questionnaire (e.g. if the description of the PaM was very short and lacking detail or when a reference to a technical report was missing);
- a Member State provided a satisfactory response to the observation made by the ETC/ACM;
- the report was not adjusted and no clear explanation was given but, based on the availably information, it could not be assessed with sufficient certainty that the manual change would be correct.

This means that, in some cases, changes were not applied, although Member States obviously used a different interpretation of the requested information (e.g. as regards the status of the PaMs and the affected GHGs). For certain PaMs, the affected sector was interpreted broadly, taking into account secondary or indirect effects.

Corrections that were implemented by the ETC/ACM included:

- objective: for eight PaMs, additional objectives (based on feedback from the Member States) were included and in one case, one objective (which was not in line with the selected sector) was deleted;
- description: five PaMs changed, either on the specific request of the Member State or based on information provided by the Member State in their response to QC;
- GHGs: seven PaMs for GHGs were deleted (two) or added (five) by the ETC/ACM;
- responsible entity: for five PaMs, additional responsible entities were included;
- sector: for six PaMs, the ETC/ACM adjusted the selected sectors in line with the description of the PaM and feedback from Member States;
- union policy: 19 PaMs were corrected, mainly changing status from related (which is the default setting in the questionnaire) to unrelated, when no EU policy was selected;
- status: for 8 PaMs, information on the implementation status was changed or added, and for four PaMs, the start/end year was changed;
- instrument type: for nine PaMs, information mainly relating to the difference between economic and fiscal factors, was updated;
- reference: for 18 PaMs, a link to a relevant document was included.

3 Description of policies and measures reported by Member States

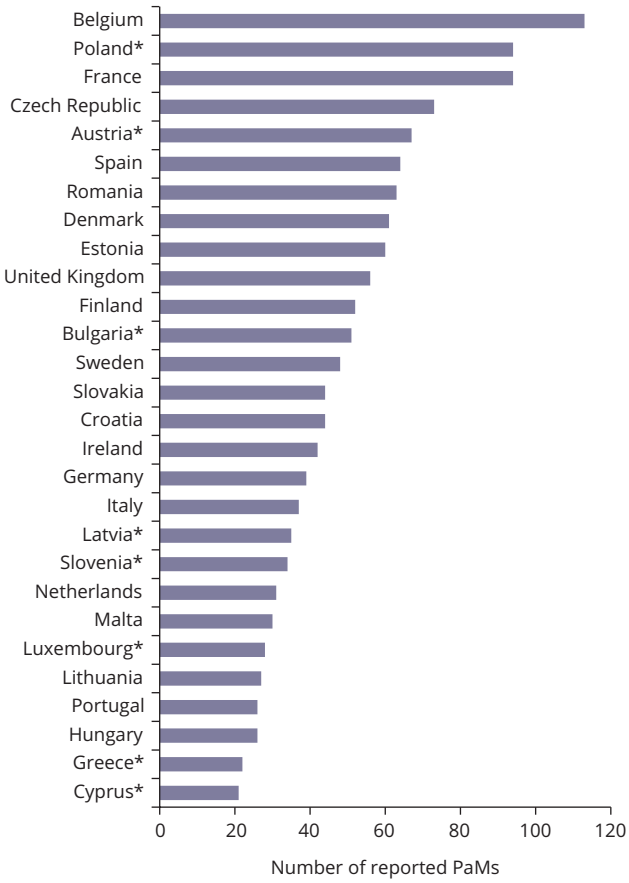
This section presents the information reported by Member States on the characteristics of the different PaMs. This includes the objectives, the sectors targeted, the GHGs affected, the instrument type, the implementing entity, the status of implementation and the EU policy that led to the development of the PaM. This section provides a high-level overview of the characteristics of the PaMs reported in Table 1 ([28]) of the 2015 submissions under the MMR or the corresponding information requested in the 2013/2014 template of the MMD.

3.1 Distribution by Member State

Further information on the numbers of PaMs by Member State is provided below. All Member States have been compared equally, based on the data reported by the individual countries. Only single PaMs have been included here. In the new reporting tool, Member States have the possibility to combine individual PaMs into a group for reporting purposes (e.g. when only the impact of a group of PaMs on GHG emissions is known). In total, 1 382 single PaMs have been reported (Figure 3.1): 1 030 from 2015 reporting (on average, 52 per Member State) and 352 from the 2013/2014 reporting period (on average, 44 per Member State).

The Member State with the largest number of single PaMs is Belgium, followed by Poland ([29]) and France. Differences among countries could be related to the policy process (some Member States have few but large instruments, whereas other Member States have many smaller PaMs) or how information was reported (with some Member States reporting in more detail than others). The large number of climate PaMs in Belgium, for instance, could be related to the fact that climate policy is for an important part, but not only, a regional competence and, therefore, each region will implement its own mitigation PaMs, thereby inflating the overall number of PaMs.

Figure 3.1 Number of reported policies and measures per Member State



Note: (*) Member States for which 2013/2014 data were used.

Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

3.2 Sectors targeted

The reported PaMs may act upon emissions across a range of emission sources and sectors. In their submissions, Member States were required to report

([28]) Table 1 in Annex XI of Commission Implementing Regulation (No 749/2014) and in the EEA online reporting questionnaire (see Annex 1: A.3. of this report).

([29]) Member States for which 2013/2014 data were used (full list of Member States is presented in Table 2.1).

all the sectors targeted by an individual PaM. The Member States were requested to select a sector from: agriculture, energy consumption (consumption of fuels and electricity by end users such as households, services, industry and agriculture), energy supply (extraction, transmission, distribution and storage of fuels as well as energy and electricity production), transport, industrial processes, waste, LULUCF, cross-cutting and other.

The aggregated information is presented in two different ways in Figure 3.2. The grey bars present the data as they were reported by the Member States. Member States, however, have the option to select more than one sector per PaM or to select 'cross-cutting' (i.e. a PaM that covers more than one sector) as the sector where the PaM is implemented. The green bars, therefore, present the adjusted results when the sector is changed to 'cross-cutting' where more than one sector was selected. The percentages are calculated based on these adjusted data. This way, there is a more consistent approach in reporting cross-cutting among the countries. Across Member States the most important sectors that were targeted were the energy consumption (26%) and energy supply sectors (10%) and the transport sector (23%), which are also the most important sources of GHGs in Europe (Figure 3.2). Cross-cutting applied to 16% of PaMs.

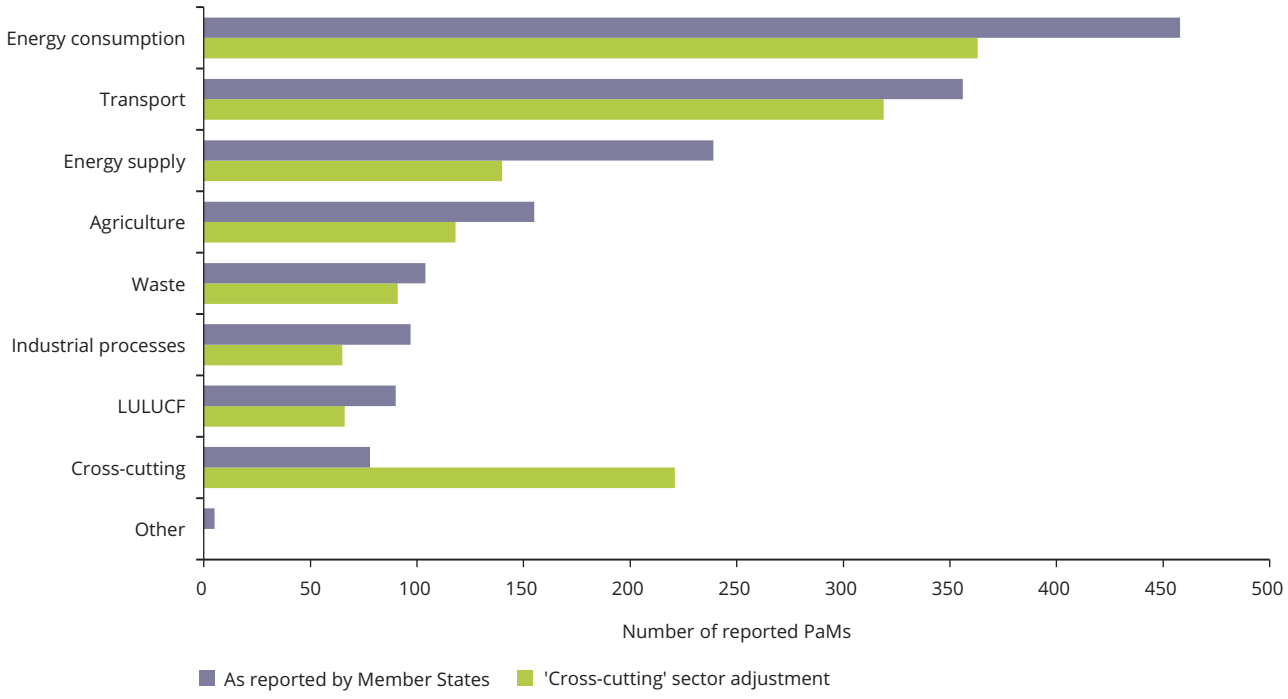
Energy supply has a large share of policies but, as can be seen in Figure 3.2, many policies affecting energy supply also affect other sectors (note the relative difference between the blue and red bars for energy supply). In more than 40% of cases in which energy supply was selected, this was done in combination with another sector. This is the highest share, except for the sector 'other', which was in all four cases combined with another sector.

Sectors that are least covered by PaMs in the EU are LULUCF (5%), waste (7%), agriculture (9%) and industrial processes (5%). These sectors also have a relatively smaller share in the total GHG emissions. This is comparable with the situation in previous PaMs reporting under the MMD.

When comparing the selected sectors across Member States (Table 3.1), there are differences in the distribution of the number of PaMs per sector. Sectors that receive little focus at the overall EU level may, conversely, be relatively important in individual Member States. Examples include industrial processes in Germany and Slovakia (15%), LULUCF in Estonia (20%), waste in Hungary (23%) and agriculture in Austria ([29]) and Poland ([29]) (21%).

In 16 Member States, one or more sectors are reported to have no specific PaMs. This does not

Figure 3.2 Number of policies and measures reported per sector in the EU



Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

necessarily mean that in these cases no action is taken to reduce emissions; emissions could be targeted by cross-sectoral PaMs, for example. The sector that is omitted the most is LULUCF (by 10 Member States including Austria ([29]), Finland and Germany). The Member State with the fewest sectors linked to PaMs is Luxembourg ([29]), which has only PaMs targeted towards energy consumption, energy supply and transport (which actually cover almost 90 % of its total GHG emissions (excl. LULUCF)). Luxembourg ([29]) also reported no cross-cutting measures, which could signal missing PaMs.

The number of PaMs is not necessarily a robust indicator of the importance of the sector or of the total emissions savings that policy intervention will have in these sectors.

Table 3.1 Share of policies and measures targeting specific sectors per Member State (% of total)

As reported by the Member States

	Austria*	Belgium	Bulgaria*	Croatia	Cyprus*	Czech Republic	Denmark	Estonia	Finland	France	Germany	Greece*	Hungary	Ireland	Italy	Latvia*	Lithuania	Luxembourg*	Malta	Netherlands	Poland*	Portugal	Romania	Slovakia	Slovenia*	Spain	Sweden	United Kingdom	EU
Energy consumption	19	32	26	16	38	32	29	16	34	30	44	36	31	53	34	42	7	68	41	34	10	26	23	31	23	20	24	43	29
Transport	32	22	18	15	29	21	23	23	13	28	12	18	15	21	21	16	25	29	16	19	33	29	19	15	21	32	27	16	22
Energy supply	13	15	21	21	14	19	16	21	10	8	10	23	4	17	32	29	21	4	13	13	9	15	24	6	21	7	12	17	15
Agriculture	19	5	14	3	5	9	10	6	9	13	0	14	19	2	5	4	11	0	9	9	22	6	11	15	13	9	6	9	10
Waste	4	2	7	15	14	2	13	10	7	2	15	9	23	2	3	4	14	0	16	3	10	3	10	6	4	8	2	2	7
LULUCF	0	2	11	8	0	6	7	21	3	13	0	0	8	0	0	0	14	0	3	0	4	12	3	8	2	7	8	9	6
Industrial processes	13	9	0	13	0	4	3	3	15	5	20	0	0	2	3	2	7	0	3	0	3	6	3	13	13	8	4	3	6
Cross-cutting	0	13	4	8	0	6	0	0	9	1	0	0	0	2	0	2	0	0	0	22	10	3	6	2	2	8	18	0	5
Other	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	2	0

Note: (*) Member States for which 2013/2014 data were used.

Colours represent the share of policies and measures targeting specific sectors per Member State. The darker green colour, the higher share. The darker orange, the lower share.

Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

Adjusted for cross-cutting measures

	Austria*	Belgium	Bulgaria*	Croatia	Cyprus*	Czech Republic	Denmark	Estonia	Finland	France	Germany	Greece*	Hungary	Ireland	Italy	Latvia*	Lithuania	Luxembourg*	Malta	Netherlands	Poland*	Portugal	Romania	Slovakia	Slovenia*	Spain	Sweden	United Kingdom	EU
Energy consumption	13	27	24	14	38	25	25	17	35	31	44	36	31	50	35	29	7	68	40	32	7	23	17	32	12	14	23	45	26
Transport	33	25	20	14	29	22	21	23	10	29	13	18	15	21	22	17	26	29	17	19	34	23	19	16	21	38	27	16	23
Cross-cutting	12	27	10	34	0	30	13	3	23	22	5	0	0	10	0	29	4	0	7	26	14	19	14	7	35	23	23	4	16
Energy supply	4	11	14	9	14	8	10	20	4	3	8	23	4	12	32	11	19	4	13	13	7	8	19	5	3	0	10	16	10
Agriculture	21	4	16	2	5	7	7	3	10	3	0	14	19	2	5	6	11	0	3	6	21	8	13	14	12	5	6	9	9
Waste	4	1	6	9	14	3	15	10	8	0	15	9	23	2	3	6	15	0	13	3	11	4	11	7	0	9	2	2	7
LULUCF	0	2	12	9	0	3	7	20	0	10	0	0	8	0	0	0	11	0	3	0	2	12	3	7	3	3	8	7	5
Industrial processes	12	4	0	9	0	3	3	3	12	2	15	0	0	2	3	3	7	0	3	0	3	4	3	14	15	8	0	2	5
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: (*) Member States for which 2013/2014 data were used.

Colours represent the share of policies and measures targeting specific sectors per Member State. The darker green colour, the higher share. The darker orange, the lower share.

Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

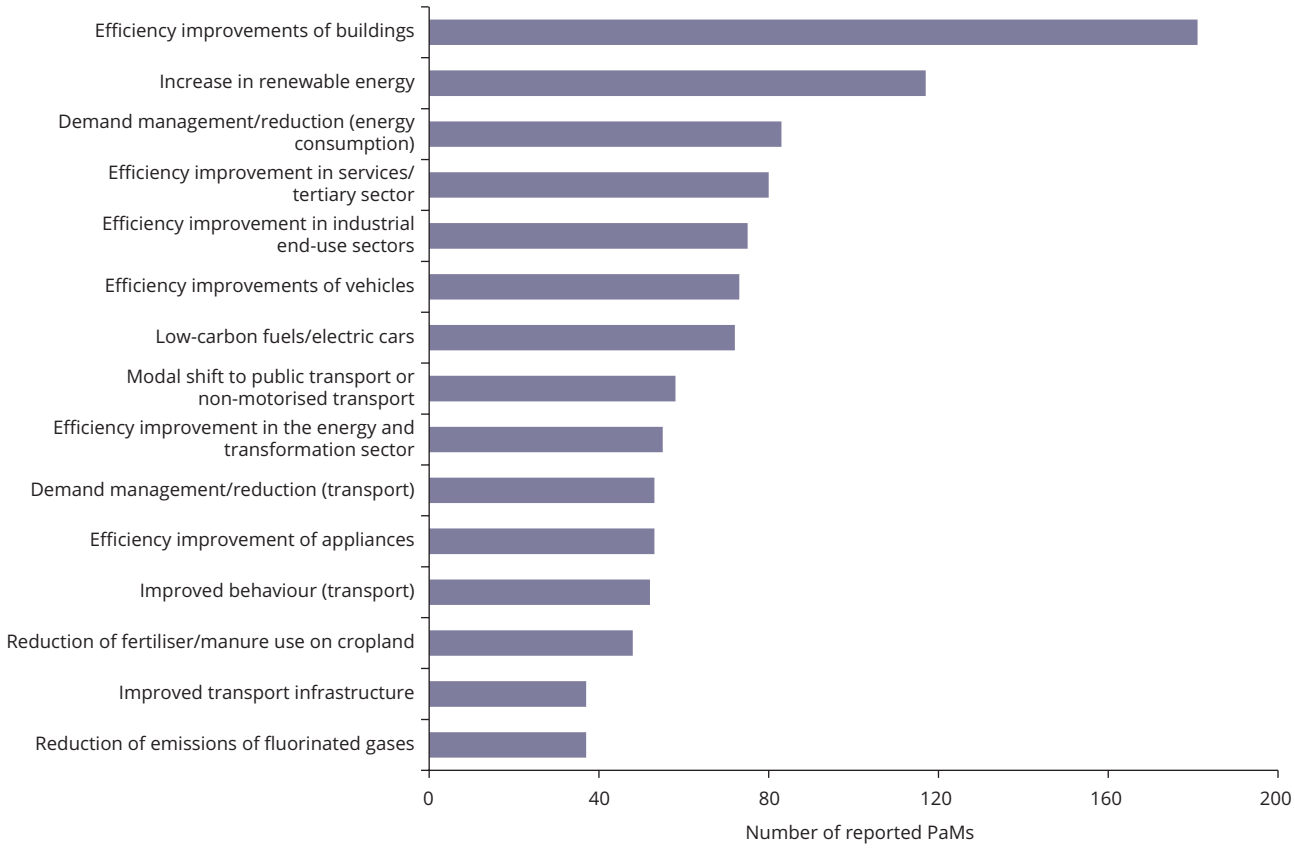
3.3 Objectives selected

For the 2015 reporting, Member States had to select one or more appropriate objectives from a predefined list for each PaM. The objectives were linked to the selected sectors. This was not the case in 2013/2014, when Member States could report the objective of the PaM in an open text field. In this section, only those 20 Member States that submitted a report in 2015 using the online questionnaire have been included.

Across sectors, the 15 most frequently selected objectives are presented in Figure 3.3. Improving efficiency in buildings was the objective of 181 of 1 030 (18%) PaMs ([30]), either alone or in combination with other objectives. The next most common objective was the promotion of renewable energy (11% of PaMs). The most frequently reported objectives were almost exclusively linked to the energy supply, energy consumption and transport sectors. The only exceptions are reduction of fertiliser/manure use on cropland (agriculture, 5% of PaMs) and emission reduction of fluorinated GHGs (industrial processes, 4% of PaMs).

In the energy supply sector (Figure 3.4), the predominant objective was the promotion of renewable energy. In total, decarbonising the energy system (through use of renewable energy, nuclear energy and fuel switching) accounted for 67% of all reported objectives in this sector. Improving efficiency in the energy supply sector (including reduction of losses) accounted for 29% of the reported objectives. Among the other objectives reported were promotion of Combined Heat and Power, the development of electricity networks and the promotion of energy storage.

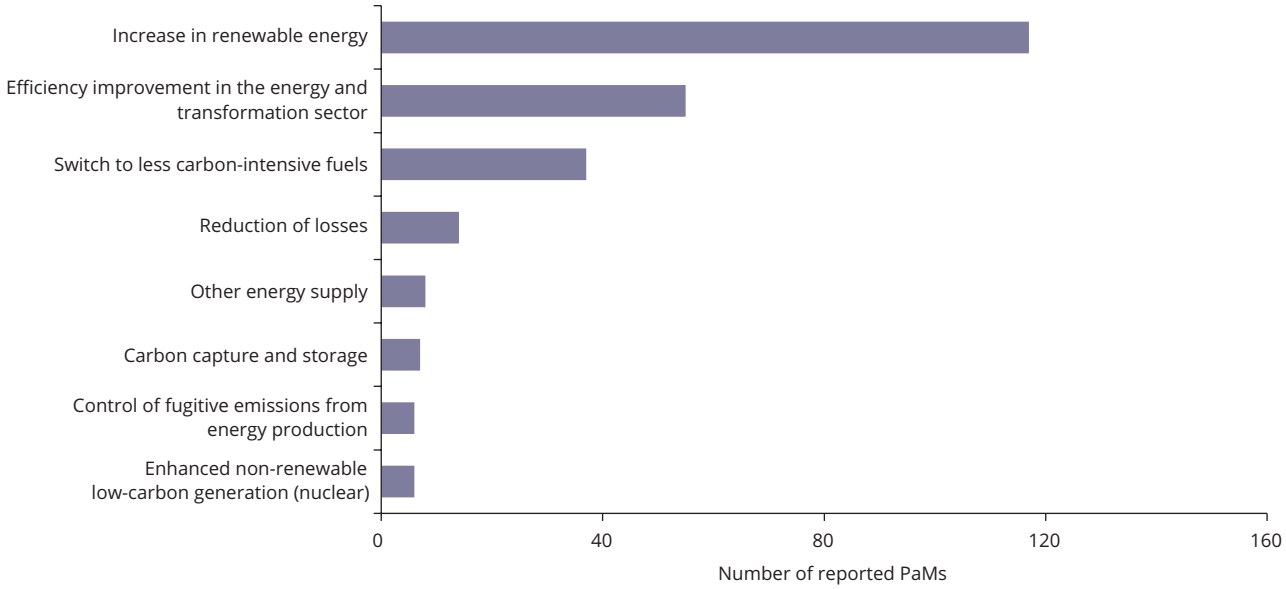
Figure 3.3 Number of policies and measures reported per objective related to all sectors



Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

([30]) This includes only the PaMs from those Member States that submitted a report using the online questionnaire before 25 June 2015.

