

# REVIEW PRACTICE GUIDANCE



## **Assessment of Information Related to Impacts of Policies and Measures Reported in Technical Review Reports of Third Biennial Reports**

Background paper for the 7<sup>th</sup> Lead Reviewers Meeting,

5-6 March 2020, Bonn, Germany

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## **Acronyms and abbreviations**

Annex I Parties	Parties included in Annex I to the Convention
BR	Biennial report
BR1	First biennial report
BR2	Second biennial report
BR3	Third biennial report
BUR reporting guidelines	UNFCCC biennial update reporting guidelines for Parties not included in Annex I to the Convention, Annex III, decision 1/CP.17
CTF	Common tabular format for “UNFCCC biennial reporting guidelines for developed country Parties”, Annex to decision 19/CP.18
ERT	Expert review team
FTC	Financial, technological and capacity-building (support)
GHG	greenhouse gas
LR	Lead reviewer
LULUCF	Land use, land-use change and forestry
MPGs	modalities, procedures and guidelines
NC	Not complete
NCs	National communications
NDC	Nationally determined contribution
PaMs	Policies and measures
Revised NC reporting guidelines	Guidelines for the preparation of national communications by Parties included in Annex I to the Convention, Part II: UNFCCC reporting guidelines on national communications. Annex, decision -/CP.25.
RPG	Review Practice Guidance
TRR	Technical review report
UNFCCC reporting guidelines on BRs	“UNFCCC biennial reporting guidelines for developed country Parties”, Annex I to Decision 2/CP.17.

## I. Background

1. The “Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention”<sup>1</sup> request ERTs to: assess the completeness of BRs in accordance with the reporting requirements contained in Annex I to decision 2/CP.17 and Annex to decision 19/CP.18; undertake a detailed technical review of the information provided in the individual sections of the BRs; and identify issues relating to completeness, transparency, timeliness and adherence to the UNFCCC reporting guidelines on BRs, as per decision 2/CP.17.
2. The UNFCCC reporting guidelines on BRs (para. 6) require developed country Parties to report information on its mitigation actions it has implemented or plans to implement, asking that “Each Annex I Party **shall** provide information on its mitigation actions”. The CTF request developed country Parties to report in table 3 the estimate of mitigation impact in kt CO<sub>2</sub> in 2020 and other years deemed relevant by the Party.
3. The Revised NC reporting guidelines (para. 19) request developed country Parties to report impacts of PaMs in tabular format “The presentation of each policy or measure **shall** include information on each of the subject headings listed”. The BUR reporting guidelines request developing country Parties to provide information on methodologies and assumptions and, to the extent possible, estimated emission reductions, as part of information on the progress of implementation of the mitigation actions.
4. Reporting by Parties of impacts of their PaMs and the methodologies used to estimate the impacts of PaMs became more significant with the adoption in Decision 18/CMA.1 of “Modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement”. Paragraphs 85–86 of the MPGs state that “Each Party **shall** provide, to the extent possible, estimates of expected and achieved GHG emission reductions for its actions, policies and measures” and that “Each Party **shall** describe the methodologies and assumptions used to estimate the GHG emission reductions or removals due to each action, policy and measure, to the extent available.”.
5. In its conclusions and recommendations from their 6<sup>th</sup> meeting in 2019, the LRs requested the secretariat to continue collecting information on and analysing the review-related issues raised by the ERTs during reviews.<sup>2</sup>
6. Assessments of reporting on PaMs impacts by ERTs in TRRs to date suggests that this area has been a challenge for many developed country Parties. It also appears that appraisal of the impacts of PaMs remained a challenge for ERTs in the BR3 review cycle.

## II. Purpose and scope

7. The main purpose of this background paper is threefold:
  - (a) First, to provide Parties and reviewers insight into the evolution of the reporting of estimated impacts of PaMs and methodologies used over the BR1, BR2 and BR3 reporting cycles, which in turn reflects the challenges Parties face in identifying and applying the methodologies for PaMs impact assessment;
  - (b) Second, to highlight resources available on methodologies for PaMs assessment and examples of the methodologies applied. This summary information could be useful to the Parties in preparing their next BR.

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<sup>1</sup> Annex to Decision 13/CP.20.