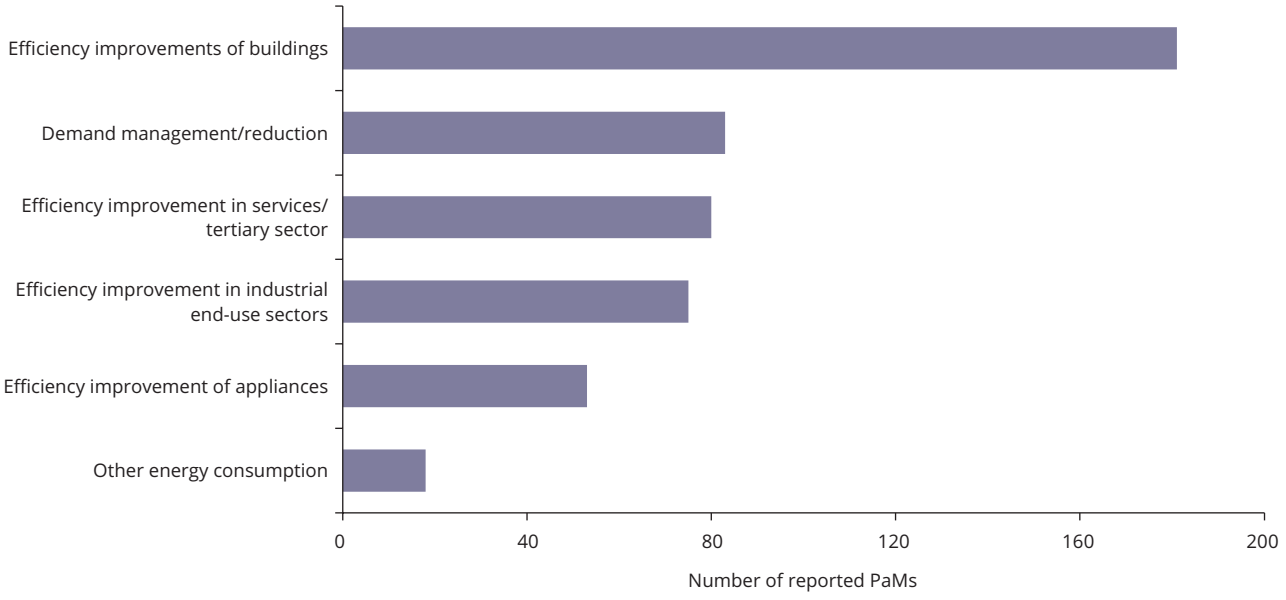
Figure 3.4 **Number of policies and measures reported per objective in relation to the energy supply sector**



Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

As regards energy consumption (Figure 3.5), improving energy efficiency was reported in 79% of all objectives related to energy consumption. Improving energy efficiency in buildings was the most widespread objective, reported in 40% of PaMs with energy consumption objectives. There could be several explanations for this. First, there are several EU policies that have direct and indirect links to improving the

Figure 3.5 **Number of policies and measures reported per objective related to the energy consumption sector**



Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

energy efficiency of buildings, such as the recast Energy Performance of Buildings Directive (EPBD) and the Energy Efficiency Directive (EED). Second, improving energy efficiency in buildings is a relatively cost-efficient way both to increase energy efficiency and to reduce GHG emissions. The PaMs related, among other things, to the building regulations in the different Member States and the (energy) labelling of houses.

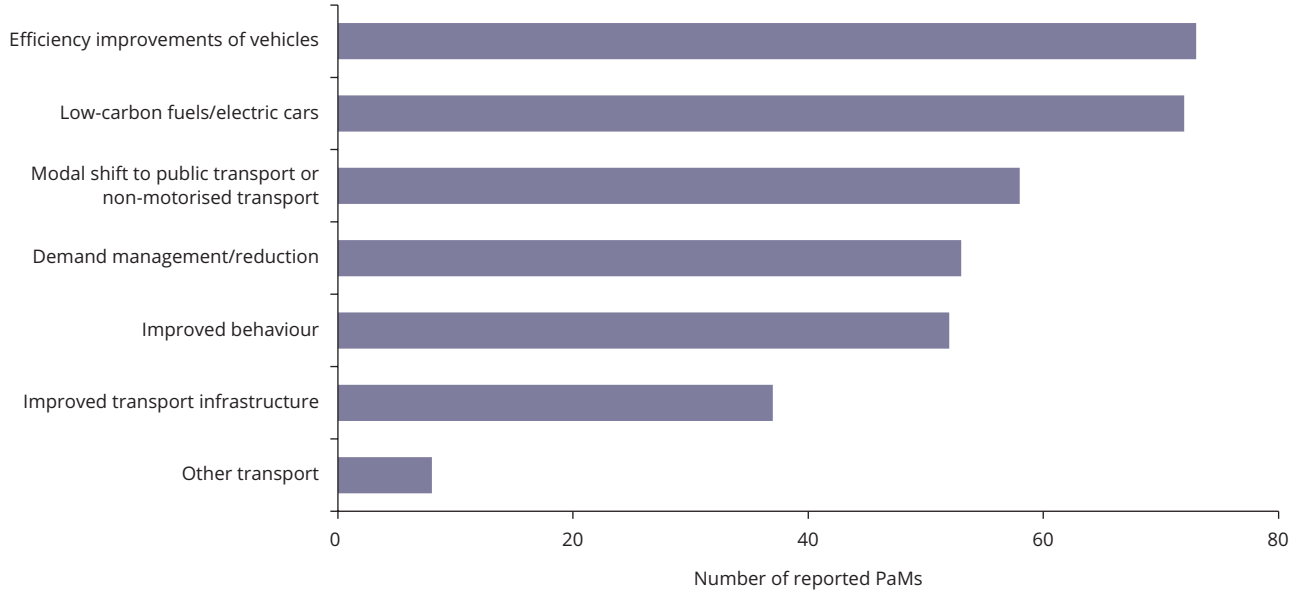
In the transport sector (Figure 3.6), objectives are more widely distributed among the different options. The objectives can be divided into two large groups. The first group contained objectives that aim to reduce the emissions factor of the vehicle fleet, by improving the efficiency of vehicles (21% of PaMs) and promoting low-carbon fuels (21% of PaMs). The second group of objectives focused on behavioural changes by users (15% of PaMs), for instance encouraging more efficient driving, reducing demand (15% of PaMs) and promoting the modal shift to public transport (17% of PaMs). Improved transport infrastructure, which does not belong to either group, represented 11% of PaMs.

In the industrial processes sector (Figure 3.7), objectives related to the emission of fluorinated GHGs were reported most frequently. The objectives 'reduction of emissions' and/or 'replacement of fluorinated gases' were reported by 44% and 15% of PaMs, respectively, in the industrial processes sector and in cross-cutting PaMs with objectives in industrial processes.

As in the transport sector, objectives related to agriculture, LULUCF and waste were relatively variously reported. The most important objectives per sector were:

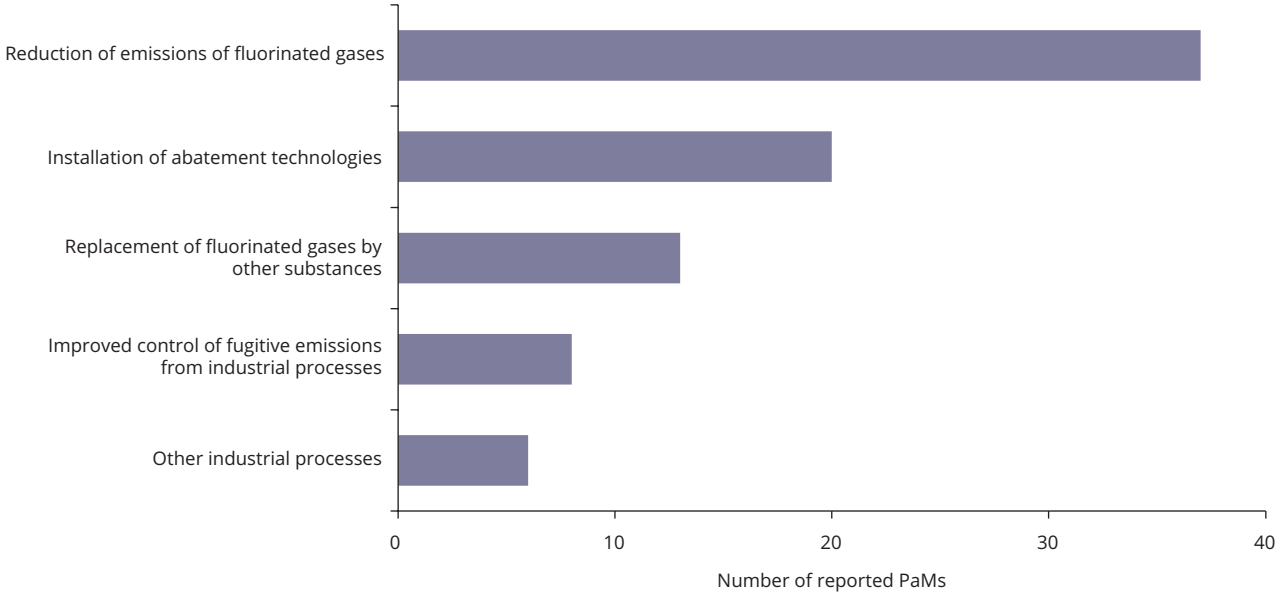
- agriculture: reduction of fertiliser/manure use on cropland (33% of PaMs; see Figure 3.8);
- LULUCF: promotion of afforestation and reforestation (37% of PaMs) and enhancement of forest management (26% of PaMs; see Figure 3.9);
- waste: reduction of landfilling (28% of PaMs) and enhancement of recycling (25% of PaMs; see Figure 3.10).

Figure 3.6 Number of policies and measures reported per objective in relation to the transport sector



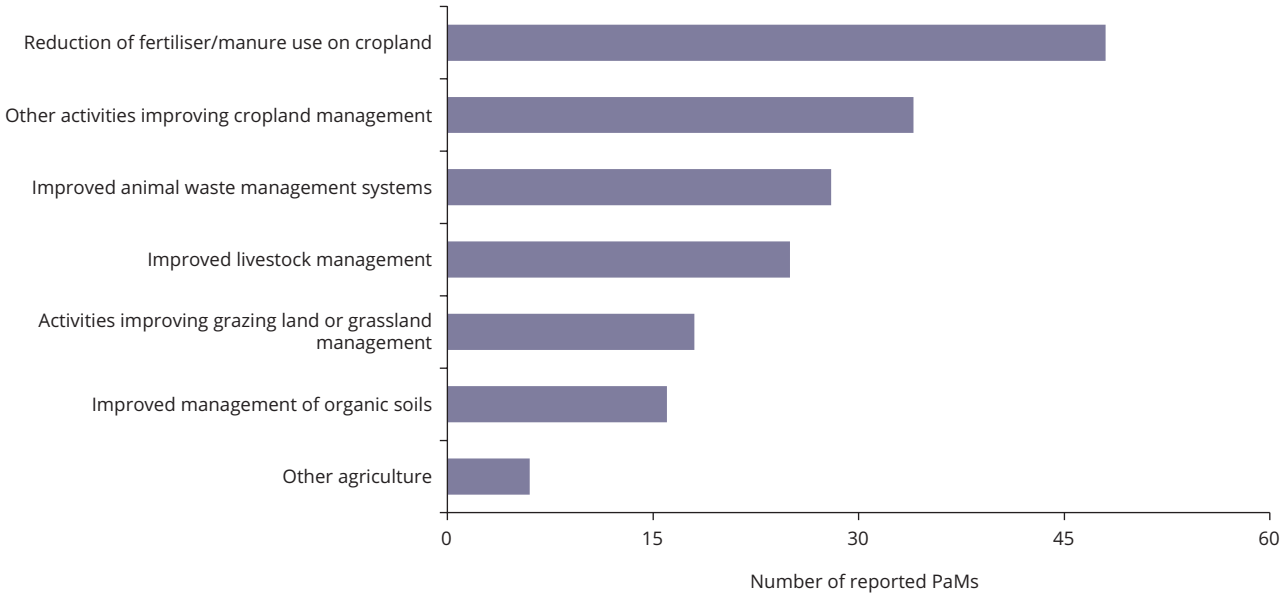
Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

Figure 3.7 **Number of policies and measures reported per objective in relation to the industrial processes sector**



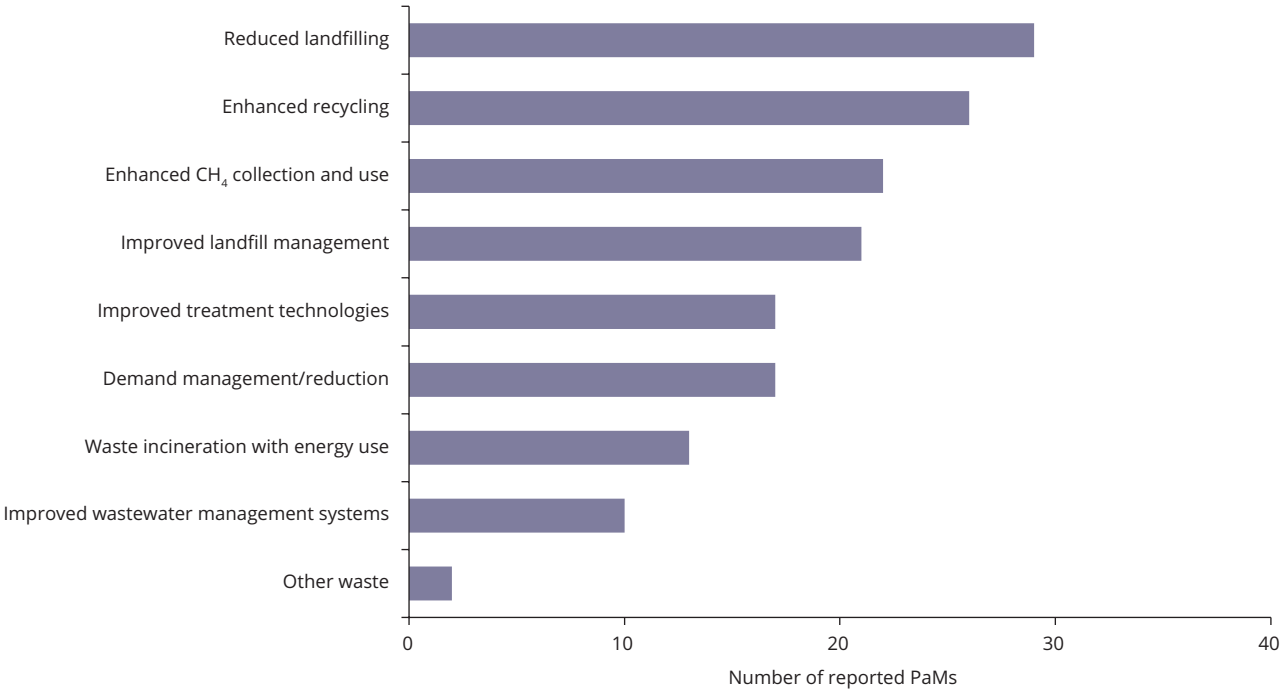
Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

Figure 3.8 **Number of policies and measures reported per objective in relation to the agriculture sector**



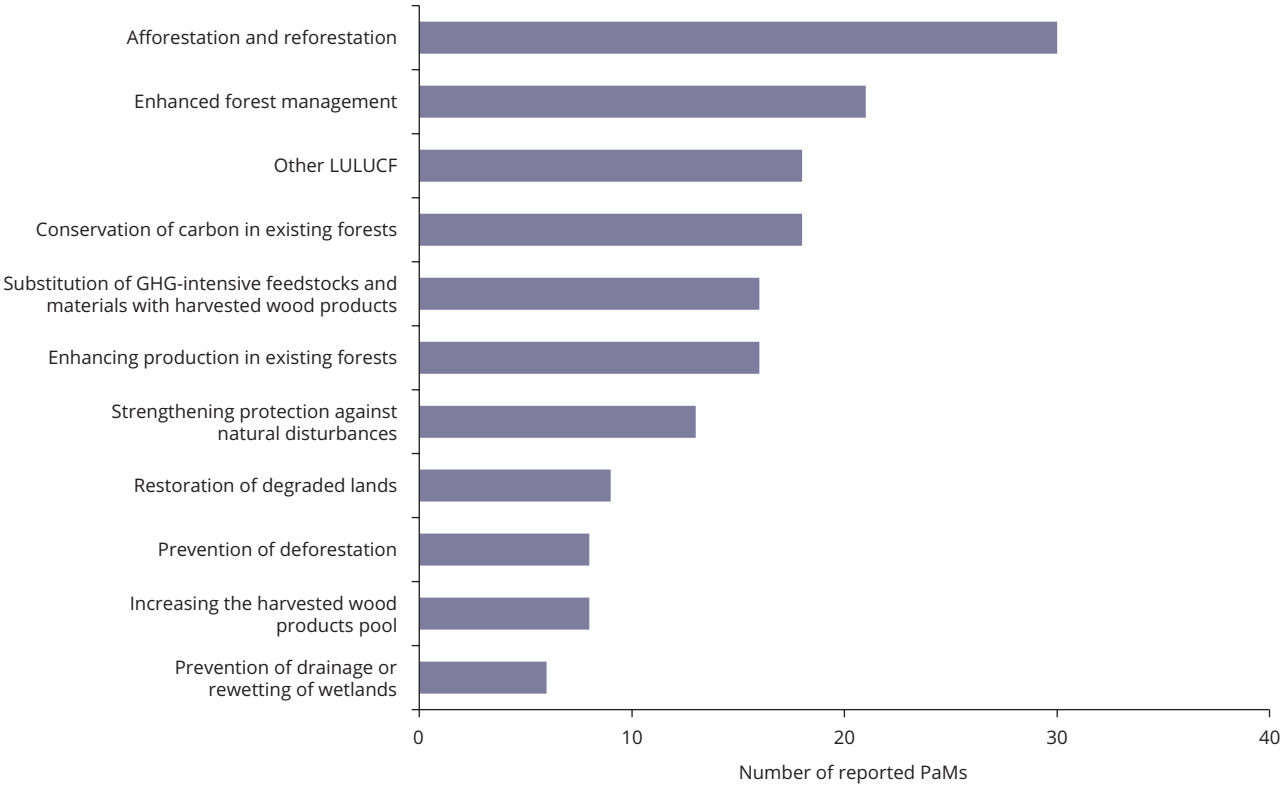
Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

Figure 3.9 Number of policies and measures reported per objective in relation to the LULUCF sector



Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

Figure 3.10 Number of policies and measures reported per objective in relation to the waste sector



Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

3.4 Greenhouse gases affected

Member States can select more than one GHG per PaM, which means that the total number is larger than the number of PaMs. By far the most important GHG selected by Member States is carbon dioxide (CO_2). The number of policies clearly reflect the prevalence of GHGs, with CO_2 (84% of PaMs) being the predominantly targeted GHG, followed by methane (CH_4) (21%) and nitrous oxide (N_2O) (18%). Nitrogen trifluoride (NF_3) (1%) is the least reported GHG, but it should also be mentioned that in the 2013/2014 reporting, NF_3 was not included in the list of GHGs. The other fluorinated GHGs, namely hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6), are each reported in 4–5% of PaMs.

CO_2 is reported in many cases as the only GHG targeted by a PaM (82%). For the other GHGs, this percentage is much lower, from 32% for CH_4 to only 4% for PFCs (Table 3.2). Therefore, these GHGs are not only linked to fewer PaMs but, in most cases, are also reported relatively more often in combination with another GHG. The most important combinations of GHGs are the group of the three GHGs (CO_2, CH_4 and N_2O) and the fluorinated GHGs (HFC, PFC and SF_6) (the latter group not so much in absolute terms, but in relative numbers). There are more PaMs that affect HFCs, PFC and SF_6 in combination than there are PaMs that affect HFC, PFC or SF_6 individually.

Table 3.2 GHGs and combination of GHGs reported by Member States

GHG	Number of PaMs
CO_2	951
CH_4	93
N_2O	49
HFC	15
SF_6	3
PFC	2
CO_2, N_2O	31
CO_2, CH_4	30
CH_4, N_2O	29
CO_2, HFC	1
CO_2, PFC	1
HFC, PFC	1
HFC, SF_6	1
CO_2, CH_4, N_2O	120
HFC, PFC, SF_6	29
CO_2, N_2O, PFC	4
CO_2, HFC, PFC	1
CO_2, CH_4, N_2O, HFC	1
All but CO_2	1
All but NF_3 ([a])	5
All	13

Note: ([a]) NF_3 was not an option in the 2013/2014 reporting, so is included only in the 2015 Member States' reports.

Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

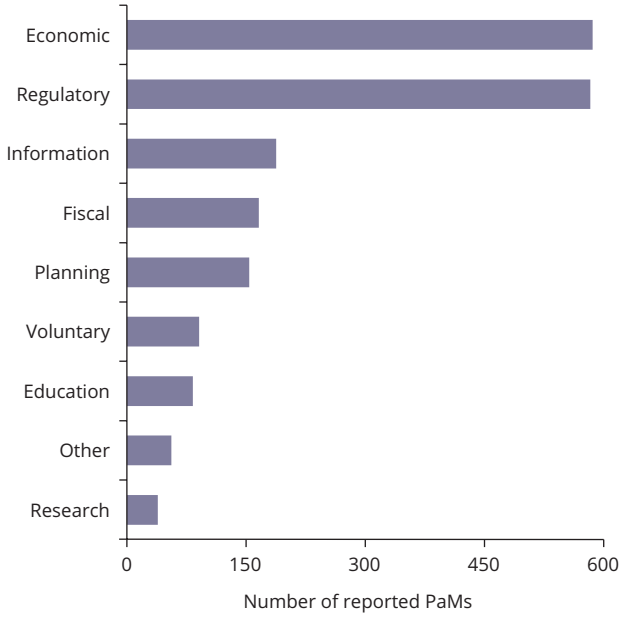
3.5 Type of instruments used

Member States are required to report the type of instrument that is associated with each of the PaMs. These instruments can be classified ([31]) as:

- **economic:** a PaM that provides an economic incentive to reduce GHG emissions. This includes measures such as infrastructure programmes, subsidies, investment programmes, feed-in tariffs, loans/grants and trading schemes (e.g. EU ETS);
- **fiscal:** a PaM that provides a financial incentive via taxes. This includes both increases and decreases in taxes;
- **voluntary/negotiated agreements:** a binding or voluntary standard/regulation as in regulatory and information measures, but agreed between regulators and the sector targeted;
- **regulatory:** measures that set binding standards and regulations. This includes, for instance, building regulations or eco-design standards;
- **information:** measures such as labelling, awareness rising, voluntary standards. The objective is to disseminate information to the general public or to specific target groups;
- **education:** measures such as training programmes and capacity building;
- **research:** research programmes and demonstration projects;
- **planning:** measures such as waste management plans, transport plans, urban planning;
- **other:** measures that do not fit in any of the above categories.

([31]) Member States might applied slightly different definitions (e.g Sweden includes tax with the main objective to provide incentive to reduce greenhouse gas emissions into the economic instruments).

Figure 3.11 Number of policies and measures reported per instrument type by Member States



Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

PaMs may be associated with more than one type of instrument if this is deemed appropriate by the Member State. Economic and regulatory instrument types are used predominantly and in almost equal shares (both in 30% of cases; Figure 3.11). The least frequently reported instrument types are research and other.

The dominance of economic and/or regulatory instrument types can also be seen across most Member States (Table 3.3). For 21 Member States, economic and regulatory instrument types are selected in more than 50% of cases. The most extreme case is Slovakia, which reported only regulatory or economic instrument types.

Some Member States deviate significantly from this pattern. Poland ([29]) and Romania report no or almost no economic PaMs. In Romania, this gap is filled by a very large share of regulatory PaMs and, to a lesser extent, planning PaMs, whereas Poland ([29]) often reported 'other' instrument types.

Cyprus ([29]) has selected regulatory and/or economic instrument types in the least number of cases. Instead, voluntary or negotiated agreements and planning are the dominant instrument types. Voluntary or negotiated agreements are also very important in the Netherlands. This could indicate that the Netherlands pays particular attention to working together with different sectors in setting up climate action. In Spain, planning is dominant as a policy instrument. Many policies in Spain appear to be installed by the central government but then need further implementation by regional or local authorities. These policies have been characterised as planning instruments.

The fact that no or few PaMs are reported under the type 'planning' does not necessary mean there are no instruments relating to planning. In Sweden for instance, planning is regulated (e.g. in the waste sector, building and infrastructure), hence reported as a PaM under the category 'regulatory'.

Sectoral differences ([32]) can also be distinguished (Table 3.3). Regulatory and economic instruments dominate in all sectors, but economic instruments are more important in the LULUCF and energy supply sectors, and regulatory instruments are more important in the industrial processes and waste sectors.