<sup>2</sup> See the conclusions and recommendations document of the 6<sup>th</sup> meeting of LRs for the review of BRs and NCs, available at [http://unfccc.int/national\\_reports/biennial\\_reports\\_and\\_iar/items/9296.php](http://unfccc.int/national_reports/biennial_reports_and_iar/items/9296.php).

(c) Third, provide guidance to ERTs in reviewing the reporting of the assessment of impacts of PaMs in future review cycles.

8. In all three BR review cycles, fewer than half of reported PaMs have corresponding estimated emissions reduction impacts, which may indicate that this is a particular reporting challenge among developed country Parties. This paper seeks to address this issue by providing information on the extent of existing reporting and methods used by Parties, in order to increase the flow of knowledge among Parties.

9. It should be emphasized that this paper covers an analysis of the BR1s, BR2s and BR3s that have been submitted as of 1 December 2019, as well as the TRRs of the BR3 reports. 41 Parties<sup>3</sup> have submitted a BR3 as of this date, of which 40 had been subject to the International Assessment and Review process. This is in comparison to 43 Parties that submitted a BR1 and 42 Parties that submitted a BR2. To maintain accurate insights, the comparisons between review cycles only include the 40 Parties that submitted a BR1, BR2 and BR3, unless otherwise indicated. Similarly, the comparisons are done solely based on the data submitted by Parties in their CTF tables, which has been consolidated in the biennial report data interface (BR-DI)<sup>4</sup>. In some cases, there are inconsistencies between what was reported in a Party's BR3 report body and its CTF tables. These instances have been noted in the text when they have been identified, but the figures and data represent the data as reported in CTF tables.

10. The PaMs data in the analyses that follow contains the reported data for both the EU and its member States. The totals include both in order to compare trends in reporting, but contain some degree of double counting, particularly with respect to estimated impacts.

11. This paper serves primarily as an input to the 7<sup>th</sup> meeting of LRs for the review of BRs and NCs, to be held on 5 and 6 March 2020 in Bonn, Germany, to improve their understanding of the challenges of and solutions for the assessment of the information related to estimated impacts of PaMs reported in BRs and NCs.

12. Sections I and II have introduced the subject, purpose and scope of this paper. Section III provides an in-depth analysis of the information reported in TRR3s and comparisons to the information reported in earlier review cycles. Section IV provides a potential framework for the evaluation of reported methodologies for estimating the impacts of PaMs. Last, section IV outlines the conclusions and recommendations for consideration by the LRs.

### **III. Analysis of reporting of estimated impacts of PaMs in the first, second and third biennial reports**

#### **A. Trends in reporting of impacts**

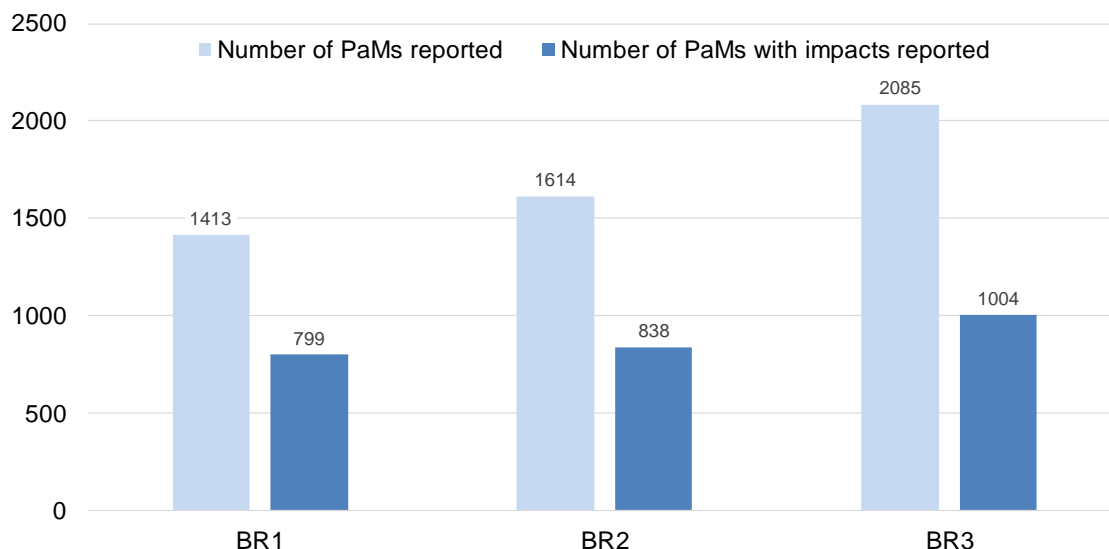
13. The number of PaMs reported has steadily increased with each new review cycle, however, the number of PaMs with estimated impacts reported is growing at a slower rate. 2085 PaMs were reported in BR3, as compared to 1614 and 1413 in BR2 and BR1, respectively, representing an average annual growth rate of 21 per cent. For PaMs reported with estimated impacts (including those reported as IE), these figures are 1004, 838 and 799, respectively, with average annual growth of only 12 per cent. Figure 1 illustrates these trends.