In the transport sector, the types of instruments are very diverse, with information, fiscal and planning instruments being reported commonly, and a greater than 50% share for economic and regulatory instruments combined. In all other sectors, regulatory and economic instruments in combination comprise more than 50% of all PaMs. This makes the transport sector more heterogeneous than the cross-cutting sector as regards instrument type. The industrial processes and energy supply sectors, however, are the least diverse, with more than 70% of PaMs being regulatory and/or economic.

3.6 Status of implementation

The status of implementation of the reported PaMs can be classified as follows:

- **planned:** planned PaMs are options under discussion that have a realistic chance of being adopted and implemented in the future;
- **adopted:** adopted PaMs are those for which an official government decision has been made and for which a clear commitment to proceed with implementation exists;

([32]) The adjusted division in sectors was used here, which means that there is only one sector per PaM.

Table 3.3 **Share of policies and measures linked to specific instrument types per Member State (% of total)**

	Austria*	Belgium	Bulgaria*	Croatia	Cyprus*	Czech Republic	Denmark	Estonia	Finland	France	Germany	Greece*	Hungary	Ireland	Italy	Latvia*	Lithuania	Luxembourg*	Malta	Netherlands	Poland*	Portugal	Romania	Slovakia	Slovenia*	Spain	Sweden	United Kingdom	EU
Economic	29	28	42	33	7	38	44	52	23	27	23	49	37	22	49	26	36	44	45	27	2	25	0	47	18	25	44	36	30
Regulatory	33	19	18	41	25	28	23	23	38	16	40	14	25	24	32	30	22	19	16	27	42	42	71	53	26	23	19	42	30
Information	15	22	5	9	5	10	16	11	14	13	12	5	15	13	0	12	13	9	6	6	1	2	0	0	11	4	9	7	10
Fiscal	6	6	11	5	0	7	14	4	11	11	23	19	10	6	5	14	0	13	6	15	11	13	0	0	18	3	17	7	9
Planning	3	8	5	3	27	9	0	9	7	13	0	14	0	7	11	12	22	3	10	0	1	13	21	0	8	33	0	0	8
Other	0	1	0	0	0	1	0	0	2	5	0	0	0	1	0	0	0	0	10	0	26	0	0	0	3	4	2	1	3
Voluntary	8	4	8	0	36	2	2	0	4	5	2	0	2	10	3	5	2	3	0	24	0	6	8	0	5	3	6	3	5
Education	3	9	5	5	0	6	0	0	0	3	0	0	10	15	0	2	2	9	6	0	10	0	0	0	10	5	2	1	4
Research	3	2	5	5	0	0	0	1	1	6	0	0	2	3	0	0	2	0	0	0	7	0	0	0	0	0	2	3	2

Note: (*) Member States for which 2013/2014 data were used.

Colours represent the share of policies and measures linked to specific instrument type per Member State. The darker green colour, the higher share. The darker orange, the lower share.

Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

- **implemented:** implemented PaMs are those for which one of the following applies: a) national legislation in force; b) one or more voluntary agreements have been established; c) financial resources have been allocated; d) human resources have been mobilised;

- **expired:** expired PaMs are those for which the timeline of the policy has passed. Expired policies may still have a long-term impact on GHG emissions savings.

In 2015, Member States reported only 80 PaMs that have expired (< 6%); all other PaMs have been implemented, adopted or planned (Figure 3.12). It has to be pointed out that some Member States interpreted status differently. Ireland considered 2013 as a reference year, which implies, for instance, that PaMs implemented in 2014 are reported to be either planned or adopted. This view is taken due to the nature of emissions reporting and associated activity data. Spain has a number of PaMs that have been installed by the central government but that require further implementation by regional or local governments. In these cases, the start year could be 2015 or earlier, but the status was reported as adopted.

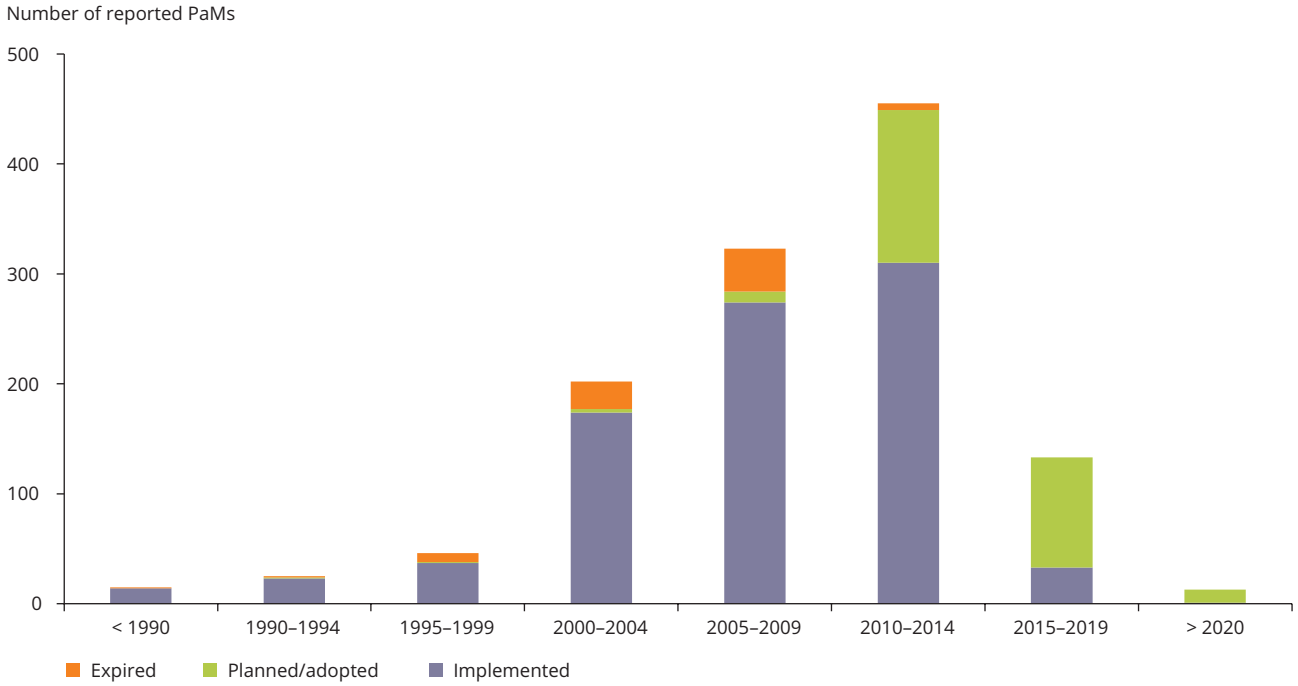
The figure below shows that almost all expired PaMs started in the period 2000–2009. Before 2000, almost no PaMs are expired. This does not mean that in these years there are no expired PaMs, but rather may indicate a reporters' bias to include only recently expired PaMs in the report or that detailed analysis of PaMs is not available due to historic data availability.

3.7 Main timeframes for implementation

There is a clear increase in the number of PaMs that were implemented between 1990 and 2014. Figure 3.13 includes all PaMs for which the relevant information has been provided. This does not include all PaMs, as, in some cases, the start year was not reported. For 171 PaMs, the start year was not reported. This amounts to 14% of all PaMs and is an improvement compared with the 2013 reporting under the MMD, in which 22% of PaMs had a missing start year. The proportion is, nevertheless, still high mainly because the data set used in this report still contains 2013/2014 submissions, and in some cases the start year is not yet known (e.g. in the case of planned PaMs).

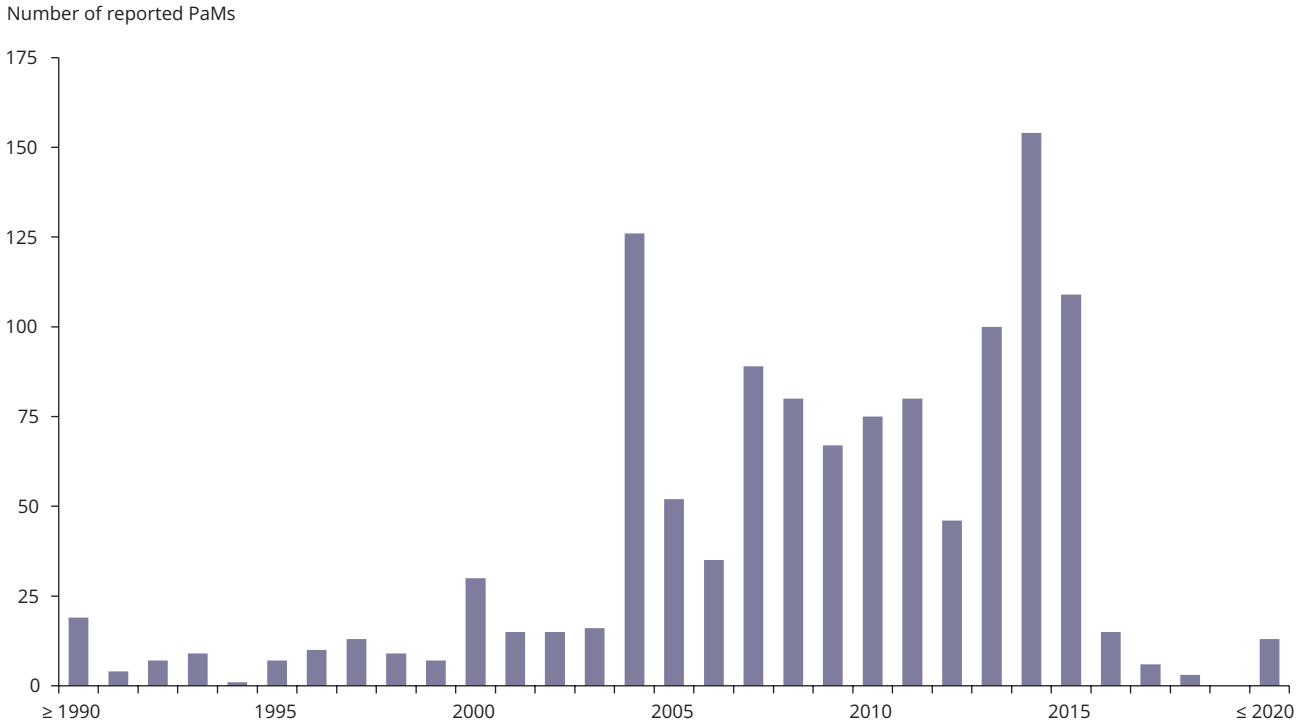
Figure 3.13 includes PaMs that have been planned, adopted, implemented or expired. 2004 and 2014 were important years for implementing climate policies in the Member States. Belgium contributed a large number of PaMs to the overall total in 2004 (79 %). This is explained by the fact that almost all of the country's PaMs were implemented in 2004. The sudden decrease in new PaMs in 2012 could be explained by the economic recession and austerity measures

Figure 3.12 Number of policies and measures per reporting period and implementation status



Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

Figure 3.13 Number of policies and measures reported per start year



Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

carried out by the Member States. However, as 2013, 2014 and 2015 are among the most productive years, there appears to be little evidence that the economic recession has had a fundamental impact on climate policies.

3.8 National policies implemented in response to European Union-wide policies

Member States were required to specify if the national policy was implemented in response to an EU-wide instrument. Member States had the option to indicate that there was no link with EU policy, to select one or more EU policies among 29 options or to include another EU policy if that was more appropriate.

In 330 cases, national PaMs are reported to have been implemented without a direct link to an EU policy (Figure 3.14). This corresponds to 24% of all PaMs. In previous submissions under the MMD, this was 29%, so it appears that in 2015 more PaMs are linked to EU policy than in 2013. Member States with a high rate of PaMs that are unrelated to EU policy are France, the Netherlands and Sweden. However, several Member States have a very low percentage of PaMs that are unrelated to EU policy, including Bulgaria ([29]), Croatia, Lithuania (none), Malta, Slovakia and Spain.

The large, overarching, EU policies are the most common, and those most linked to by Member States are the EED ([6]) and the Energy End-use Efficiency and Energy Services Directive ([7]), the RED ([5]) and the ESD on climate mitigation targets for non-ETS sectors. EU policies that are more specific or that do not require transposition into national legislation are linked the least.

A somewhat different picture emerges, however, when the number of Member States that have linked one or more national PaM to an EU policy are counted (Figure 3.15). The large overarching EU policies are still important but other, more specific, EU policies are also reported by many countries. This is the case for the recast EPBD, the Landfill Directive and the Waste Framework Directive, which have been linked by most Member States to at least one national PaM.

Some significant EU policies have not been linked to national policies in certain Member States. It is not expected that the EU ETS is linked to many PaMs in a given Member State. Transposition of the EU ETS in national legislation does not necessarily require many different national PaMs. To achieve the targets set out in the Energy End-use Efficiency and Energy Services or the Renewable Energy Directive, however, Member States might have to resort to different PaMs. In certain Member States, no national PaMs have been linked to the EU ETS (Table 3.4). The same applies for the RED and the two energy efficiency directives.

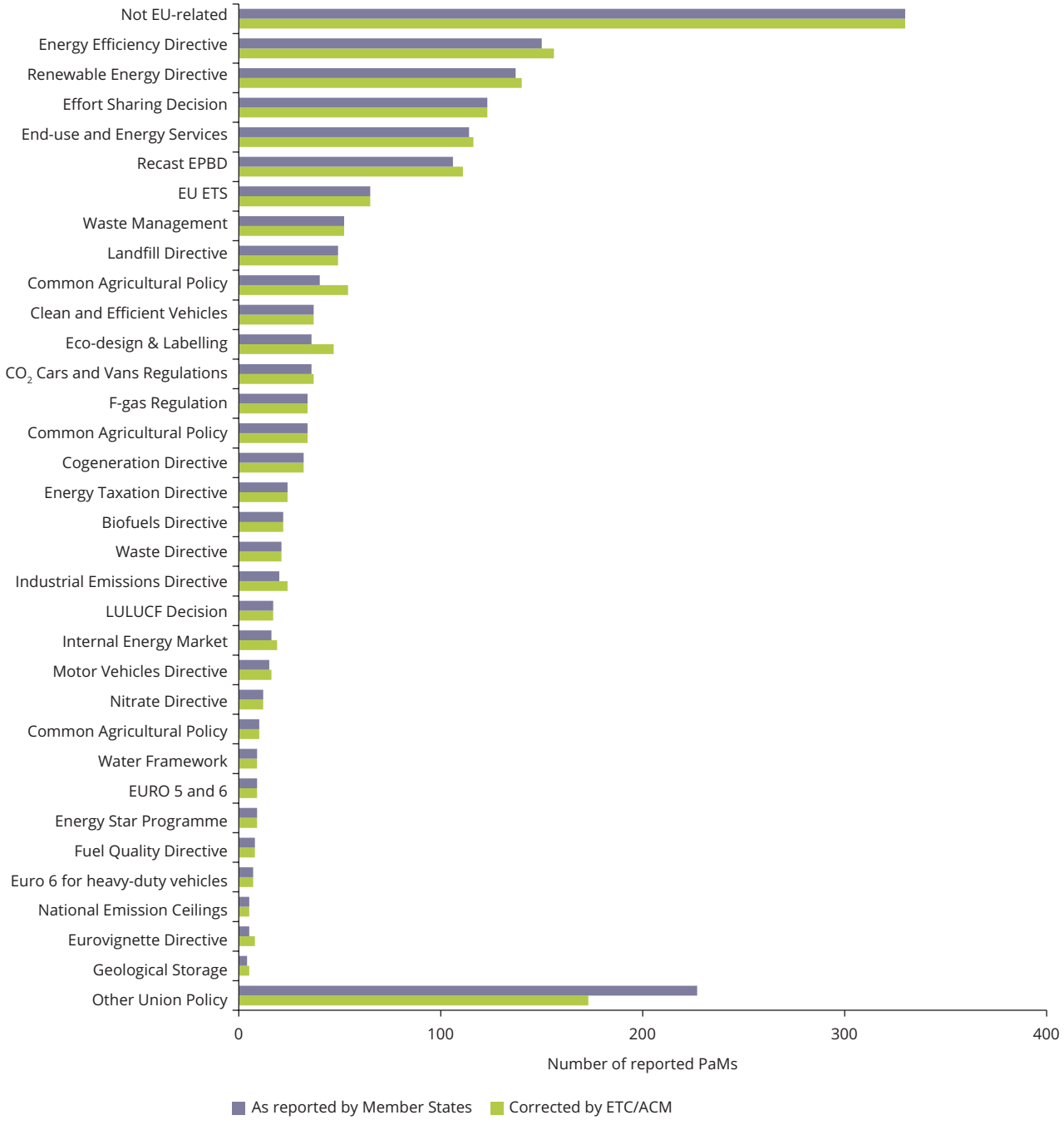
Despite the fact that the EED is relatively recent, a high share of national policies have been linked to this EU policy. The actual percentage may be even higher given that we have used eight reports submitted in 2013 (when the EED had only been published the year before).

The category of 'other' EU policy was also often reported by Member States and contains many different EU policies. Some important examples (only from countries that reported in 2015) are:

- Directive 2014/94/EU on the deployment of alternative fuels infrastructure;
- Regulation No 517/2014 on fluorinated GHGs and repealing Regulation (EC) No 842/2006;
- Kyoto Protocol project mechanisms 2004/101/EC;
- Rural Development Programme 2014–2020;
- Waste Incineration Directive 2000/76/EU.

In almost half of the cases (45%) in which other EU policies were reported, this was by Member States for which the 2013/2014 report was used in this report. Some Member States reported another EU policy when this corresponded with an option from the predefined drop-down menu. As can be seen in Figure 3.14, correcting for this has only a small impact.

Figure 3.14 **Number of national policies and measures reported to be implemented in response to the main Union policies (a)**



Note: (a) Grey bars indicate information reported by Member States; green bars are corrected by ETC/ACM by changing 'other Union policy' to one of the options above, where this was appropriate.

Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

Table 3.4 **Share of policies and measures implemented in response to EU policy per Member State (% of total)**

	Austria*	Belgium	Bulgaria*	Croatia	Cyprus*	Czech Republic	Denmark	Estonia	Finland	France	Germany	Greece*	Hungary	Ireland	Italy	Latvia*	Lithuania	Luxembourg*	Malta	Netherlands	Poland*	Portugal	Romania	Slovakia	Slovenia*	Spain	Sweden	United Kingdom	EU
Other EU Policy	51	34	71	40	32	61	51	42	60	31	49	75	61	52	38	58	51	28	39	13	74	49	68	63	73	53	31	38	49
Not related to EU policy	36	9	0	4	53	33	7	11	19	60	15	6	5	13	28	8	0	50	2	84	5	16	25	4	8	0	55	47	18
EED	0	27	0	10	0	0	4	22	0	2	0	0	17	2	3	0	5	0	0	0	0	14	0	21	0	37	0	2	8
RED	5	9	9	9	16	3	3	7	9	4	12	6	2	11	26	13	9	6	22	0	0	11	2	1	8	4	12	9	8
ESD	0	5	0	21	0	0	30	18	2	1	2	14	0	0	0	2	23	3	2	0	0	0	2	1	2	4	0	0	7
Energy End-use Efficiency and Energy Services	7	13	7	7	0	1	4	0	9	0	10	0	15	22	5	17	3	6	27	0	21	5	2	0	7	0	0	3	6
EU ETS	1	4	13	8	0	1	2	0	2	2	12	0	0	0	0	2	9	6	8	3	0	5	2	9	2	1	2	2	4

Note: (*) Member States for which 2013/2014 data were used.

Colours represent the share of policies and measures implemented in response to EU policy per Member State. The darker green colour, the higher share. The darker orange, the lower share.

Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

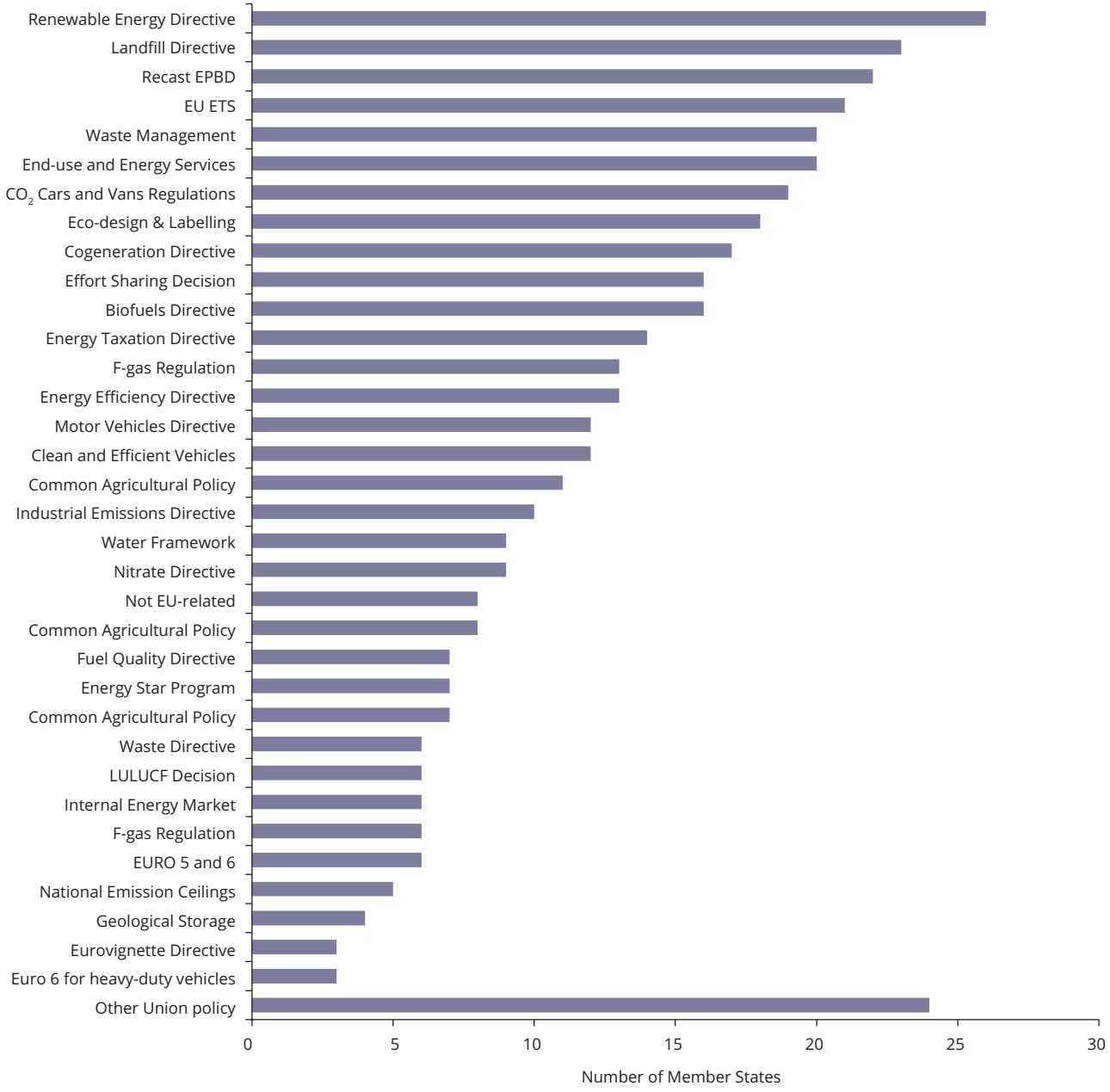
3.9 Entities responsible for implementation

In the online questionnaire, reporters could pick from the following options for entities responsible for implementation: governmental, local, regional, research, other and companies. Member States had the option of selecting one or more different entity types. Because the name of the entity type had to be identified, it was also possible to select one entity type more than once. For instance, a Member States could report more than one government entity (e.g. Ministry of Transport and Ministry of Finance) responsible for the implementation of the PaM.