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<sup>3</sup> Australia, Austria, Belarus (not yet reviewed), Belgium, Bulgaria, Canada, Croatia, Cyprus, Czech Republic, Denmark, Estonia, European Union, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Kazakhstan, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom

<sup>4</sup> Available at <http://www4.unfccc.int/sites/br-di/Pages/Home.aspx>

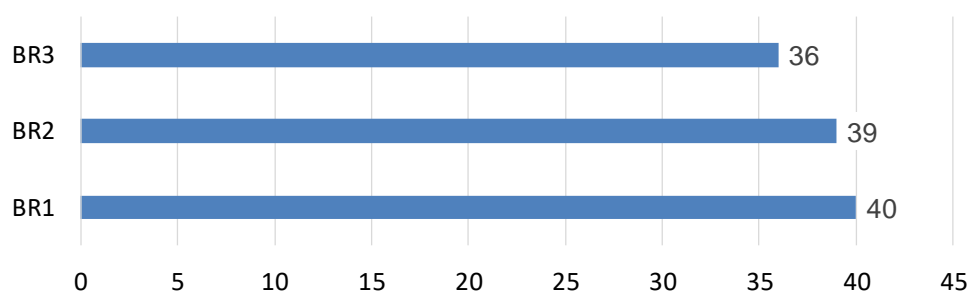
Figure 1  
**Total number of PaMs reported per cycle**



14. While the number of PaMs with estimated impacts has increased over the three reporting periods, the number of Parties reporting in their CTF tables at least one PaM with an estimated impact has decreased from 40 in BR1 to 39 in BR2 to 36 in BR3. These trends are shown in figure 2 below. There are various reasons for why a Party has reported impacts in the past but not in the BR3 CTF table 3. For instance, Portugal reported that it was in the process of implementing a new set of PaMs and that impacts would be calculated later in that process. Iceland reported that it was undertaking improvements to its ability to project emissions and emissions reductions and expected to be able to report estimated impacts of PaMs as a result. Sweden estimated the impacts of its PaMs in clusters, but it reported the impacts only in its BR3 report body, not the CTF tables. Monaco reported the estimated impacts of some individual PaMs in its report body but did not include that information in CTF table 3.

15. Correspondingly, the average number of PaMs reported with impacts (including those reported as IE) per Party reporting them has increased over the same period from 20.0 to 22.1 to 28.7. This change is likely explained by increased capability and sophistication of these Parties.

Figure 2  
**Number of Parties reporting impacts in CTF table 3 for one or more PaMs**



16. Several analyses were developed during this assessment of estimated impacts of PaMs reported by Parties in the first three BR cycles in order to assist in identifying inconsistencies and errors in reporting. In particular, comparing each Party’s total reported impacts of PaMs with the values reported in prior BRs and to their latest total emissions were both found to be valuable, as outliers identified when further investigation is warranted. Annex 1 provides examples of the type of information that could assist ERTs in making similar assessments in future review cycles.

17. In the BR3 review cycle, 27 Parties (of the 41 that have been reviewed to date) received recommendations related to not reporting the estimated impacts of PaMs. Most of these were related to CTF table 3. At the 6<sup>th</sup> LRs meeting, the LRs amended the RPG<sup>5</sup> to provide additional clarity for reporting estimated impacts and when explanations should be provided in their absence. The extent of the recommendations in the TRR3s indicates that there is a capacity-building need among many developed country Parties to strengthen their ability to estimate the impacts of PaMs. Increasing efforts to share methodologies and lessons learned by those Parties that are successfully estimating the impacts of their PaMs could facilitate improved reporting by both developed and developing country Parties in preparation for reporting under the MPGs.