As Figure 3.16 shows, the national government is the dominant entity responsible for the implementation of single PaMs. It is also the entity with the largest difference between the number of PaMs and the number of entities, meaning that, in a number of cases, several governmental entities were responsible for the implementation of a PaM. This is less often the case for other entity types.

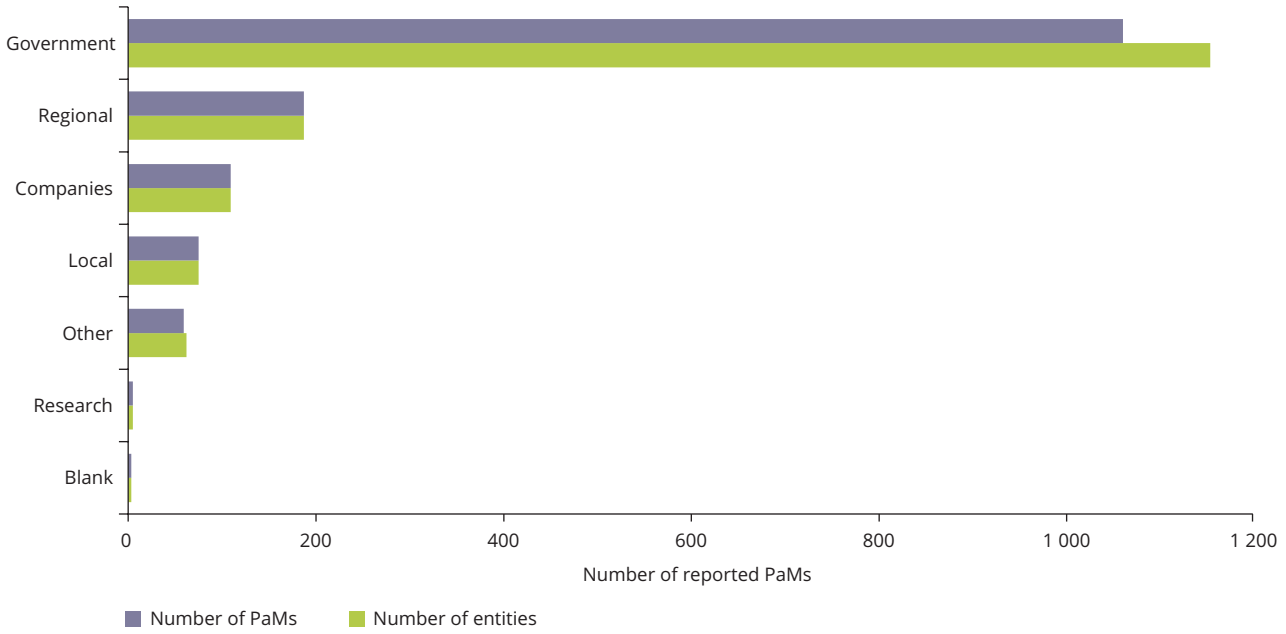
Regional entities appear also to be very important but this is somewhat misleading, as this is explained by the large number of regional climate PaMs in Belgium (100, more than half of total for EU). In Belgium, regional authorities are responsible for climate policies and this inflates the number of regional PaMs in the entire EU. Also 'other' is reported relatively often (4%), by nine different Member States. This category includes, among others, non-governmental organisations, governmental agencies, commissions and authorities.

Figure 3.15 **Number of Member States reporting at least one national policy and measure implemented in response to the main EU policy**



Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

Figure 3.16 Number of policies and measures and entities per entity type



Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

4 Reported effects and costs of policies and measures

This chapter covers the quantitative information reported by Member States on the emissions reductions achieved by or expected from PaMs, information on the projected (*ex ante*) and realised (*ex post*) costs of climate PaMs and indicators used to monitor and evaluate progress over time. Reported emission reductions include *ex post* and *ex ante* estimations, where available.

As no requirements on the methodologies to be used to estimates savings and costs of PaMs, the analysis presented below should be considered taking into account the potentially large variation in methodological approaches across Member States.

4.1 Completeness of reported emissions savings from policies and measures

An important issue in 2015 is the completeness of reporting on quantified emissions savings of the PaMs (Figure 4.1). As emissions savings are often reported for grouped PaMs, the total number of single PaMs was counted. This means that a group of four single PaMs is counted as four and not as one. Figure 4.1 shows that *ex ante* emissions savings (for 2020) are reported most completely (58% of single PaMs, either alone or grouped), although there are obvious gaps in coverage. Some Member States, including Hungary and Portugal, reported no emissions savings or savings for only a few PaMs. For other Member States (e.g. Croatia and Ireland), coverage of *ex ante* emissions savings does seem to be largely complete. Romania reported emissions savings grouped per emission source. Therefore, some single PaMs were included in more than one group, which explains the higher number of PaMs with *ex ante* estimates than the total. This does not necessarily mean that there is double counting. In total, all single PaMs were included in grouped PaMs.

For *ex post* emissions saving estimates, the data are very incomplete, with only three Member States providing quantified estimates.

4.2 Reported *ex post* emissions savings from policies and measures

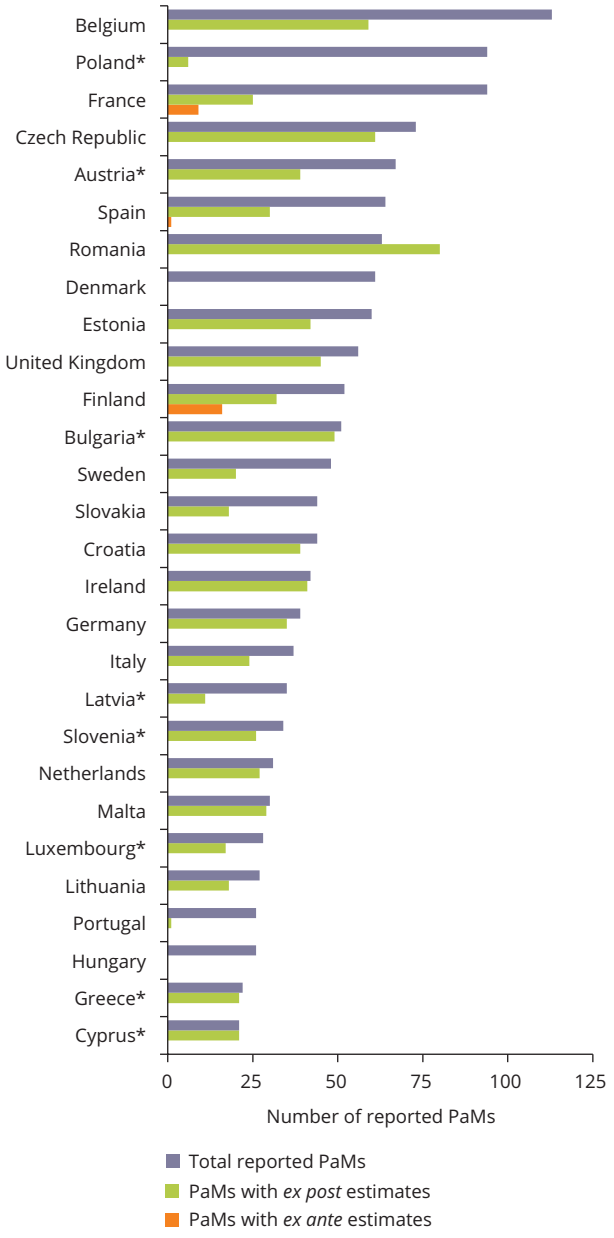
Ex post emissions savings from PaMs are a useful tool to assess the effectiveness and efficiency of national PaMs. However, it is often complicated to evaluate the exact progress made towards the objective. Many PaMs have been introduced to achieve other goals as well as those relating to climate change mitigation, interactions between instruments as well as external changes make the distinction of effects of one instrument very difficult. Up to now, only a few Member States have reported this information. Compared with previous reporting for the MMD, completeness for this even decreased which further reduced the possibility to carry out *ex post* evaluation on the basis of PaMs reporting.

Few countries have reported information on *ex post* emissions savings from PaMs. Only three Member States provided information in this part of the reporting template in 2015: Finland, France and Spain. All other Member States did not report quantitative information on emissions reductions already achieved by the PaMs. Furthermore, there are no specific requirement in the MMR regarding the year for which Member States should report ex-post savings, which makes comparison and aggregation difficult.

Of the three Member States that reported *ex post* savings, information was also incomplete and very scarce:

- Spain reported emissions savings for a single PaM for two different years, namely 2013 and 2014;
- Finland reported the emissions savings of 16 PaMs (12 single PaMs and one group of four). The emissions saving was given for one year per PaM (ranging between 2012 and 2014);
- France reported the emissions savings of nine PaMs (five single PaMs and two groups of two each). The emissions saving was reported for one year per PaM (ranging between 2010 and 2014).

Figure 4.1 **Number of reported single policies and measures (total, with *ex ante* savings estimates and with *ex post* savings estimates)**



Note: (*) Member States for which 2013/2014 data were used.

In the case of grouped PaMs, the number of single PaMs in the group was used. For Romania, impacts of PaMs have been grouped at sectoral level. Single PaMs that have an impact on emissions from different sectors are therefore reported in more than one group, which explains the higher number of PaMs with assessment than the total.

Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

4.3 Reported *ex ante* emissions savings from policies and measures

Reporting of quantitative data is only mandatory when available. Ex ante estimates of PaMs emissions savings have to be reported for a sequence of four years ending with 0 or 5 immediately following the reporting year (i.e. 2020 to 2035). This ensures that data for the same years and for the same period are obtained. For some Member States (such as Hungary and Spain), the estimates of PaMs savings was incomplete for certain or all years.

There could be considerable differences across Member States in their approach and their assumptions used to calculate the emissions savings of PaMs, which makes comparison particularly difficult.

During quality checks, the total reported emission savings of the PaMs were compared with:

- total emissions in 2012, and total projected emissions for 2020 in the WEM scenario, in the case of existing measures;
- the difference between WEM and WAM scenarios in the case of additional measures.

This approach was used to assess the accuracy of the savings estimates. This led to adjustments being made. In the case of Slovakia, despite an adjustment being made based on this QC check, the total savings were still very high compared with total emissions. Therefore, these data were omitted from further analysis.

In order to identify savings related to specific policy group and sectors, the savings from Member States' submissions in Table 2 ([33]) were subdivided and allocated to individual EU policy and sector categories. This method for splitting PaMs by EU policy and sector splits savings equally across the EU policies and sectors linked to the PaM. For example, where two EU policies and two sectors have been linked to a PaM, the saving is divided by 2 × 2 = 4 and one-quarter is attributed to each of the policy/sector combinations. Data for the years 2025–2035 are not considered complete. Therefore, the majority of analysis has focused on the year 2020.

The total emissions savings quantified by Member States and grouped by policy and sector are presented in Figure 4.2. This shows the relationship between different EU policy groups, the status of

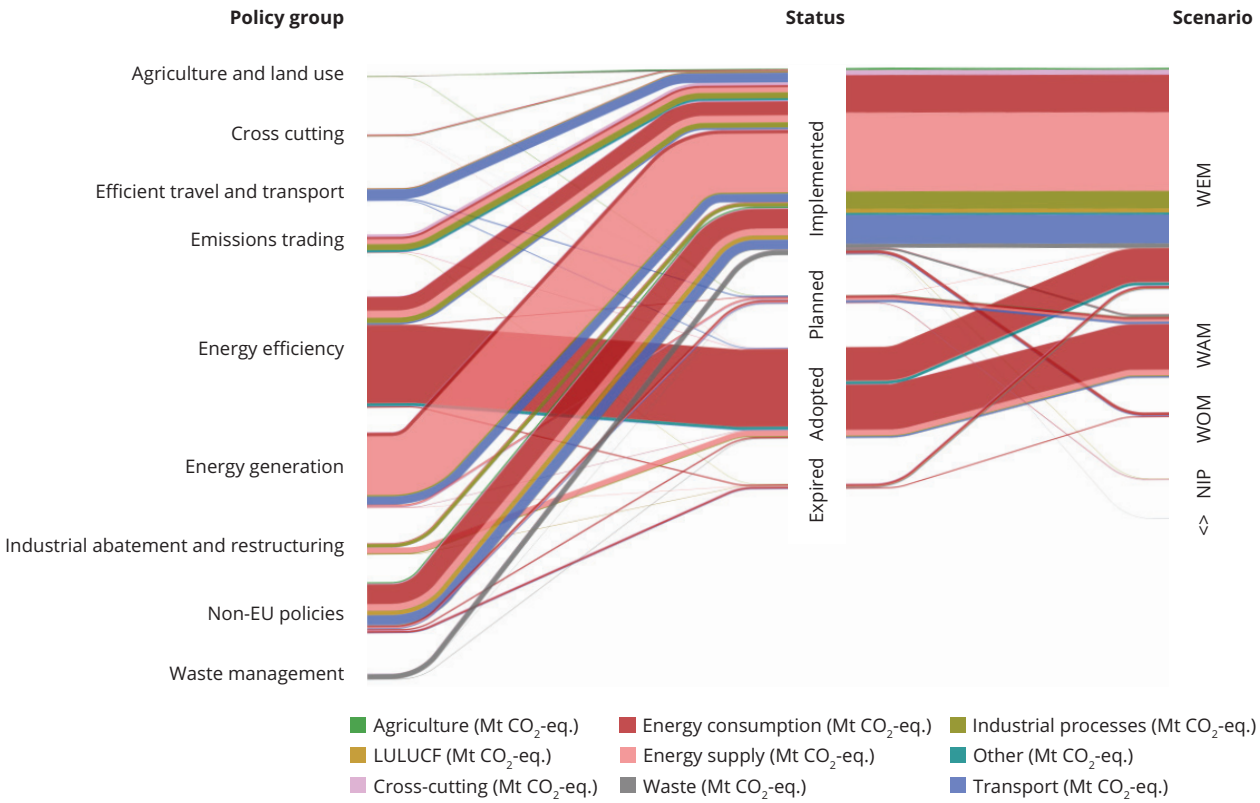
([33]) Table 2 of Annex XI of Commission Implementing Regulation (No 749/2014) and as in the EEA online reporting questionnaire (see Annex 1: A.3. to this report).

implementation and the scenarios in which PaMs savings are expected to have an impact.

Energy efficiency and energy generation are the two policy groups with the largest emissions savings. For energy generation, the emissions savings are achieved by PaMs that have already been implemented and that are part of WEM scenarios. However, for energy efficiency, emissions savings are largely achieved by PaMs that have been adopted only recently and that are applicable to both WEM and WAM scenarios. Based on this graph, WAM emissions savings will predominantly come from energy consumption and energy efficiency improvements and not from energy supply. Energy consumption and supply are the two sectors in which the largest savings are projected to occur.

Total emissions savings reported by Member States for the period 2020–2035 and for 2020, grouped by EU policy group, are presented in Figure 4.3 and Figure 4.4, respectively. Energy generation and efficiency policies make up more than 55% of total savings for 2020. Based on the data provided by Member States, annual WEM and WAM savings for the period 2020–2035 are in the region of 15–16% and 1–2%, respectively, of 2012 totals for the EU for each year. The savings for 2025–2035 are not consistent with expectations for increasing savings and appear to be significantly incomplete. In many cases, Member States present quantified savings for 2020 but not for 2025, 2030 or 2035, even though these policies are considered to be in place and delivering at least 2020 level savings (Figure 4.3).

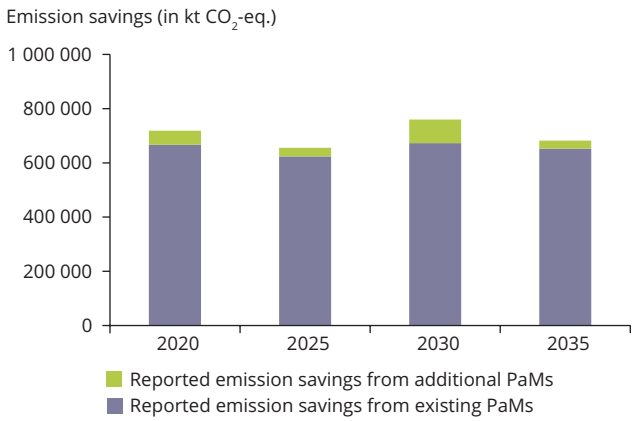
Figure 4.2 Sankey diagram showing the relationship between policy group, status of implementation and scenario in reported expected emissions savings in 2020



Note: WEM — with existing measures; WAM — with additional measures; WOM — without measures; NIP — not included in a projection scenario.

Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

Figure 4.3 **Reported expected emission savings of existing and additional policies and measures (excluding LULUCF) in 2020 to 2035**

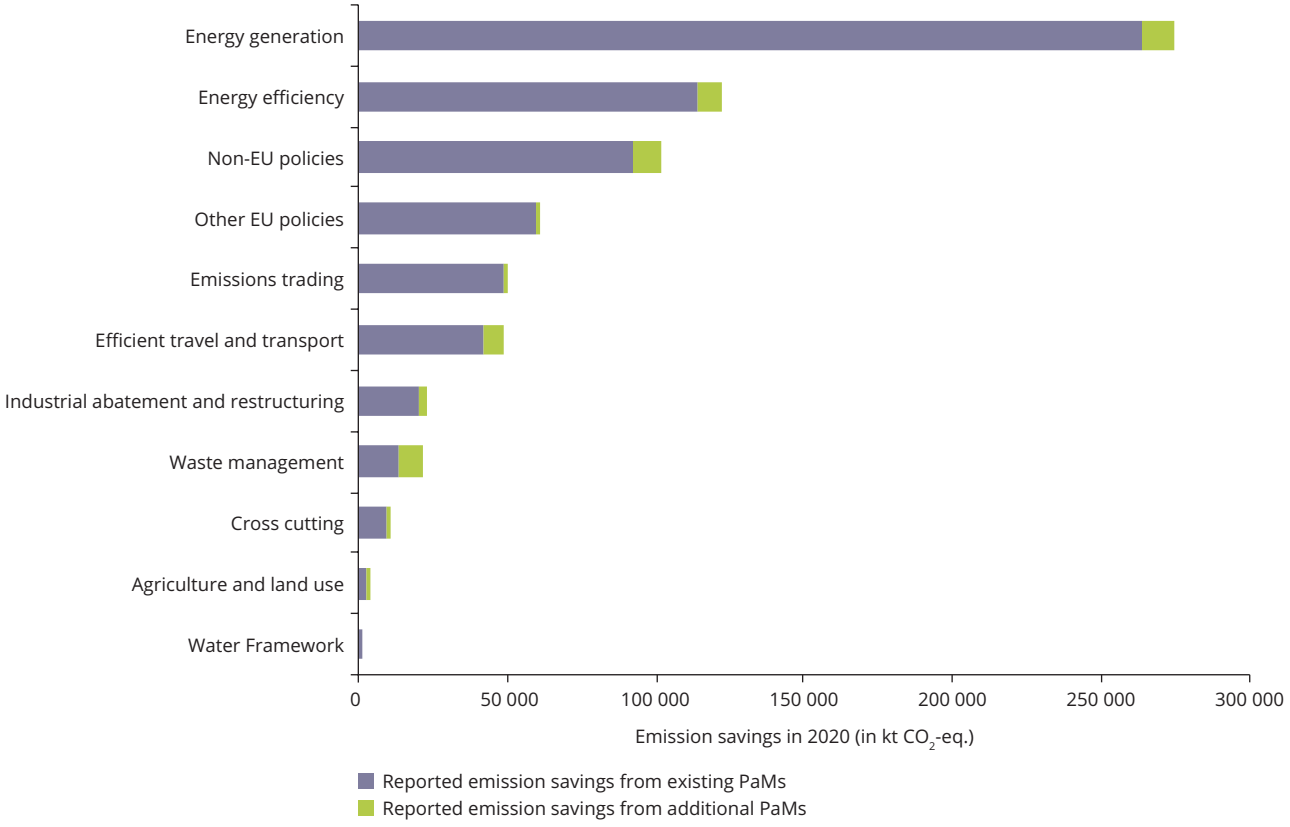


Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

The key EU policies that are expected to drive savings are presented in Figure 4.5. PaMs savings related to EU policies account for 86% of all quantified savings for 2020. Although the group 'non-EU policies' (PaMs without links to EU policies) ranks second, it makes up only 14% of the total quantified savings for 2020 and accounts for only 2% of the savings on 2012 emissions. Savings from the EPBD and the EED 2012 rely heavily on the implementation of additional measures. The top 10 EU policies account for 80% of the quantified savings and make up 12% of the total 17% reduction compared with the 2012 estimates (excluding the non-EU policy PaMs).

The share of savings occurring in sectors covered by the ESD compared with total savings for 2020 is presented in Figure 4.6. Estimates for 2025 to 2035 have not been included, as many Member States have not estimated the ESD and EU ETS split for these years. The PaMs emission savings in sectors covered by the ESD account for approximately 31% of the WEM

Figure 4.4 **Reported expected emission savings from existing and additional policies and measures in 2020 per policy group**

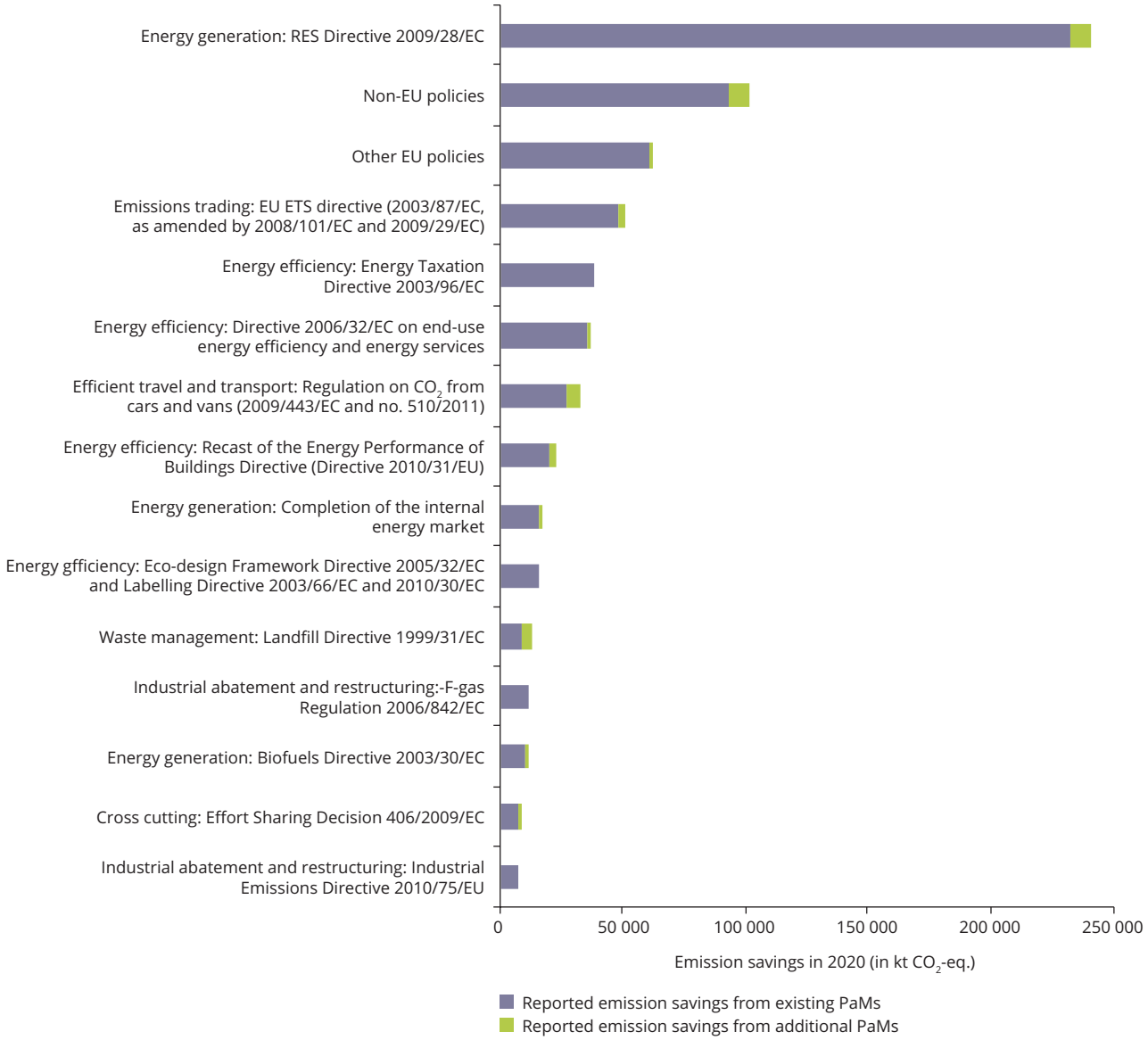


Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

total quantified savings and 66% of the WAM policies. Energy consumption for residential and commercial buildings and transport savings are most important for the ESD, making up 65% of total ESD savings for 2020.

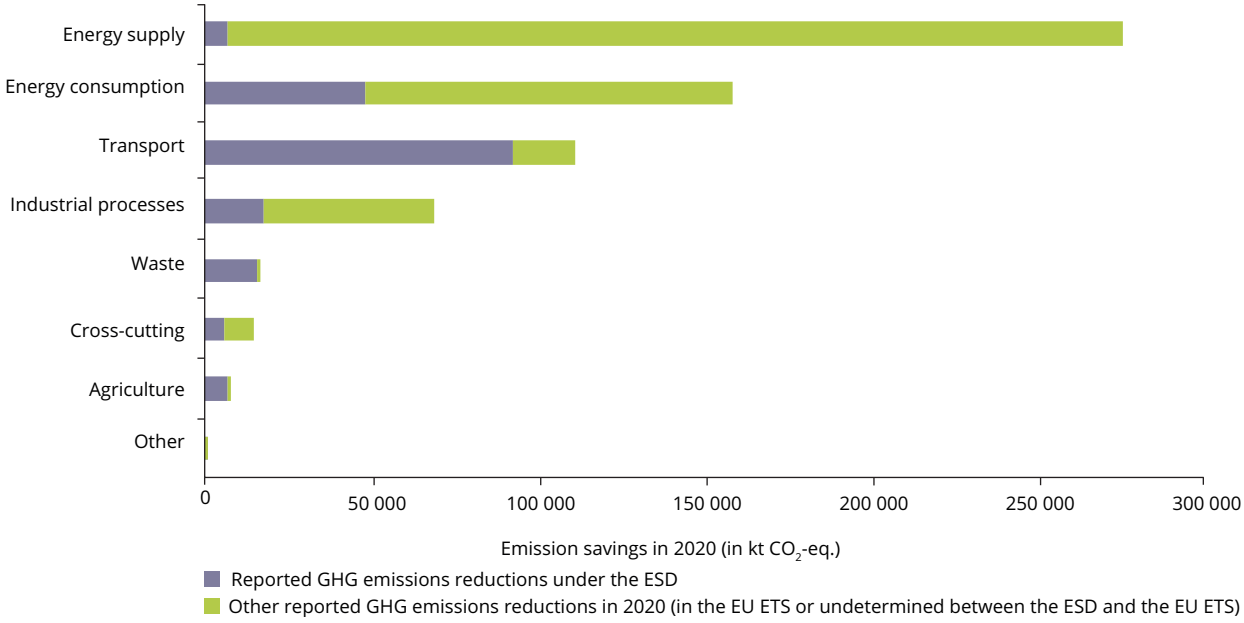
The most significant individual Member States' contributions to overall savings from existing measures come from France, Germany and the United Kingdom, whose savings in 2020 make up more than 59% of total savings. Savings from these three countries are equal to an 18% saving compared with their 2012 emissions and to 10% of the total overall quantified savings of 17% from all Member States.

Figure 4.5 Reported expected emission savings from existing and additional policies and measures by EU policies in 2020 (top 15)



Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

Figure 4.6 **Reported expected emissions savings from existing policies and measures in 2020 emissions covered by the ESD, compared to total savings, split by main emitting sector**



Note: Some of the sectors represented are partly covered by the ESD, e.g. the energy supply and energy consumption sectors are responsible for emissions falling either under the ETS or under the ESD.

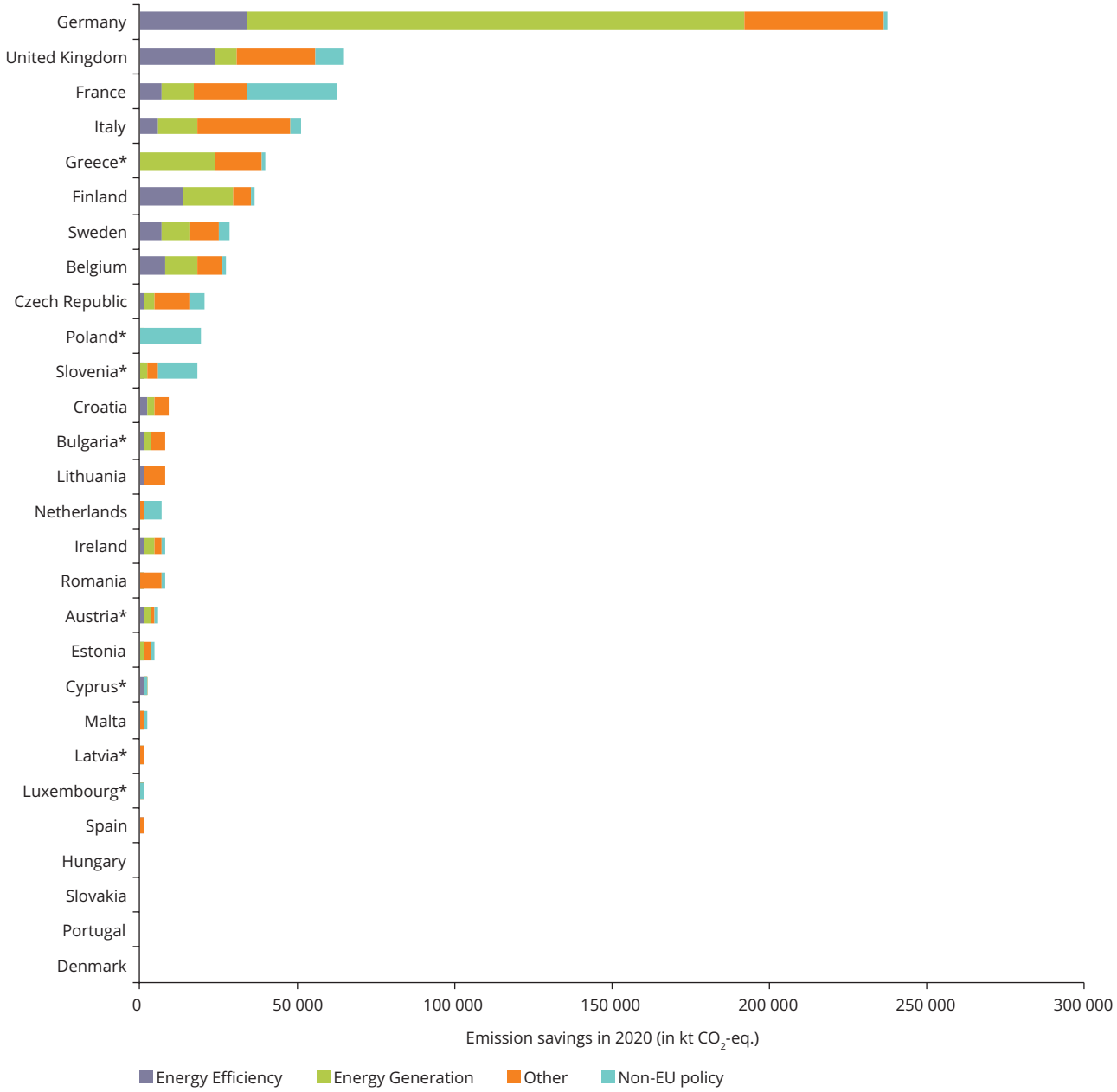
Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

4.4 Reported emission savings from policies and measures in relation to the EU's climate and energy policies

This section considers those PaMs that will deliver carbon saving while also contributing to the related Europe 2020 targets for energy efficiency and renewable energy generation. It is possible to identify the policies that meet these requirements by looking at how the policies can be related to certain EU-wide policies. A different approach is used here for aggregating emissions savings than in the sections above. If a PaM is implemented in response to EU policies that contribute to the renewable energy target and the energy efficiency target, the impact is not split. This means that there is some double counting, and that the data provide an estimate of the maximum emissions savings for each of the three 20/20/20 targets. There is no double counting within each group.

Figure 4.8 presents reported savings in in ETS sector, ESD sectors, and not divided savings attributed to the RED, the EED or the ESD. It means that the RED has impact on the ETS and ESD emissions because of RES in residential sector and transport, the EED has impact on ETS and ESD sectors because of energy efficiency measures in different sectors and efficiency improvements of electrical devices. The ESD also impact on ETS emissions because of switching to electricity. The data show that PaMs linked ([16]) to the renewable energy target (e.g. linked to the RED and Biofuels Directive) appear to have the highest impact in 2020. These PaMs have a combined reported impact of 359 million tonnes of carbon dioxide equivalent (Mt CO_2-eq.), compared with 265 Mt CO_2-eq. for PaMs linked to the energy efficiency target and only 37 Mt CO_2-eq. for PaMs that have been linked to the ESD.

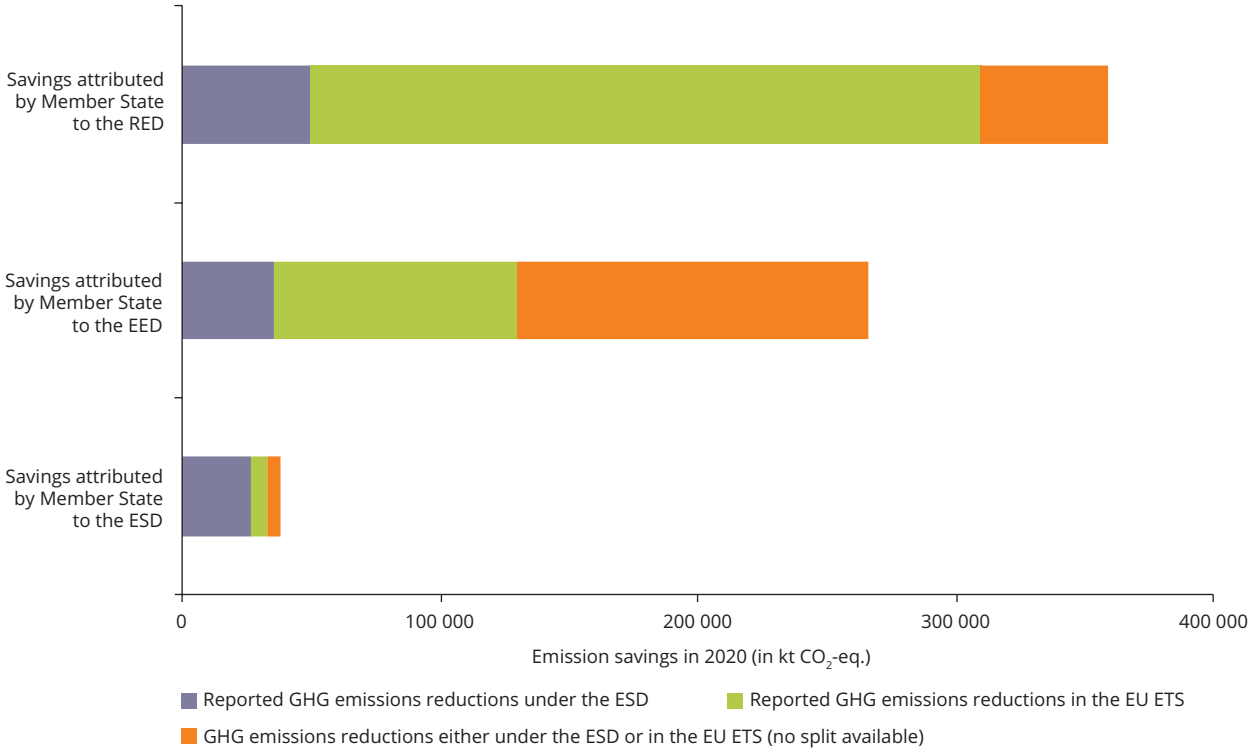
Figure 4.7 **Reported expected emission savings from existing policies and measures by Member State and policy group in 2020**



Note: (*) Member States for which 2013/2014 data were used.

Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

Figure 4.8 **Reported expected emission savings attributed by Member States to EU policies on renewable energy, energy efficiency or to the ESD in 2020**

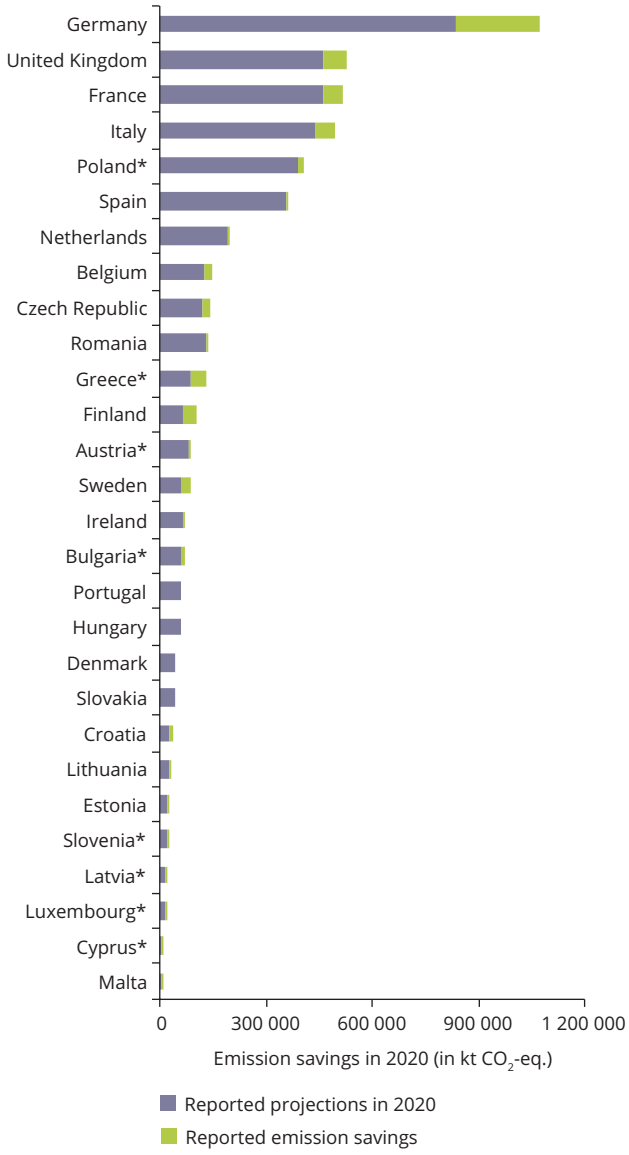


Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

4.4.1 Contribution of reported emission savings from policies and measures towards national projections

A comparison between projected emissions for 2020 (taken from the Member States' MMR submission on projections) and the reported impact (emission savings) of PaMs shows that the emissions reductions achieved by PaMs ranges between 84% (Malta) and 0% (Spain) of the emissions in 2020. For this comparison, the impact of WEM policies was used (excluding PaMs targeted towards the LULUCF sector) and the projected total GHG emissions excluding LULUCF in the WEM scenario (Figure 4.9). Malta had the highest relative emissions reduction, but Finland (57%) and Sweden (53%) also ranked highly. Among the large GHG emitters, Germany reported the largest emissions reduction of 29%, whereas France, Italy and the United Kingdom reported reductions of just over 10%. Poland ([29]) and Spain reported a relatively small reduction, which, especially in the case of Spain, could be attributed to the incomplete reporting of impacts.

Figure 4.9 **Reported expected emission savings from existing policies and measures in relation to total GHG emissions (excluding LULUCF) in 2020**



Note: (*) Member States for which 2013/2014 data were used.

Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

In Figure 4.10, emissions and emission reductions belonging to the WEM scenario have been divided over ETS and ESD sectors, where available. For the EU, ([34]) the projected emissions reductions in 2020 that could be attributed to the ETS correspond with 22% of the projected total ETS emissions; for the ESD this share is 8%.

4.4.2 Expected emission savings from national policies and measures specifically linked to the Effort Sharing Decision

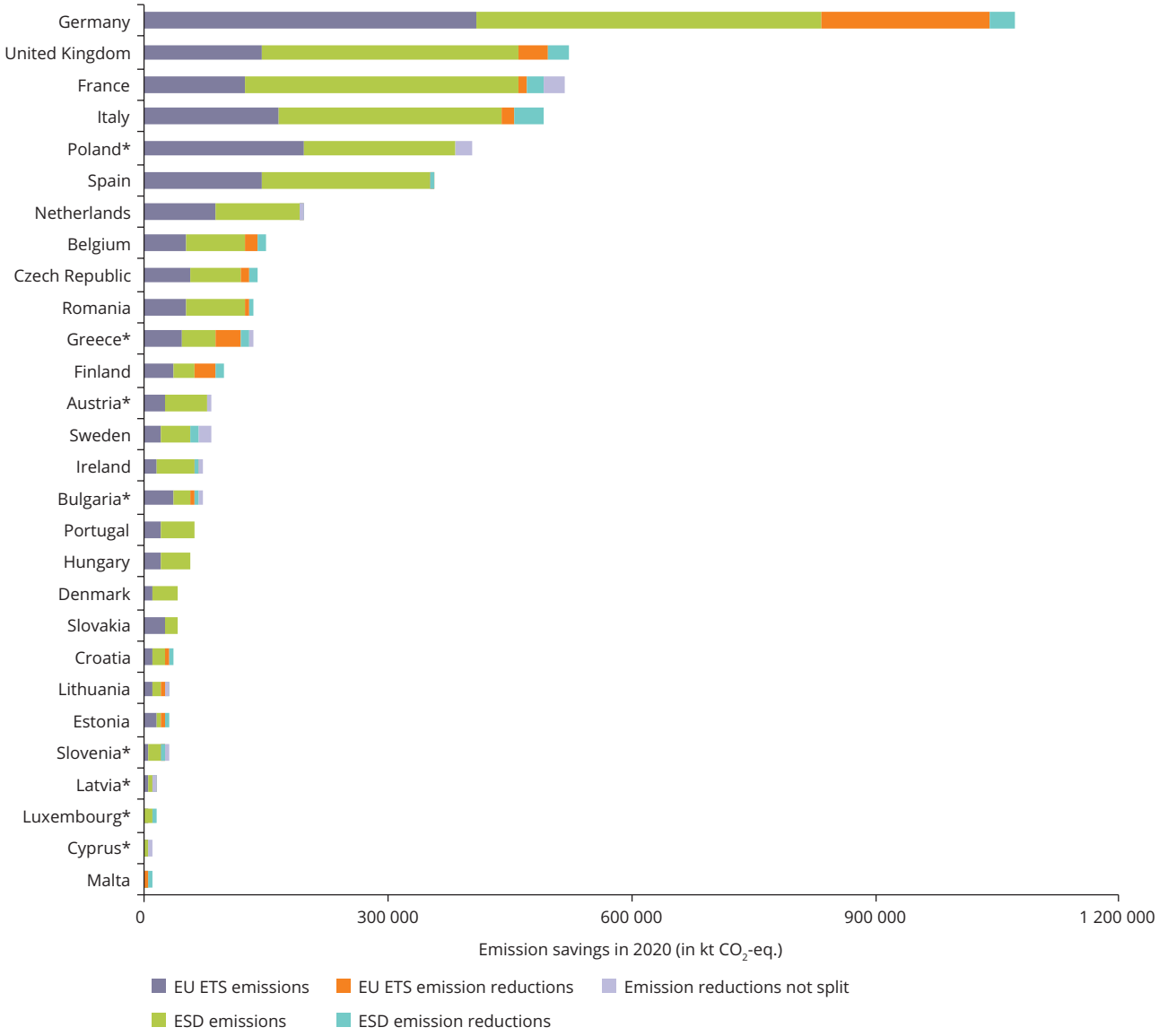
The ESD sets annual limits for individual Member States for emissions that do not fall under the EU ETS (LULUCF is not included in the ESD). In this section, we look in more detail at the carbon savings that will be achieved by PaMs that have been implemented in response to the ESD.

Nine Member States reported quantified emission savings from policies and measures specifically linked ([16]) to the implementation of the ESD. The reported savings by 2020 from ESD-linked existing policies amount to 27 Mt CO_2-eq. (4 % of the total impact of existing PaMs). Taking into account savings from additional measures reported by Estonia and Spain, the overall ESD-linked savings increases to 28 Mt CO_2-eq. (Figure 4.11). Most of this additional impact comes from PaMs in Spain ([35]). Interestingly, PaMs that have been linked to the ESD also contribute to emissions reductions in the ETS (6 Mt CO_2-eq. in total). This is mainly because of Croatia, which grouped all PaMs related to renewable energy and energy efficiency, and reported the impact for only these two groups. This is also the case for Romania, which reported impacts only for grouped PaMs.

All in all, however, the combined impact is relatively small, especially compared with other EU policies. This is also reflected in the fact that, although the ESD has been linked to numerous PaMs (see section 3), only nine Member States have quantified PaMs that have been implemented in response to the ESD. There could be several reasons for this. First, it could be that reporting is incomplete, because no assessments by

([34]) Not all Member States have submitted projections and not all Member States have reported emissions savings of PaMs, so this is not complete.
([35]) As mentioned earlier, Spain reported several PaMs that have been implemented by the central government but that require further action by regional or local governments as belonging to the WAM scenario.

Figure 4.10 **Reported expected emission savings of existing policies and measures in relation to total GHG emissions (excluding LULUCF) in 2020 split between ETS and ESD sectors where possible**



Note: (*) Member States for which 2013/2014 data were used.

Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

Figure 4.11 Reported expected emissions savings from policies and measures linked ([a]) to the EU-ESD in 2020

Note: (*) Member States for which 2013/2014 data were used.

([a]) A 'link' means that a Member State indicated that the PaM was implemented in response to an EU policy. This has been checked during QC but ultimately this is interpretation of Member State whether or not that is the case.

Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

Member States are (yet) available. This is corroborated by the fact that 16 Member States reported national PaMs linked to the ESD (i.e. Belgium, Croatia, Denmark, Estonia, Finland, France, Germany, Greece ([29]), Latvia ([29]), Lithuania, Luxembourg ([29]), Malta, Romania, Slovenia ([29]), Slovakia and Spain,). Another possible explanation could be that relatively few PaMs have been implemented in direct response to the ESD at this stage, because other PaMs have been implemented in response to other EU initiatives that already are reducing emissions in sectors under the ESD.