## **B. Trends in reporting of impacts of grouped PaMs**

18. Since the BR1, some Parties have reported impacts for some PaMs as “included elsewhere” often abbreviated as “IE”, to indicate individual PaMs that have had their impacts analysed as part of a larger group of PaMs. These grouped (also referred to in TRRs as bundled) PaMs can provide a way for Parties to estimate the impacts of PaMs that might otherwise be excessively difficult to evaluate individually.

19. Reasons given by Parties for the need to estimate impacts in groups include impacts that are difficult to attribute to a single PaM, such as an incentive for an energy efficient product and an education program promoting general awareness of energy conservation. In some instances, no explanation for the use of grouped PaMs was provided, and in others the relationship between the group and individual PaMs was not clear. The 2019 and draft 2020 RPGs contain new guidance on reporting the impacts of grouped PaMs and the need for providing corresponding explanations to support their use.

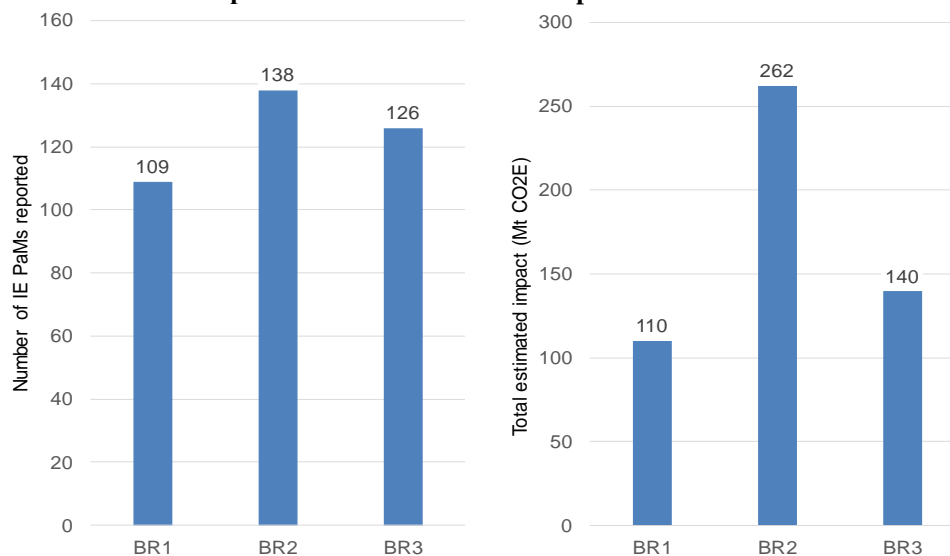
20. The number of Parties reporting grouped PaMs has varied over the three reporting cycles, with 10 Parties doing so in BR1 and BR3 and 14 in BR2. The total impacts reported this way has similarly varied, with 140 Mt CO<sub>2</sub> eq of estimated emission reductions reported this way in BR3<sup>6</sup>, 262 Mt CO<sub>2</sub> eq in BR2 and 110 Mt CO<sub>2</sub> eq in BR1. This information is summarized below in figure 3.

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<sup>5</sup> Available at: <https://unfccc.int/documents/193970>.

<sup>6</sup> This figure does not include the 18.1 Mt that Sweden reported in its textual BR3 but did not include in its CTF table.

Figure 3  
Number of PaMs reported as IE and their total impact



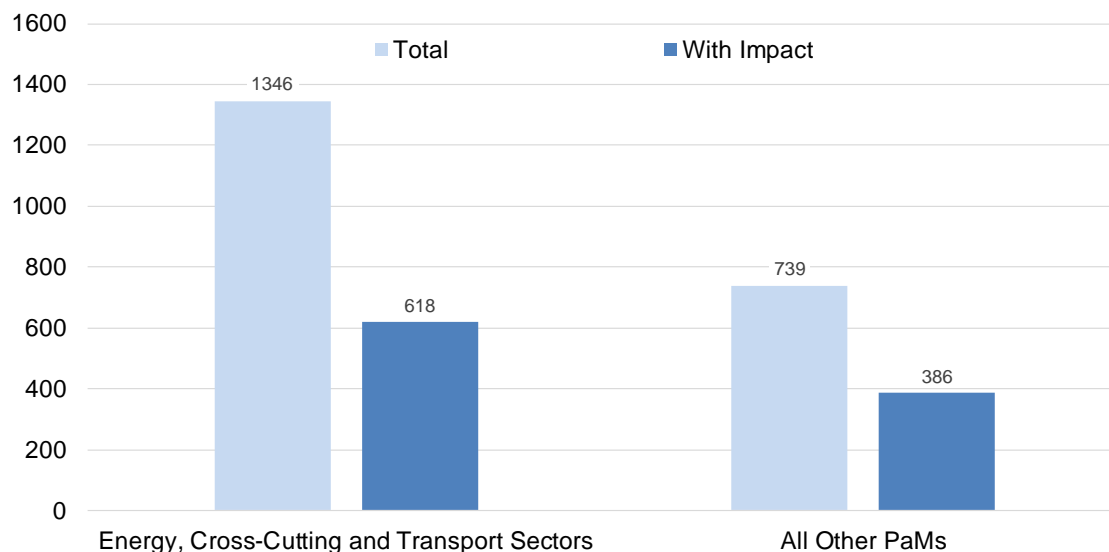
21. The Parties that reported impacts in grouped PaMs changed over time, with some reporting “IE” in one reporting cycle and then estimating the impacts individually in a subsequent cycle. One possible interpretation of this is that some Parties use “IE” when first reporting the impacts of more difficult to estimate PaMs, and then disaggregate them later when their modelling capacity or resources have increased. This would indicate that using grouped PaMs may offer a pathway for Parties that are currently not reporting estimated impacts to begin to do so.

### C. Sectoral distribution of PaMs with estimated impacts

22. The number of PaMs reported with and without impacts were analysed on a sectoral basis to give insight into which sector’s PaMs may be proving the most difficult for Parties to estimate. The majority of both the number of PaMs reported (65 per cent) and the estimated impacts (91 per cent) are focused on the cross-cutting, energy and transport sectors. This mirrors where the majority of emissions in developed country Parties are produced. However, while the vast majority of estimated impacts in the BR3 cycle are from PaMs that effect at least one of those sectors, PaMs that do not impact those sectors are more likely to have estimated impacts reported. As shown in figure 4, 46 per cent of reported PaMs that effect the cross-cutting, energy or transport sectors have impacts reported, compared to 52 per cent of PaMs in other sectors. This gap has narrowed since the BR1 cycle but indicates that improving the capacity to estimate impacts in the energy, cross-cutting and transport sectors remains important.



Figure 4  
Distribution of reported PaMs by sector in BR3s



#### D. Analysis of methodologies reported for estimating impacts of PaMs in BR3s

23. While the UNFCCC reporting guidelines on BRs do not specifically require Parties to report the methodologies for how they estimate the impacts of PaMs, the guidelines do require Parties to “provide information on changes in its domestic institutional arrangements, including institutional, legal, administrative and procedural arrangements used for domestic compliance, monitoring, reporting, archiving of information and evaluation of the progress towards its economy-wide emission reduction target.” In reporting this information, some Parties have included information on the methodologies used for estimating the impacts of PaMs.

24. Four Parties (Finland, Germany, Norway and Sweden) reported detailed information on their methodologies for estimating the impacts of individual or groups of PaMs. These four reports contained separate explanations for each of the multiple methodologies that were used to estimate impacts. The methodologies for modelling the impacts of economic instruments in the energy sector had particularly detailed descriptions. There was no uniformity in how these methodologies were labelled within the reports – examples include “calculation method,” “effects of policy instruments,” and “the emission impacts have been evaluated using...” In some cases, this makes distinguishing the information difficult. Table 1 below contains a summary of the methodologies for these Parties.

Table 1  
Summary of reported estimation methodologies

Party	Methodology
Finland	Emissions reductions from renewable electric generation are calculated based on forecasted production and an avoided emissions coefficient. In the buildings sector, the models for forecasting building energy use, including district heating, are described, along with the methodology for determining emissions coefficients.
Germany	The impacts of the EU ETS were calculated by projecting emissions with and without the ETS in the forecasting model. The impacts of Coal phaseout and Combined Heat and Power measures were calculated in a similar manner. A reference is made to an external source for the methodology for calculating

<i>Party</i>	<i>Methodology</i>
	the impacts of renewable energy PaMs. The impacts of most energy efficiency PaMs were calculated by estimating the energy savings and then using that to modify the inputs in the economy-wide forecasting model. A reference was made to an external source for the methodology used in estimating the impacts of most transport measures. Individual assumptions and details were provided for the methodologies used in most of the Waste, Agriculture, and LULUCF PaMs.
Norway	Detailed descriptions of parameters and assumptions are provided for most PaMs and often include qualitative explanations of uncertainty. In the transport sector, changes to the parameters used in the Statistics Norway road model related to several policies, including taxes, electric vehicle penetration rates and biofuels, are described and justified.
Sweden	Detailed descriptions were included on how the TIMES-NORDIC energy system model was used to estimate the emissions savings of various economic policy instruments. These economic PaMs were generally analysed in groups for various subsectors. Impacts of some transport PaMs were calculations were made using the HBEFA model, and the general methodology was described.