4.4.3 Expected emission savings from national policies and measures specifically linked to EU renewable energy policies

This section looks at PaMs that will deliver carbon saving while also contributing to the related Europe 2020 targets for renewable energy generation. This will be identified by looking at the national policies that have been implemented in response to following EU policies:

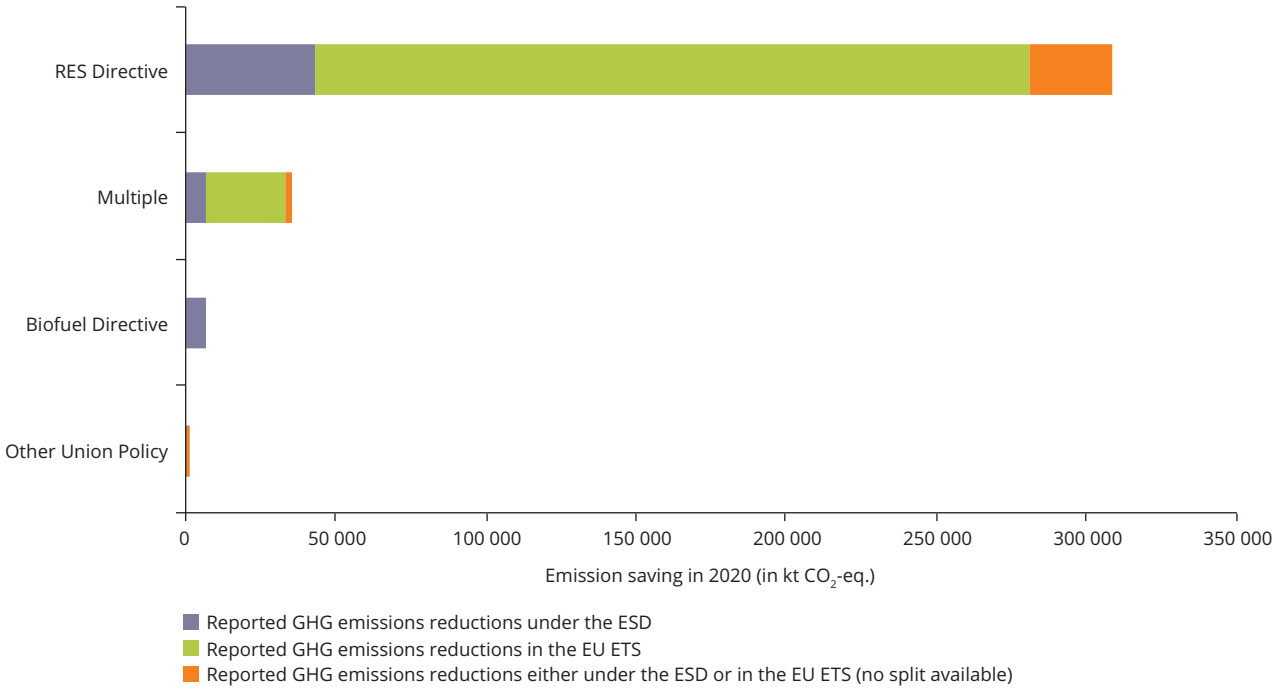
- RED 2009/28/EC;
- Biofuels Directive 2003/30/EC;
- Directive 2001/77/EC on the promotion of electricity from renewable energy sources;
- Directive 2014/94/EU on the deployment of alternative fuels infrastructure;
- Biomass Action Plan COM(2005) 628 final.

The total emissions savings of existing PaMs that have been linked to any of the EU policies above is 359 Mt CO_2-eq. in 2020. For additional measures, the savings increase by 11–373 Mt CO_2-eq. Most of this impact will be achieved in the ETS sectors: 71% of the total impact in 2020 is reported to take place in the ETS, 15% in the ESD sectors, and 14% was not split between ETS and ESD (Figure 4.12). PaMs linked to the RED will achieve by far the largest emission reductions in 2020, followed by PaMs linked to more than one EU renewable energy policy and the Biofuel Directive (Figure 4.12).

In total, 24 Member States reported emission reductions (Figure 4.13), but Germany reported by far the largest emissions reductions that will be achieved via PaMs linked directly to the EU renewable energy targets.

This assessment does not take into account the national PaMs that are not linked to any of the EU policies mentioned above. The total impact of EU policies on emissions reductions may, therefore, be significantly larger. The data, however, suggest that in response to the renewable energy targets, Member States have implemented PaMs with an expected total savings of 359 Mt CO_2-eq.

Figure 4.12 Reported expected emission savings from policies and measures linked to the renewable energy target in 2020



Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

4.4.4 Expected emission savings from national policies and measures specifically linked to EU energy efficiency policies

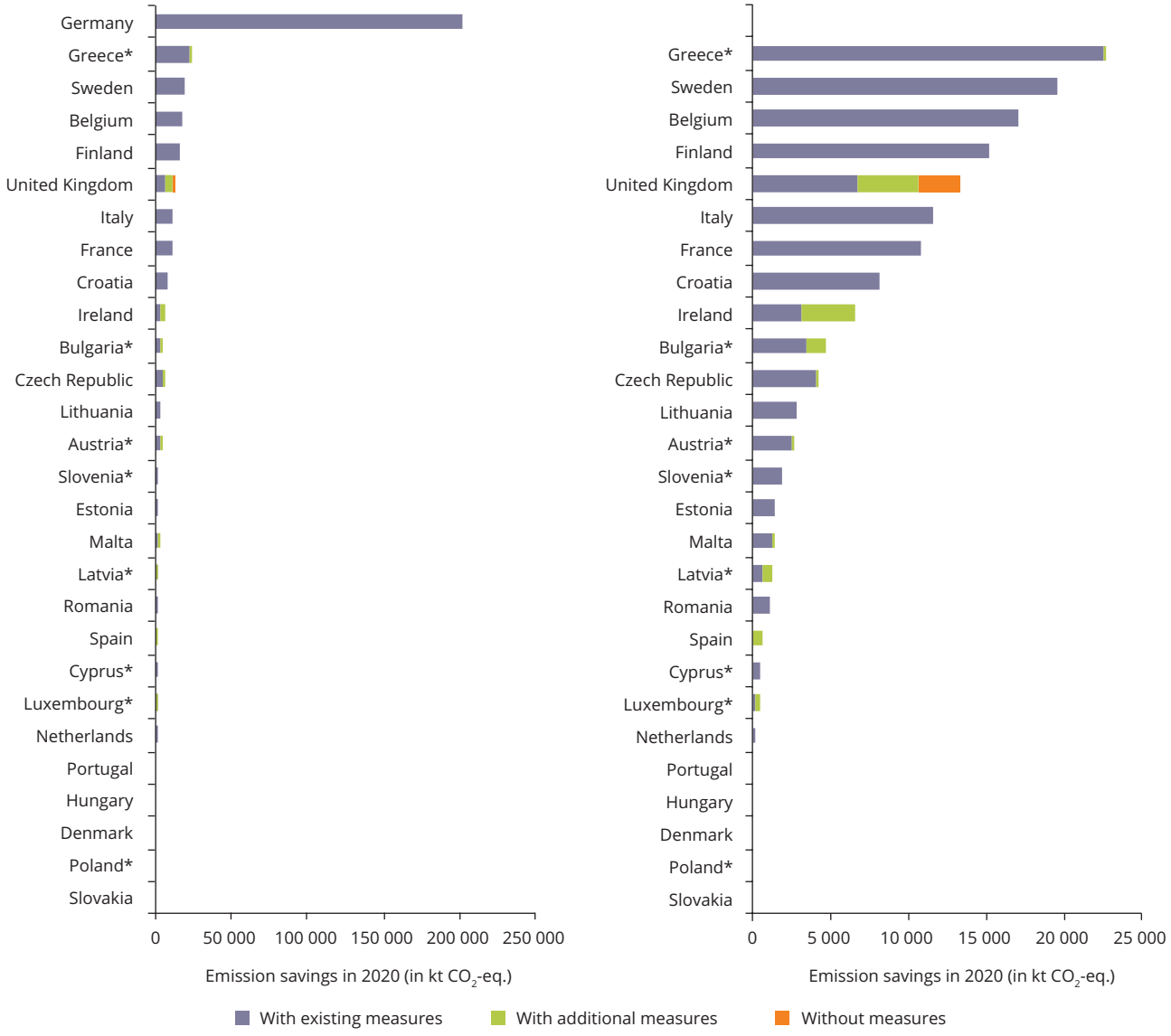
This section considers PaMs that will deliver carbon saving while also contributing to the related Europe 2020 targets for energy efficiency. This will be identified by looking at the national policies that are linked to the following EU policies:

- EED 2012/27/EU;
- EPBD 2002/92/EC and the recast version;
- Energy Star Programme;
- Ecodesign and Energy Labelling Directives and related implementing acts.

The total impact of existing PaMs that have been linked to any of the EU policies above is 135 Mt CO_2-eq. with existing and an additional 8 Mt CO_2-eq. with planned PaMs. PaMs linked to multiple energy efficiency EU policies are projected to achieve the largest emissions reductions by 2020 (Figure 4.14).

In total, 22 Member States reported emissions reductions from PaMs linked to EU energy efficiency policies (Figure 4.15). Again, national PaMs that contribute to the energy efficiency target but that have not been linked by the Member State to any of the EU policies above are not included here. The total impact of the EU policies on emissions reductions may, therefore, be significantly larger.

Figure 4.13 **Reported expected emission savings from policies and measures linked to the renewable energy target in 2020 by Member State (a)**

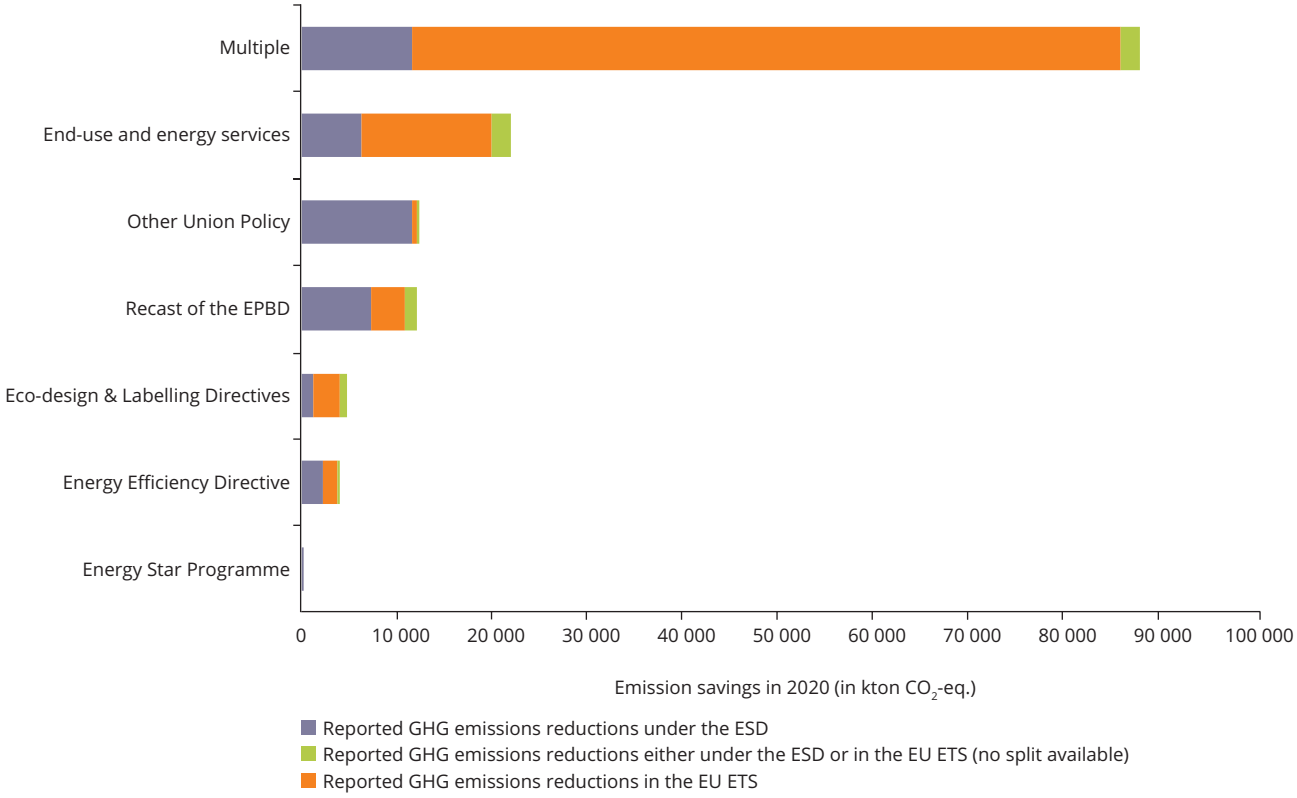


Note: (*) Member States for which 2013/2014 data were used.

(a) The left and right graphs contain the same data, but Germany is omitted from the right graph to improve readability.

Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

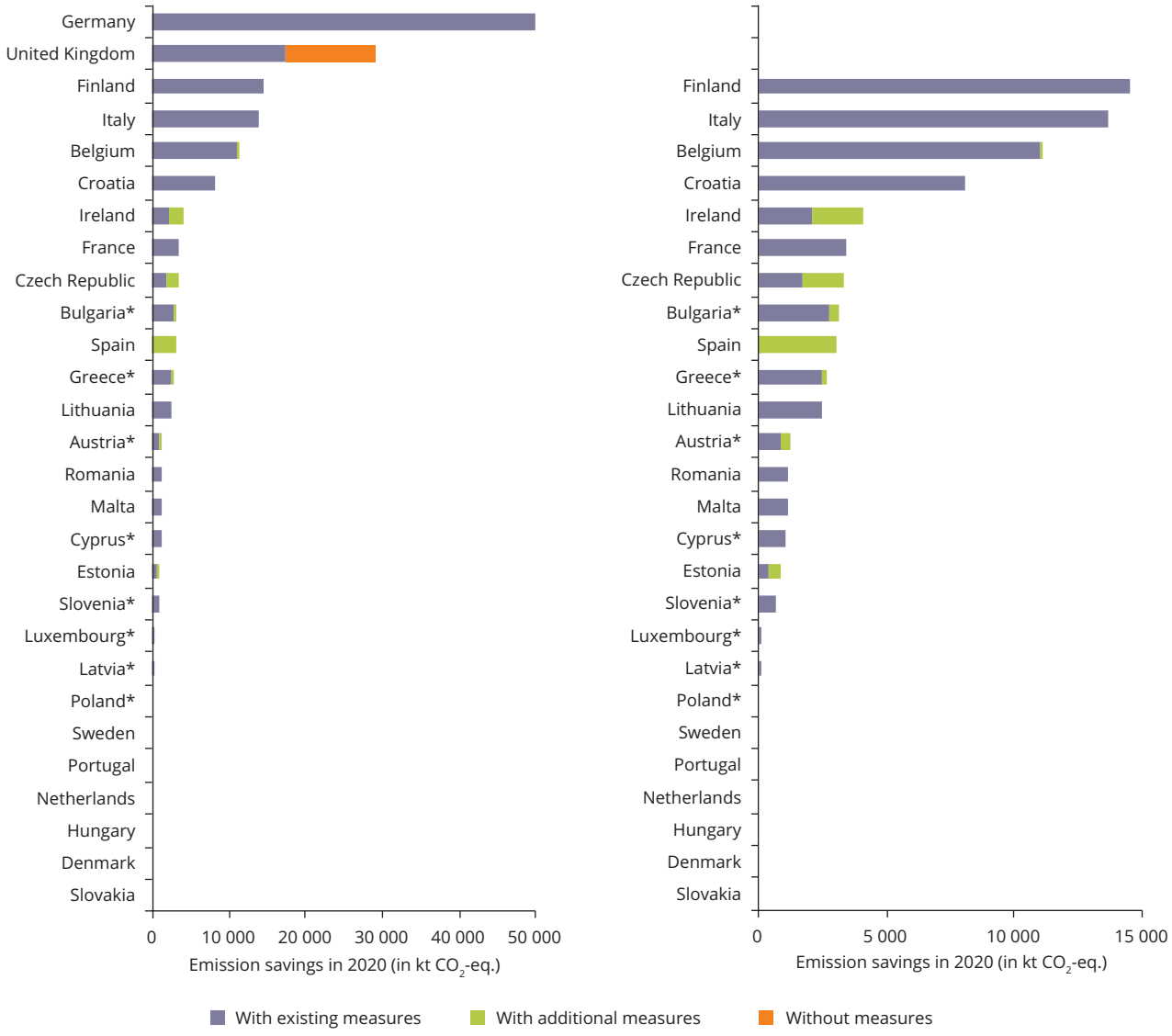
Figure 4.14 Reported expected emission savings from policies and measures linked to the energy efficiency target in 2020



Note: Only PaMs belonging to WEM or WAM scenarios have been considered.

Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

Figure 4.15 **Reported expected emission savings from policies and measures linked to the energy efficiency target in 2020 by Member State (a)**



Note: (*) Member States for which 2013/2014 data were used.

(a) The left and right graphs contain the same data, but Germany and the United Kingdom are omitted from the right graph to improve readability.

Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

4.5 Reported costs and benefits of policies and measures

The MMR also requests that Member States report information on the projected (*ex ante*) and realised (ex post) costs of climate PaMs, when available. Only five Member States reported this information:

- Belgium: reported projected costs for five single PaMs. For four PaMs, only the net cost was reported (in euros and euros/tonne) and for one PaM, the gross cost was reported (in euros and euros/tonne);
- Czech Republic: reported projected costs for most of their PaMs, 44 in total;
- Estonia: reported projected costs for 34 PaMs and realised costs for four PaMs;
- France: reported projected costs for four PaMs and realised and projected costs for one PaM;
- Finland: reported realised costs for one PaM.

Split per sector, most cost data are available for the transport, energy supply and energy consumption sectors, as there are also more PaMs targeting these sectors.

Not all requested information is reported by the Member States in all cases:

- gross costs were reported for 60 (in euros) and 36 (in euros/tonne) PaMs. A comparison of the total cost is not very relevant, as this depends on the importance of the PaM and the size of the Member State, so we compared only the costs expressed in euros/tonne. The values of the gross cost ranged from 0 to EUR 146 914 /tonne, with a median value of EUR 981/tonne;
- benefits were not reported at all;
- net costs were reported for 58 (in euros) and 34 (in euros/tonne) PaMs. However, in 53 (in euros) and 30 (in euros/tonne) cases, Member States reported the same value for gross and net costs, suggesting that the benefit would be zero. In the cases in which only net costs were reported, values ranged between EUR 236 and EUR 303/tonne, with a median value of EUR 38/tonne.

4.6 Indicators used to monitor progress

The role of an indicator is to better understand progress in implementing policies and measures. Article 13(c) of the MMR ((EU) No 525/2013) outlines the reporting rules for national PaMs, whereby under (iv) the reporting of indicators is required where they are used to monitor and evaluate progress over time. According to Annex XI of the implementing Regulation (EU No 749/2014), indicators shall be reported by providing a description and values, whereby the values can be either *ex post* or *ex ante* values. It must be specified for which year the value applies.

In 2015, submissions by 20 Member States were assessed in detail; for the other Member States, information from earlier reporting (for either 2013 or 2014) has been used. However, in previous reporting data on indicators did not have to be quantified.

Ideally, the reporting of indicators should include the indicator description and the values, including the reference year.

Figure 4.16 shows that eight Member States did not provide an indicator description for any of their PaMs, and only four Member States provided indicator descriptions for > 75% of their PaMs. The right-hand side of the figure shows for how many

Table 4.1 Number of PaMs reported with projected and/or realised cost estimates per sector

	Belgium	Czech Republic	Estonia	Finland	France	Total
Energy consumption	2	13	5		1	21
Energy supply	2	9	10		2	23
Transport	1	18	8	1	2	30
Industrial processes		1				1
Waste		1	3			4
Agriculture						
LULUCF			12			12
Cross-cutting		2				2
Total	5	44	38	1	5	93

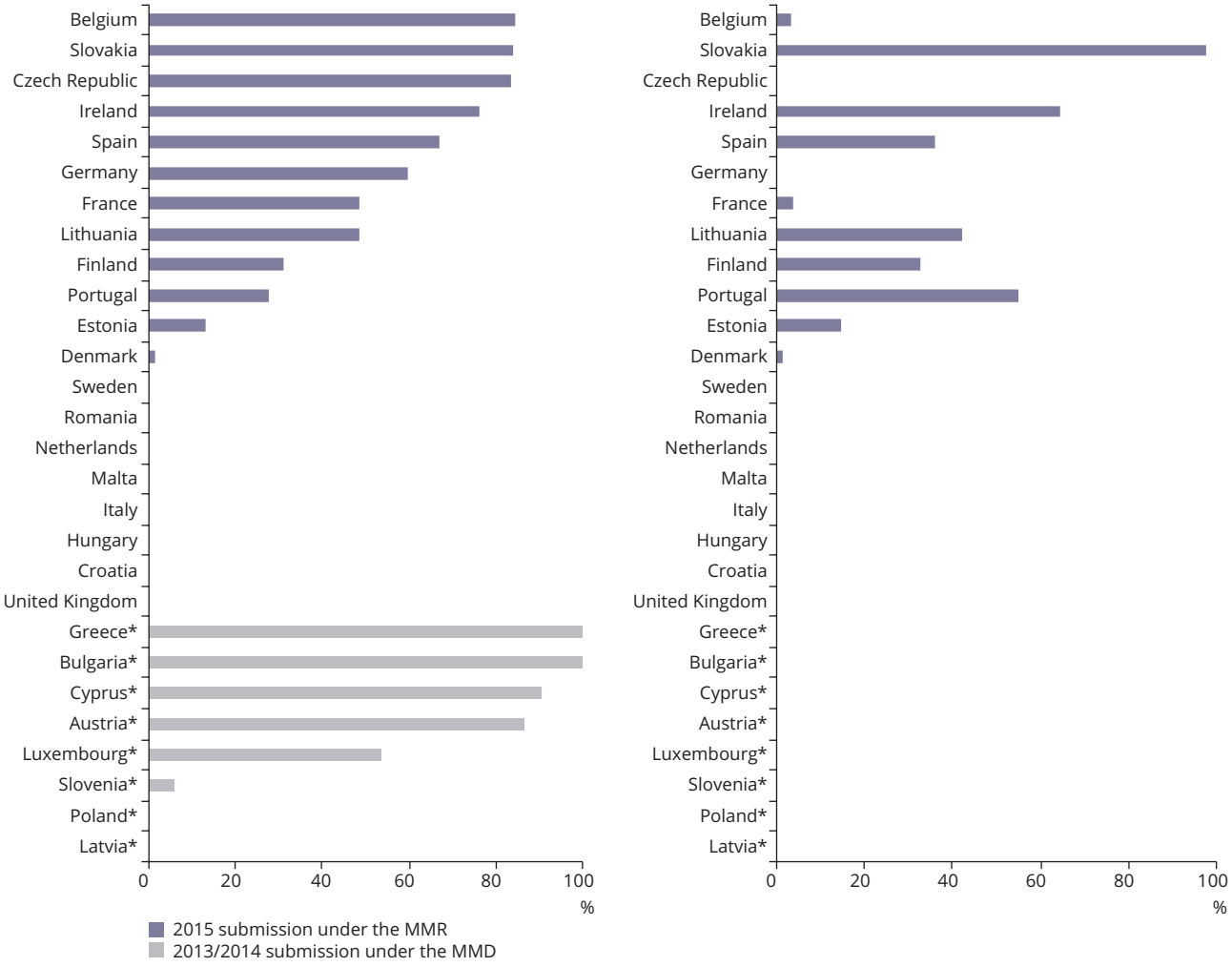
Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

of the reported PaMs quantitative indicator values were provided. It shows that only 10 Member States reported quantitative indicators for PaMs. For Portugal and Slovakia, the right-hand bars are larger than the left-hand bars, as these countries reported more than one indicator, including values per policy.