25. Two additional BR3s, those of Greece and the Netherlands, contained a general description of the methodology used to calculate individual emissions reduction estimates but did not include information specific to any given PaM or type of PaM. In addition to the information provided in the BRs, some reports also provided reference to external documents with more detailed information regarding methodologies for estimating the impacts of PaMs. These referenced reports were often not available in English.

#### **IV. Information for experts to consider when evaluating reporting**

26. The analysis above indicates a potential need to increase the capacity of Parties to estimate the mitigation impacts of PaMs. Parties that have developed the methodologies and are reporting high levels of estimated impacts can assist other Parties by reporting transparent explanations of their methods. This section provides information that reviewers can use to evaluate methodologies reported and provide guidance to Parties when more information would be helpful.

##### **A. Key criteria for consideration of methodologies**

###### **1. Comparability**

27. Parties should ensure that the different methodologies they use for different types of PaMs are producing results that can be compared with reasonable accuracy, such as ranking PaMs in terms of mitigation potential. Common data sources and underlying assumptions should be used. Parties should take this into consideration when the estimates for different types of PaMs are prepared by different agencies.

###### **2. Accuracy**

28. The accuracy of an approach for estimating the impacts of a PaM is a trade-off between increasing accuracy and the resulting increase in complexity and resources required. A transparent description of a methodology approach will describe the level of accuracy achieved and could also include the Party's approach to determining the level of accuracy needed and the options considered that would have provided higher or lower accuracy.

**3. Interactions**

29. The methodology for estimating the impact of an individual PaM should take into account how the PaM interacts with other PaMs. The total impact of a group of interacting PaMs can be larger, if the PaMs are reinforcing, or smaller, if they are overlapping, than the sum of the impact of each PaM acting in isolation.

**4. Boundaries**

30. A PaM can drive many individual changes in emissions that when combined result in its total impact. For example, a PaM that promotes the use of wind energy could cause significant reductions in several different GHGs in one type of power plant, small increases in emissions at another type of power plant, and short-term increases in emissions from manufacturing facilities. The boundaries of an impact assessment define which of the many impacts are included in the analysis. The decisions on where to create the boundaries can be based on the relative magnitude of the different impacts, the level of uncertainty of the impacts, and the desired accuracy of the analysis.

**5. Supporting data**

31. The assumptions and data used within the methodology for estimating the impacts of PaMs should be identified. Examples could include ex-post assessments from programme evaluations, data from similar PaMs in other jurisdictions, market assessment surveys and expert judgement.

**B. Reference materials for further information**

32. The sources identified in table 2 below could assist ERTs and Parties with additional detailed information on methodologies for estimating the impacts of PaMs.

Table 2

**Additional sources of information on impact estimation methodologies**

<i>Title and organization</i>	<i>Summary and link</i>
Ex post evaluation and policy implementation in the building sector European Environment Agency	Provides an overview of buildings-related PaMs and their impacts to date in the EU. Includes a detailed review of PaMs and their estimated impacts in six EU member States. Available at <a href="https://www.eionet.europa.eu/etcs/etc-atni/products/etc-atni-reports/eionet_rep_etcacm_2018_2_energy_efficiency_buildings">https://www.eionet.europa.eu/etcs/etc-atni/products/etc-atni-reports/eionet_rep_etcacm_2018_2_energy_efficiency_buildings</a> .
Policy and Action Standard World Resources Institute	Provides a comprehensive and systematic approach for estimating the past and future impacts of PaMs. Includes a holistic process approach as well as methodologies for all sectors and gases. Available at: <a href="http://ghgprotocol.org/sites/default/files/standards/Policy%20and%20Action%20Standard.pdf">http://ghgprotocol.org/sites/default/files/standards/Policy%20and%20Action%20Standard.pdf</a>
Climate Toolbox NDC Partnership	A searchable collection of tools, guidance, platforms, and advisory support related to PaMs and other topics related to planning and implementation of NDCs. Available at: <a href="https://ndcpartnership.org/ndc-toolbox">https://ndcpartnership.org/ndc-toolbox</a>
ICAT Series of Guidance Documents Initiative for Climate Action Transparency	A set of guides that provide sector-specific descriptions of methodologies for estimating the past and future impacts of PaMs. Also includes guidance on reporting and transparency of climate actions. Available at: <a href="https://climateactiontransparency.org/icat-toolbox/">https://climateactiontransparency.org/icat-toolbox/</a>