Figure 4.16 seems to suggest that completeness of reporting was better for Member States for which 2013 submissions were used (grey bars), than for Member States for which 2015 submissions were used (blue bars). For Austria, Bulgaria, Cyprus, Latvia and Slovenia reporting on indicators was indeed more complete in 2013 than in 2015 (based on the non-quality checked submissions after 25 June), but for Greece and Poland the completeness was similar and for Luxembourg it was better in 2015. The picture is more nuanced when comparing the 2013 and 2015 submissions for 20 Member States for which 2015 data were used in this report. This revealed that completeness was similar or better in 2015 than in 2013 for 11 Member States and reporting was markedly less complete in 2015 for eight Member States. For Croatia a comparison was not possible. An explanation could be that in the MMD, reporting of indicators was mandatory, while in the MMR this is only mandatory where used. This could have been an incentive for some Member States to report indicators for more PaMs in 2013, irrespective of whether these indicators where used to track progress over time or not.

Figure 4.17 shows that most Member States chose to report *ex ante* values, with figures for 2015, 2020, 2025 and 2030 reporting being used most often. Most values reported for 2020 represent either energy savings or CO_2 reductions.

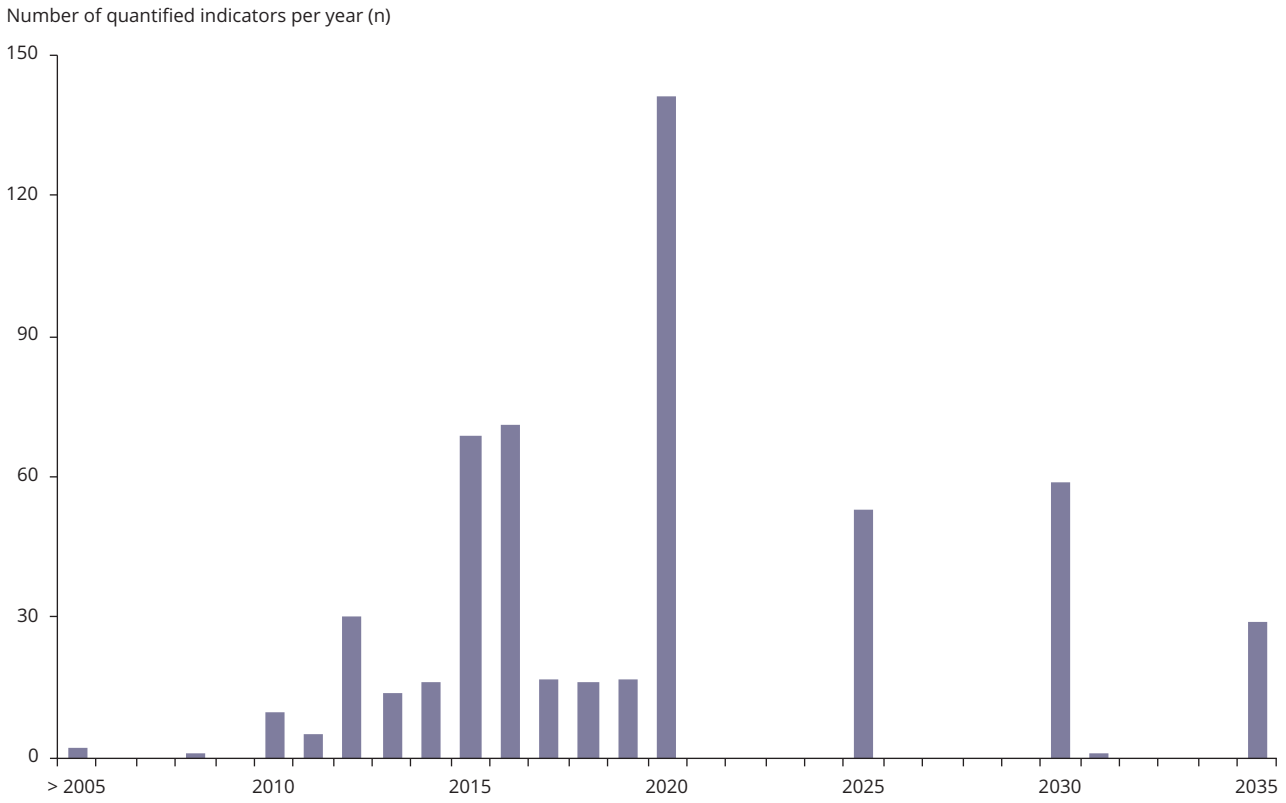
Figure 4.16 Reporting of qualitative and quantitative information on indicators by Member States



Note: (*) Member States for which 2013/2014 data were used.

Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

Figure 4.17 Number of quantified indicators reported per year



Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

Figure 4.18 gives an illustrative example of the indicator values reported for 2020. The 140 values available have been allocated to different indicator types (GHG emission, activity data, energy saving, relative targets, installed capacity) for each sector. It shows that most indicators were available for the energy consumption sector, where most indicators were expressed as energy saving values. Indicators for industrial processes relate to GHG emissions. The conclusion is that indicators reported by Member States cannot simply be summed up, as they are of different types and are calculated using different approaches.

An assessment of the available indicators shows that the reporting is not consistent across countries, and it becomes obvious that the monitoring of PaMs can be significantly improved. As the MMR states, the reporting of indicators is required only when they are used for monitoring purposes; it can be speculated that the national PaMs are either not monitored in Member States; or not reported. If the latter is the case, it would be interesting to know what prevents Member States from reporting their indicators. It also becomes obvious that even if descriptions for indicators are provided, values for specific years are not.

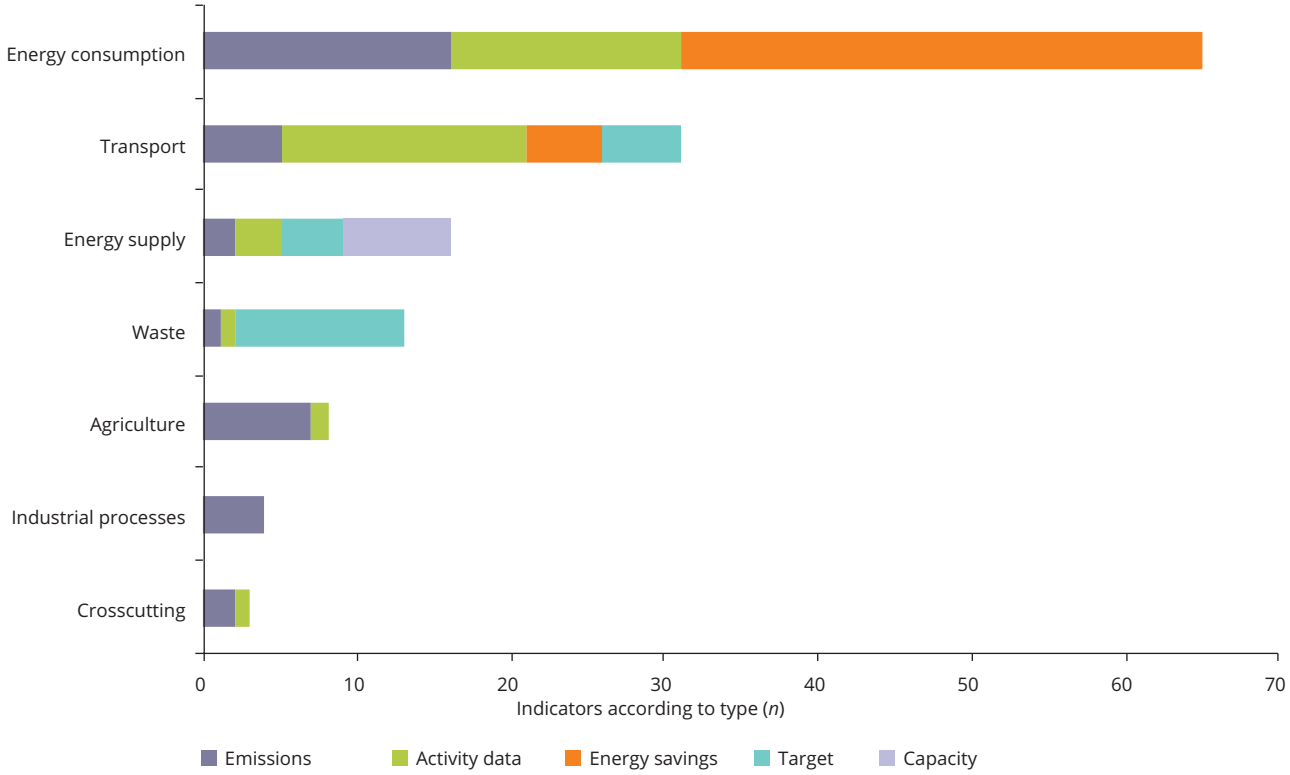
A quantitative assessment of indicators — namely an aggregation at EU level for similar PaMs — is not possible, owing to the limited and inconsistent information available at Member States level. In the following, different approaches to Member States' indicator reporting are presented:

- use of general, not PaM-specific, indicators;
- PaM-specific indicators;
- indicators used which were part of the MMD (priority, additional priority and supplemental indicators);

- use of emission limits or reduction targets;
- general indicator descriptions without units;
- target values or quantified objectives reported as ex ante indicators;
- hardly any time series of indicators reported, which makes monitoring rather difficult;
- hardly any references provided to underpin the values;
- constant values for whole time series;
- selection of single years.

The main reason for the inconsistent approach is that there is no general monitoring concept or guidelines for the *ex ante* and *ex post* progress assessment of PaMs. The description of PaMs is a free-text field, so Member States can enter anything. The MMR also lets the Member States choose the year for which the value is provided, which makes it even harder to make an assessment on EU level.

Figure 4.18 Number of indicators categorised by type, per sector



Source: EEA, 2015, 'EEA viewer of climate change mitigation policies and measures in Europe' (http://pam.apps.eea.europa.eu).

5 Recommendations

Reporting information on PaMs is essential for monitoring and understanding the actions taken at national level to mitigate climate change and achieve their commitments on greenhouse gas emissions. Detailed and transparent information on PaMs provides an essential piece of the knowledge base to understand and analyse GHG emission trends at national and EU levels, both historic and projected. Information on PaMs also supports policy evaluation and can provide useful examples of good practices in climate mitigation policies.

As highlighted in the previous chapters, there is considerable scope to improve the quality of the information on PaMs reported under the MMR. This section therefore provides recommendations that could help Member States and EU institutions improve the quality and usefulness of the reported information.

Completeness

Completeness appears to have improved compared with the previous reporting under the MMD. The online questionnaire and the automatic checks implemented in 2015 were a clear incentive to report all mandatory information. However, more non-mandatory information could be reported. This is the case, for instance, for references to external data sources and technical reports. The analysis presented above also suggests that in some cases, certain PaMs are not reported at all when they actually clearly should. This is for example the case when no PaMs are reported in relation to important EU policies or no reported PaMs target certain sectors in one country.

Completeness on quantified emissions savings could be improved in a number of cases. Two Member States (Hungary and Portugal) provided no quantified data for WEM PaMs, Denmark provided information on effects and costs of PaMs in the format that could not been used. Ex post assessments were missing for almost all countries and PaMs. The incompleteness does not allow for comparison or further analysis on the basis of existing PaMs reporting. The reporting of *ex ante* estimates for 2020 greatly improved compared to previous years, but remains particularly incomplete, for the years 2025, 2030 and 2035.

The reporting of costs and benefits is also very incomplete. Only a limited number of Member States provided information for a limited number of PaMs. Moreover, owing to differences in methodological approaches and the flexibility in how information can be reported, analysis is not possible at this stage. Member States are therefore recommended to report more quantitative information on PaMs, which is an essential element for evaluation of the effectiveness and efficiency of the different PaMs.

Other quality criteria (comparability, consistency and transparency)

There are large differences across Member States in the level of detail provided in the description of PaMs. Some Member States refer only to an external data source (e.g. the National Communication) for the description, whereas others provide extensive information. Member States are recommended to include a concise description of each PaM, rather than just a link.

The information reported by Member States often showed a lack of consistency, for example between the status, start and end year of implementation and projection scenario in which the PaM is considered, between the description and the instrument type or between the sectors affected by PaMs. The consistency between the information in the online questionnaire and the report should be ensured.

The lack of homogeneity of methods used to estimate *ex ante* impacts of PaMs across Member States makes these estimates uneasy to compare. It also makes any EU wide assessment of the total effects of national PaMs difficult. Transparency could be improved by reference to and disclosure of all relevant information underpinning the assessment.

Not all cases made reference to a suitable technical report and, in some cases, no report is publically available. In the cases in which the PaM report was

uploaded via ReportNet, the report should not duplicate information provided in the web template, but should provide additional background information on, for example:

- implementation framework: how is the measure being implemented;
- history of a PaM (e.g. development of taxes over the time);
- links between PaMs: which PaMs reinforce each other, which ones undermine each other;
- assumptions for estimating the mitigation impact;
- information about any impact assessments;
- cost–benefit information: methodology, references;
- description of national sectoral strategies/ programmes.

Timeliness

Only four Member States reported their information before or at the reporting deadline of 15 March 2015. The delay in reporting was primarily caused by the fact that a new online reporting tool was introduced and made available to Member States in early March 2015. This was different from previous years and, therefore, Member States required time to become accustomed to the new system and to transfer the information into the questionnaire. It is likely that this will not be such an issue in future reporting and that the timeliness of reporting will improve. The questionnaire allows Member States to upload, update and resubmit their information on PaMs very efficiently. Member States should be encouraged to update the reporting on PaMs annually, where appropriate, as is already provided in the MMR.

Annex 1 Reporting requirements related to the Monitoring Mechanism Regulation

A1.1 Regulation (525/2013) on a mechanism for monitoring and reporting greenhouse gas emissions and for reporting other information at national and European Union level relevant to climate change

A1.1.1 Article 13, Reporting on policies and measures

1. By 15 March 2015, and every two years thereafter, Member States shall provide the Commission with the following:

   a) description of their national system for reporting on policies and measures, or groups of measures, and for reporting on projections of anthropogenic greenhouse gas emissions by sources and removals by sinks pursuant to Article 12(1), where such description has not already been provided, or information on any changes made to that system where such a description has already been provided;

   b) updates relevant to their low-carbon development strategies referred to in Article 4 and progress in implementing those strategies;

   c) information on national policies and measures, or groups of measures, and on implementation of Union policies and measures, or groups of measures, that limit or reduce greenhouse gas emissions by sources or enhance removals by sinks, presented on a sectoral basis and organised by gas or group of gases (HFCs and PFCs) listed in Annex I. That information shall refer to applicable and relevant national or Union policies and shall include:

      (i) the objective of the policy or measure and a short description of the policy or measure;

      (ii) the type of policy instrument;

      (iii) the status of implementation of the policy or measure or group of measures;

      (iv) where used, indicators to monitor and evaluate progress over time;

      (v) where available, quantitative estimates of the effects on emissions by sources and removals by sinks of greenhouse gases broken down into:

      the results of *ex ante* assessments of the effects of individual or groups of policies and measures on the mitigation of climate change. Estimates shall be provided for a sequence of four future years ending with 0 or 5 immediately following the reporting year, with a distinction between greenhouse gas emissions covered by Directive 2003/87/EC and those covered by Decision No 406/2009/EC;

      the results of *ex post* assessments of the effects of individual or groups of policies and measures on the mitigation of climate change, with a distinction between greenhouse gas emissions covered by Directive 2003/87/EC and those covered by Decision No 406/2009/EC;

      (vi) where available, estimates of the projected costs and benefits of policies and measures, as well as estimates, as appropriate, of the realised costs and benefits of policies and measures;

      (vii) where available, all references to the assessments and the underpinning technical reports referred to in paragraph 3;

   d) the information referred to in point (d) of Article 6(1) of Decision No 406/2009/EC;

e) information on the extent to which the Member State's action constitutes a significant element of the efforts undertaken at national level as well as the extent to which the projected use of joint implementation, of the CDM and of international emissions trading is supplemental to domestic action in accordance with the relevant provisions of the Kyoto Protocol and the decisions adopted thereunder.

2. A Member State shall communicate to the Commission any substantial changes to the information reported pursuant to this Article during the first year of the reporting period, by 15 March of the year following the previous report.

3. Member States shall make available to the public, in electronic form, any relevant assessment of the costs and effects of national policies and measures, where available, and any relevant information on the implementation of Union policies and measures that limit or reduce greenhouse gas emissions by sources or enhance removals by sinks along with any existing technical reports that underpin those assessments. Those assessments should include descriptions of the models and methodological approaches used, definitions and underlying assumptions.

A1.2 Implementing Regulation (749/2014) on structure, format, submission processes and review of information reported by Member States pursuant to Regulation (EU) No 525/2013 of the European Parliament and of the Council

A1.2.1 Article 22, Reporting on policies and measures

1. Member States shall report the information on policies and measures referred to in Article 13(1) (c), (d) and (e) of Regulation (EU) No 525/2013 in accordance with the tabular formats set out in Annex XI to this Regulation and using the reporting template provided and the submission process introduced by the Commission.

2. Member States shall report qualitative information regarding the links between the different policies and measures reported pursuant paragraph 1 and the way such policies and measures contribute to the different projection scenarios including an assessment of their contribution to the achievement of a low-carbon development strategy, in a textual format in addition to the tabular format referred to in paragraph 1.

Table A1.1 Sectors and gases for reporting on policies and measures and groups of measures, and type of policy instrument

PAM number	Name of policy or measure	Sector(s) affected[a]	GHG(s) affected[b]	Objective[c]	Quantified objective[d]	Short description[e]	Type of policy instrument[f]	Union policy which resulted in the implementation of the PAM		Status of implementation[i]	Implementation period		Projections scenario in which the PAM is included	Entities responsible for j implementing the policy [l]		Indicators used to monitor and evaluate progress over time					Reference to assessments and underpinning technical reports	General comments
								Union policy[g]	Other[h]		Start	Finish		Type	name	Description	Values [k] [Year]	[Year]	[Year]	[Year]		

Notes: Abbreviations: GHG = greenhouse gas; LULUCF = land use, land-use change and forestry.

[a] Member States must select from the following sectors: energy supply (comprising extraction, transmission, distribution and storage of fuels as well as energy and electricity production), energy consumption (comprising consumption of fuels and electricity by end users such as households, services, industry and agriculture), transport, industrial processes (comprising industrial activities that chemically or physically transform materials leading to greenhouse gas emissions, use of greenhouse gases in products and non-energy uses of fossil fuel carbon), agriculture, forestry/LULUCF, waste management/waste, cross-cutting, other sectors.

[b] Member States must select from the following GHGs (more than one GHG can be selected): carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), sulphur hexafluoride (SF_6), nitrogen trifluoride (NF_3).

[c] Member States must select from the following objectives (more than one objective can be selected, additional objectives could be added and specified under 'other'):
For **energy supply** — increase in renewable energy; switch to less carbon-intensive fuels; enhanced non-renewable low carbon generation (nuclear); reduction of losses; efficiency improvement in the energy and transformation sector; carbon capture and storage; control of fugitive emissions from energy production; other energy supply.
For **energy consumption** — efficiency improvements of buildings; efficiency improvement of appliances; efficiency improvement in services/tertiary sector, efficiency improvement in industrial end-use sectors, demand management/reduction; other energy consumption.
For **transport** — efficiency improvements of vehicles; modal shift to public transport or non-motorized transport; low carbon fuels/electric cars; demand management/reduction; improved behaviour; improved transport infrastructure; other transport.
For **industrial processes** — installation of abatement technologies; reduction of emissions of fluorinated gases; replacement of fluorinated gases by other substances; improved control of fugitive emissions from industrial processes; other industrial processes.
For **waste management/waste**– demand management/reduction; enhanced recycling; enhanced CH_4 collection and use; improved treatment technologies; improved landfill management; waste incineration with energy use; improved wastewater management systems; reduced landfilling; other waste.
For **agriculture** — reduction of fertilizer/manure use on cropland; other activities improving cropland management, improved livestock management, improved animal waste management systems; activities improving grazing land or grassland management, improved management of organic soils,; other agriculture.

For **forestry/LULUCF** — afforestation and reforestation; conservation of carbon in existing forests, enhancing production in existing forests, increasing the harvested wood products pool, enhanced forest management, prevention of deforestation, strengthening protection against natural disturbances, substitution of GHG intensive feedstocks and materials with harvested wood products; prevention of drainage or rewetting of wetlands, restoration of degraded lands, other LULUCF.
For **cross-cutting** –framework policy, multi-sectoral policy, other cross-cutting.
For **Other** Member States must provide a brief description of the objective.

(d) Member States must include the figure(s) if the objective(s) is(are) quantified.

(e) Member States must indicate in the description if a policy or measure is envisaged with a view to limiting GHG emissions beyond Member State commitments under Decision No 4 06/2009/EC in accordance with Article 6(1)(d) of Decision No 406/2009/EC.

(f) Member States must select from the following policy types: economic; fiscal; voluntary/negotiated agreements; regulatory; information; education; research; planning; other.

(g) Union policy implemented through the national policy or where national policies are aimed directly at meeting objectives of Union policies. Member State should select a policy from a list provided in the electronic version of the tabular format

(h) Secondary Union policy: Member State must indicate any Union policy not listed in the previous column or an additional Union policy if the national policy or measure relates to several Union policies.

(i) Member States must select from the following categories: planned; adopted; implemented; expired.
Expired policies and measures must be reported in the template only if they have an effect, or they are expected to continue to have an effect,on greenhouse gas emissions

(j) Member States must enter the name/s of entities responsible for implementing the policy or measure under the relevant headings of: National government; Regional entities; Local government; Companies/ businesses/industrial associations; Research institutions; Others not listed (more than one entity can be selected)..

(k) Member States must provide any indicator used and values for such indicators that they use to monitor and evaluate progress of policies and measures. Those values can be either *ex-post* or *ex-ante* values and Member States must specify the year for which the value applies.

Table A1.2 Available results of ex-ante and ex-post assessments of the effects of individual or groups of policies and measures on mitigation of climate change (a)

Policy or measure or groups of policies and measures	Policy impacting EU ETS or ESD emissions (both can be selected)			Ex-ante assessment												Ex-post assessment				
				GHG emissions reductions in t (kt CO_2-equivalent per year)			GHG emissions reductions in t+5 (kt CO_2-equivalent per year)			GHG emissions reductions in t+10 (kt CO_2-equivalent per year)			GHG emissions reductions in t+15 (kt CO_2-equivalent per year)			Year for which reduction applies	Average emission reduction (kt CO_2- equivalent per year)	Explanation of the basis for the mitigation estimates	Factors affected by PAM	Documentation/Source of estimation if available (provide a weblink of the report where the figure is referenced from)
	EU ETS	ESD	LULUCF	Total	EU ETS	ESD	Total	EU ETS	ESD	Total	EU ETS	ESD	Total	EU ETS	ESD					

(a) — Member States are to include all the policies and measures or their groups of policies and measures for which such assessment is available.