<i>Title and organization</i>	<i>Summary and link</i>
The California Evaluation Framework California Public Utilities Commission	Provides detailed descriptions of different approaches for monitoring and verification of energy efficiency PaMs and how results can be incorporated into ex-ante estimates of impacts. Available at: <a href="https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy/Energy_Programs/Demand_Side_Management/EE_and_Energy_Savings_Assist/CAEvaluationFramework.pdf">https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy/Energy_Programs/Demand_Side_Management/EE_and_Energy_Savings_Assist/CAEvaluationFramework.pdf</a>

### **C. Grouping of PaMs for estimating impacts**

33. As stated earlier, evaluating the impacts of some PaMs may only be practical when done in groups. This could apply for PaMs with small impacts, where the benefits of knowing the individual impacts are low, or for PaMs that are highly interactive and disaggregating the impacts of individual PaMs could be difficult or inaccurate.

34. When the impacts of PaMs are reported as “included elsewhere”, ERTs should confirm that the “parent” PaM has an estimated impact and that a sufficient explanation is given for the use of grouping.

### **D. Monitoring and evaluation**

35. As indicated above, Parties do have reporting requirements regarding their institutional arrangements for monitoring and evaluation of PaMs. Because the results of evaluations a PaM that has been implemented are often the data inputs into ex ante estimations of future impacts of that PaM or similar PaMs, this should be considered an integral part of the methodology and approach for reported estimated impacts by a Party.

36. The description of a Party’s evaluation process would ideally include the method or methods it utilizes for determining the effectiveness of existing PaMs, including the scheduled timing of such evaluations. The information could also describe how evaluation results are used in determining future estimates of the impacts of PaMs. It would also ideally include a discussion of how spill over, free-ridership and rebound effects are estimated and accounted for.

## **V. Conclusions and recommendation for consideration by the lead reviewers**

37. The analysis of the assessment of impacts of PaMs and the practices applied by ERTs in their review was drawn from the BR1s–BR3s and TRR1s–TRR3s reports and resulted in the following conclusions and recommendations to be considered by the LRs:

(a) Reporting of the impacts of PaMs has improved slightly between BR3 and BR1 reporting cycles in terms of number of PaMs with estimated mitigation impacts, yet many Parties still face challenges in assessing the impacts of PaMs and identifying and applying sound assessment methodologies. It would be sensible to continue the analysis for BR4 review cycle and present the results at the LRs meeting at the end of the review cycle;

(b) Tracking progress of Parties’ efforts to estimate the impacts of PaMs can help provide a clearer picture of the accuracy of estimates and where additional capacity may be needed. When reviewing a Party’s submission, ERTs should note improvements in that Party’s ability to report the estimated impacts of PaMs as compared to prior years. The BR-DI<sup>7</sup> provides the information reported by Parties in their CTF tables and can be used to make comparisons;

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<sup>7</sup> Available at <https://www4.unfccc.int/sites/br-di/Pages/Home.aspx>.

(c) The review and analysis of estimated impacts of PaMs reported by Parties in the first three BR cycles identified inconsistencies and errors in reporting. Recognizing the importance of accurate and comparable data, ERTs should examine reported impacts of PaMs for consistency with prior reports and the context of the Party's emissions. When correctable errors are identified, ERTs should encourage a Party to submit a revised CTF file;

(d) While reporting descriptions of methodologies for estimating the impacts of PaMs is not a mandatory reporting requirement, some Parties has chosen to provide a description in their BRs, which can assist knowledge transfer to other Parties. ERTs should consider commending Parties that report the methodologies used to estimate the impacts of PaMs, particularly when that reporting could help other Parties improve their own processes;