Table A1.3 Available projected and realised costs and benefits of individual or groups of policies and measures on mitigation of climate change

Policy or measure or groups of policies and measures	Projected costs and benefits						Realised costs and benefits				
	Costs in EUR per tonne CO_2eq reduced/ sequestered	Absolute costs per year in EUR (specify year cost has been calculated for)	Description of cost estimates (Basis for cost estimate, what type of costs are included in the estimate, methodology)	Price year	Year for which calculated	Documentation/Source of cost estimation	Costs in EUR per tonne CO_2eq reduced/ sequestered	Price year	Year for which calculated	Description of cost estimates (Basis for cost estimate, what type of costs are included)	Documentation/Source of cost estimation

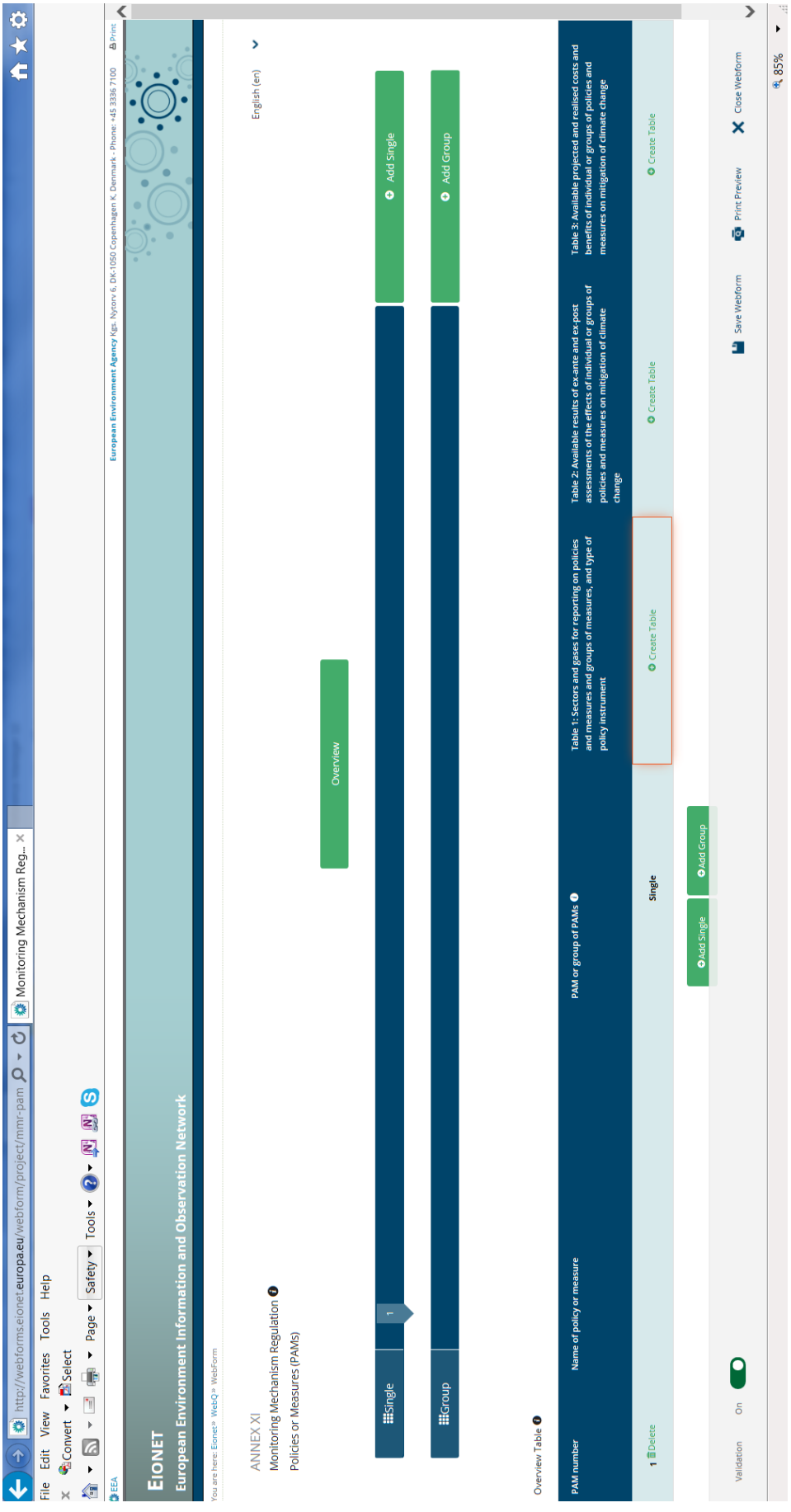
Note: Member States are to include all the policies and measures or their groups where such assessment is available.

A benefit must be indicated in the template as a negative cost.

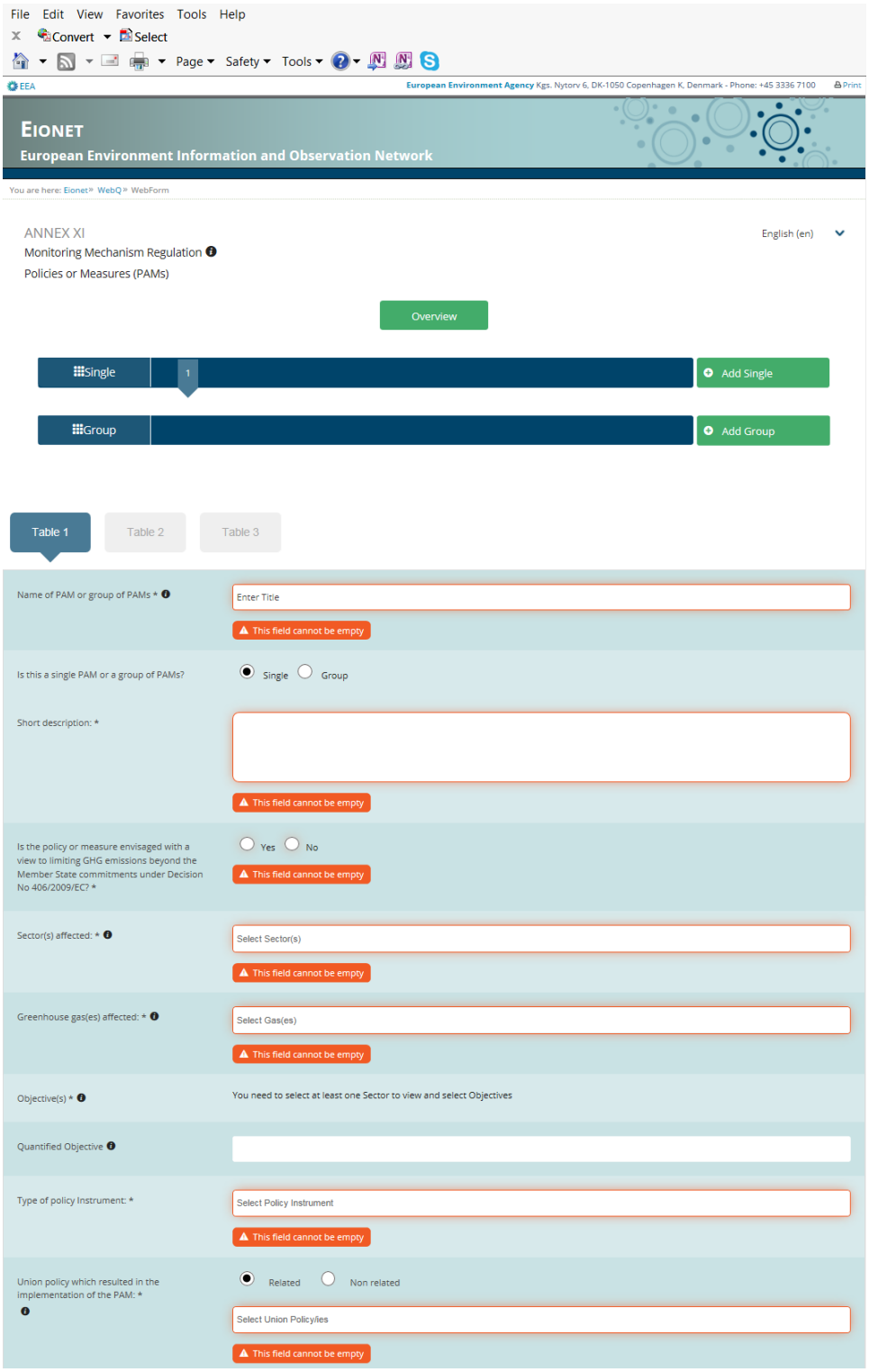
If available, costs and benefits for the same PAM or group of PAMs should be entered in two separate rows, with the net-cost in a separate third row for the PAM or group of PAMs. If the costs reported is net-costs covering both positive costs and benefits (= negative costs) this should be indicated.

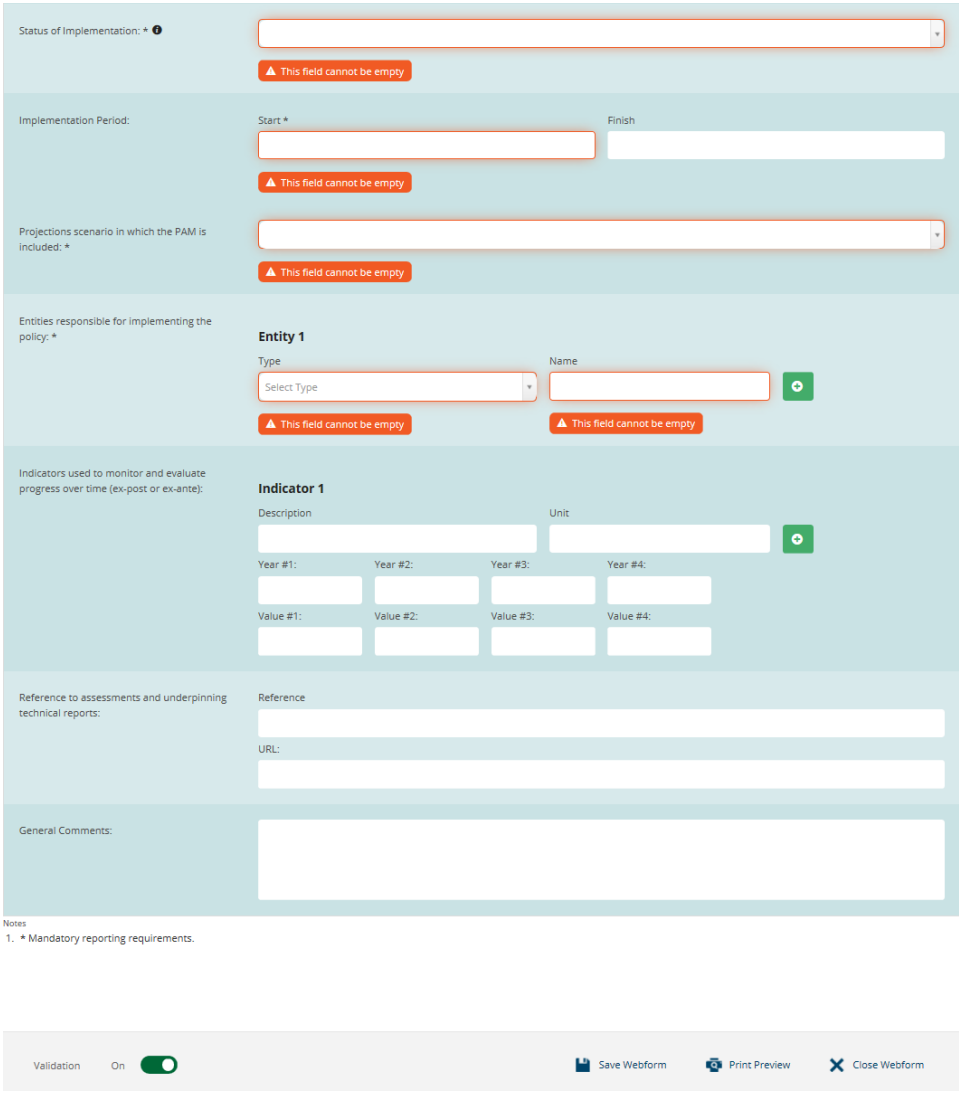
A1.3 Online reporting questionnaire — ReportNet

Overview table



Reporting Table 1 for single PaMs




Status of Implementation: *
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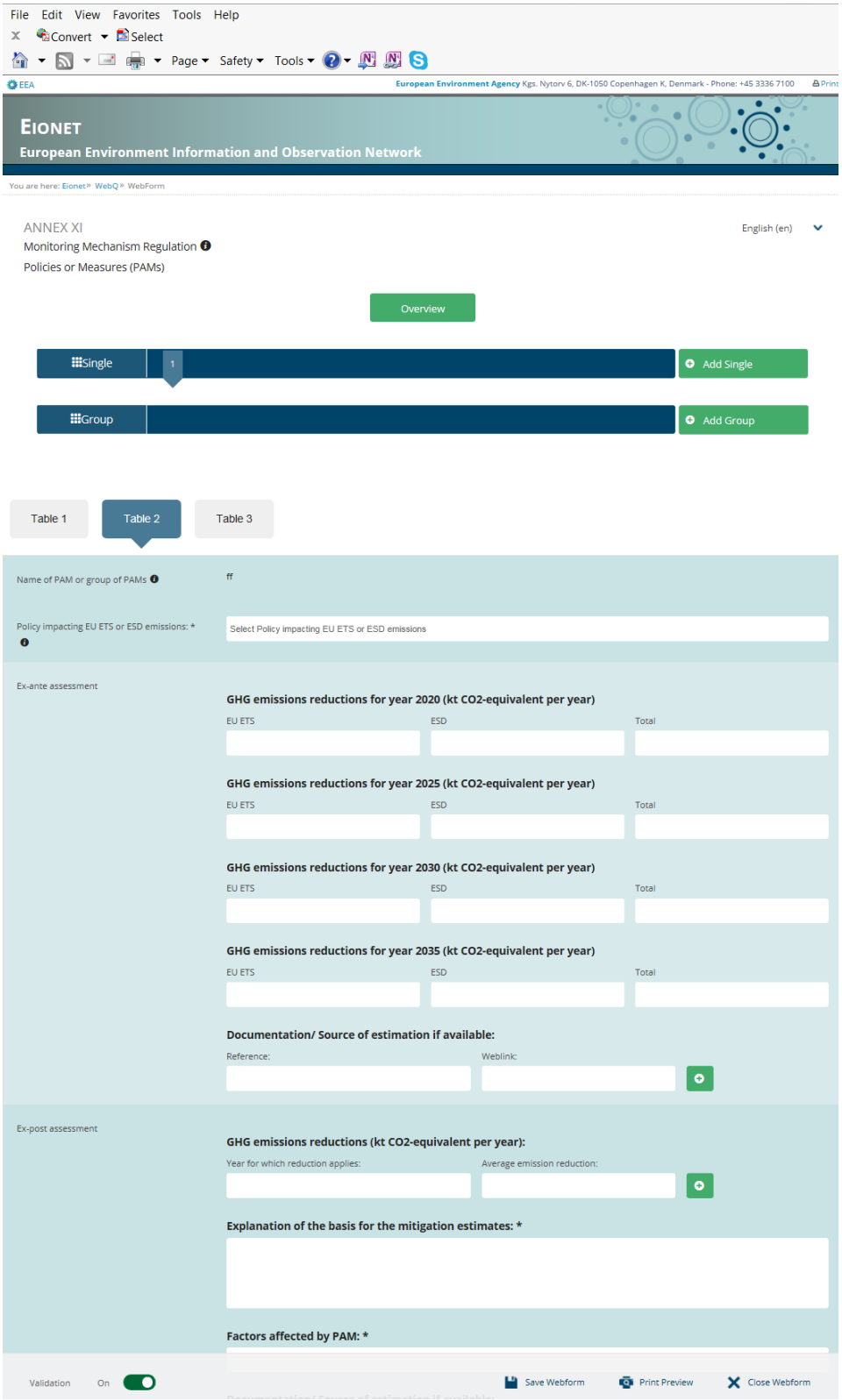
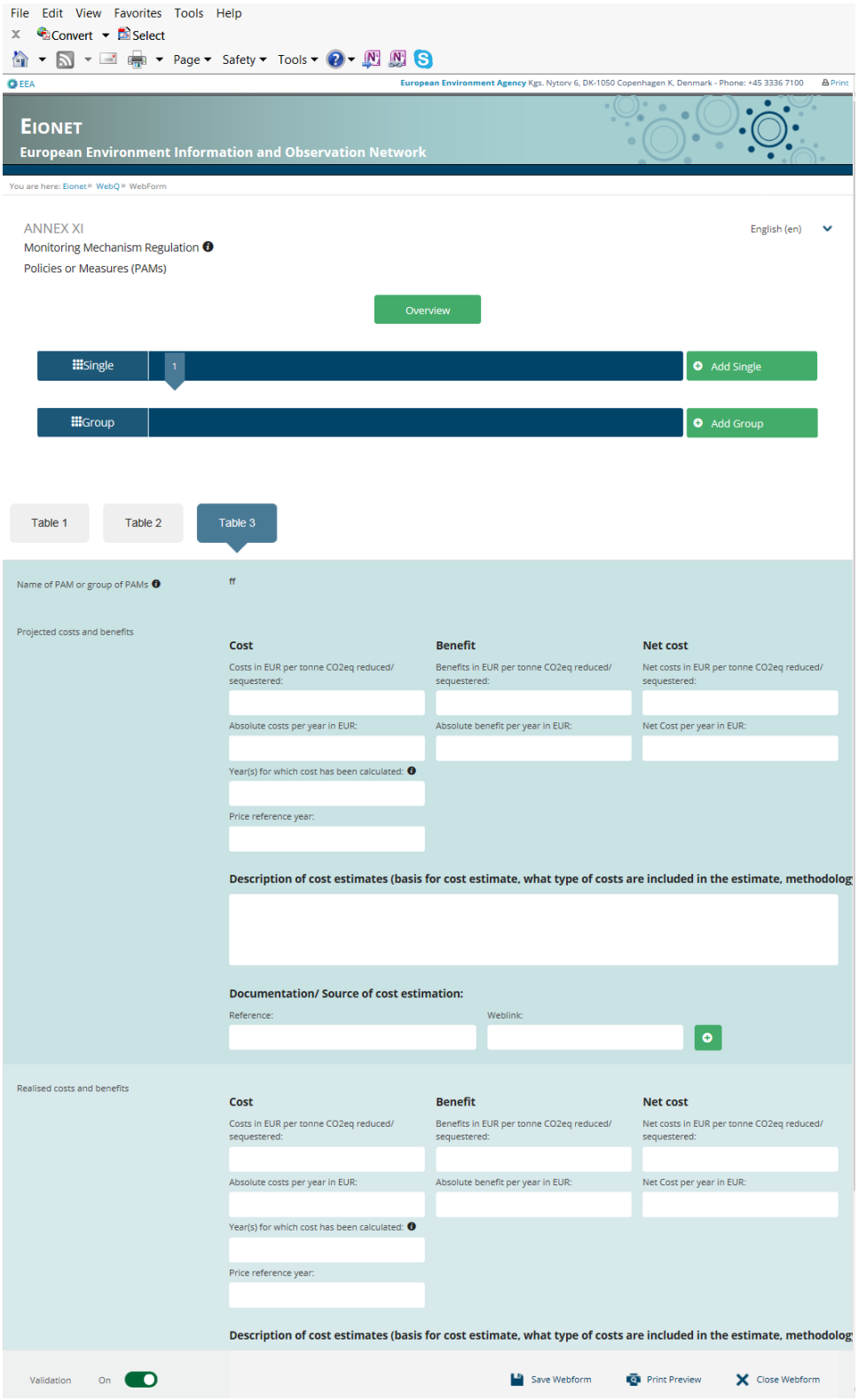
Implementation Period:
Start *
Finish
This field cannot be empty
Projections scenario in which the PAM is included: *
This field cannot be empty
Entities responsible for implementing the policy: *
Entity 1
Type
Select Type
Name
This field cannot be empty
This field cannot be empty
Indicators used to monitor and evaluate progress over time (ex-post or ex-ante):
Indicator 1
Description
Unit
Year #1:
Year #2:
Year #3:
Year #4:
Value #1:
Value #2:
Value #3:
Value #4:
Reference to assessments and underpinning technical reports:
Reference
URL:
General Comments:
Notes
1. * Mandatory reporting requirements.
Validation
On
Save Webform
Print Preview
Close Webform

Reporting Table 2 for single PaMs



Reporting Table 3 for single PaMs



Annex 2 Analysis of additional information on policies and measures provided in the accompanying report, under the MMR

Member States are required to report information on their policies and measures using the tabular formats set out in Annex XI of the regulation ((EU) No 749/2014). Additionally, Member States shall also provide qualitative information on their policies and measures in a textual format.

Article 22 of the Implementing Regulation ((EU) No 749/2014) specifies in paragraph 2 the following:

Member States shall report qualitative information regarding the links between the different policies and measures reported pursuant paragraph 1 and the way such policies and measures contribute to the different projection scenarios including an assessment of their contribution to the achievement of a low-carbon development strategy, in a textual format in addition to the tabular format referred to in paragraph 1.

The main objective of the report should be to provide transparency concerning the links between PaMs and the projection scenarios.

No specific guidance for the content and the outline of this accompanying report covering projections and policies and measures exists. This is why Member States' reports differ widely in content, in size and in structure.

A2.1 Submitted reports

A total of 16 (Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, France, Finland, Germany, Greece, Italy, Lithuania, Malta, Portugal, Spain and Sweden) out of 28 Member States submitted a report under the MMR which included a chapter on PaMs. Three Member States provided only notes on PaMs, outlining the links (Austria) to projections, answering the paragraphs of Article 13 (Netherlands) or explaining the overall methodology (United Kingdom). Two Member States (Poland and Romania) provided reports that focused only on projections. Two other Member States (Ireland and Slovakia) included information on PaMs in their projection chapters. Five Member States (Cyprus, Hungary, Latvia, Luxembourg and Slovenia) did not provide a report neither for projections nor for PaMs.

A2.2 Reports content

The length of the PaM chapters varies widely from 1 to 66 pages depending if single PaMs are actually described, or if methodologies for quantifying the effects are provided, or if general information on national strategies and programmes is provided. This diversity is mainly due to the fact that there is no specific guidance on how to structure the report or which information should be provided.

A2.3 Additional information on specific PaMs

In nine reports, background information additional to the one provided in the template is available. In one reports, there is only partly PaM-specific information available, and in another report information about the PaMs is included in the corresponding sectoral projections chapter.

A2.4 Information on PaMs related to specific sectors

Most of the reports (18) have the PaM chapter structured according to the sectors, whereby the information provided differs widely. It ranges from mentioning national sectoral strategies and general sectoral background information to detailed descriptions of all relevant PaMs. Some Member States introduced subchapters to their sectoral descriptions, which are aligned to either the policy scenario (WEM, WAM) or instrument types (national instruments, EU instruments).

A2.5 Links between PaMs and projection scenarios reported under the MMR

This question was answered by looking if the report lays down clearly to which projections scenario a policy or measures is belonging, and if it is clear methodological-wise how policies affect the projections. Some countries provide tables where the PaMs, their effect, the concerned sector and the concerned

projection scenario are listed. The assessment showed that for 11 Member States the link to projections was more or less clear.

A2.6 Consistency with PaM information reported with the template

Member States were required to use the web template for reporting on their PaMs and to provide qualitative information in a textual format. For the countries which provided specific PaM information, it was checked if the PaMs listed in the template can also be found in the report. It showed that this was done for seven reports, in the other reports in which information was provided a more general approach was chosen by summarising PaMs in groups or sometimes simply the policy names were not the same.

A2.7 Language of the report

Four countries (France, Germany, Portugal and Spain) provided the information about their PaMs in the national language, all other reported in English.

European Environment Agency

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