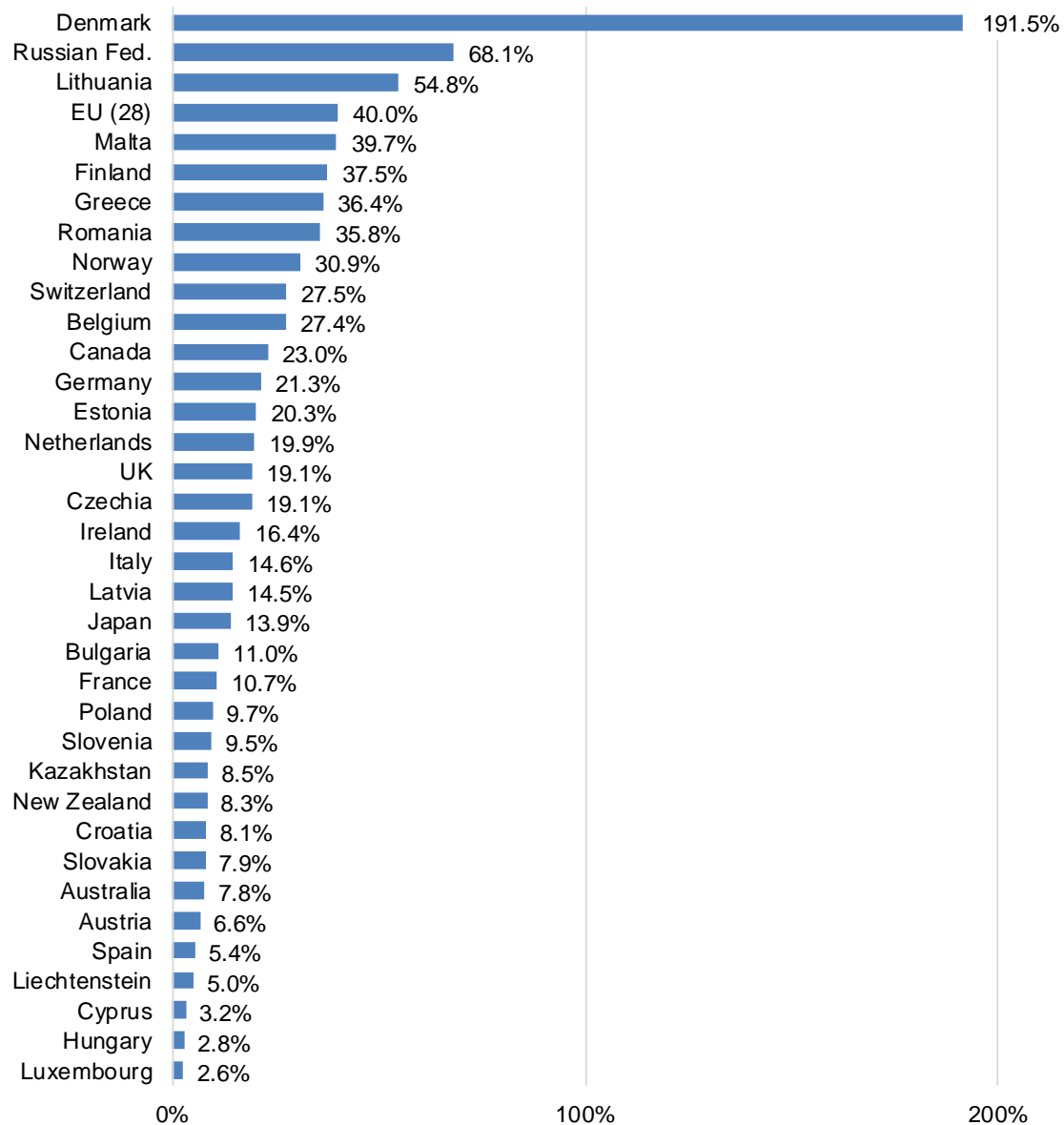
(e) The review and analysis of estimated impacts of PaMs reported by Parties in the first three BR cycles identified transparency issues with the use of grouped PaMs. When IE or its equivalent is used in CTF table 3 for reporting impacts of a PaM without explanation, ERTs should advise the Party to explain the reason for doing so and identify the PaM with an estimated impact in which it is encompassed;

**(f) The LRs may consider including some of the conclusions of this background paper in the RPG 2020 and the conclusions of the 7<sup>th</sup> LRs meeting, 2020.**

## Annex 1

### Sample analyses to aid ERTs in evaluating PaMs impact estimations

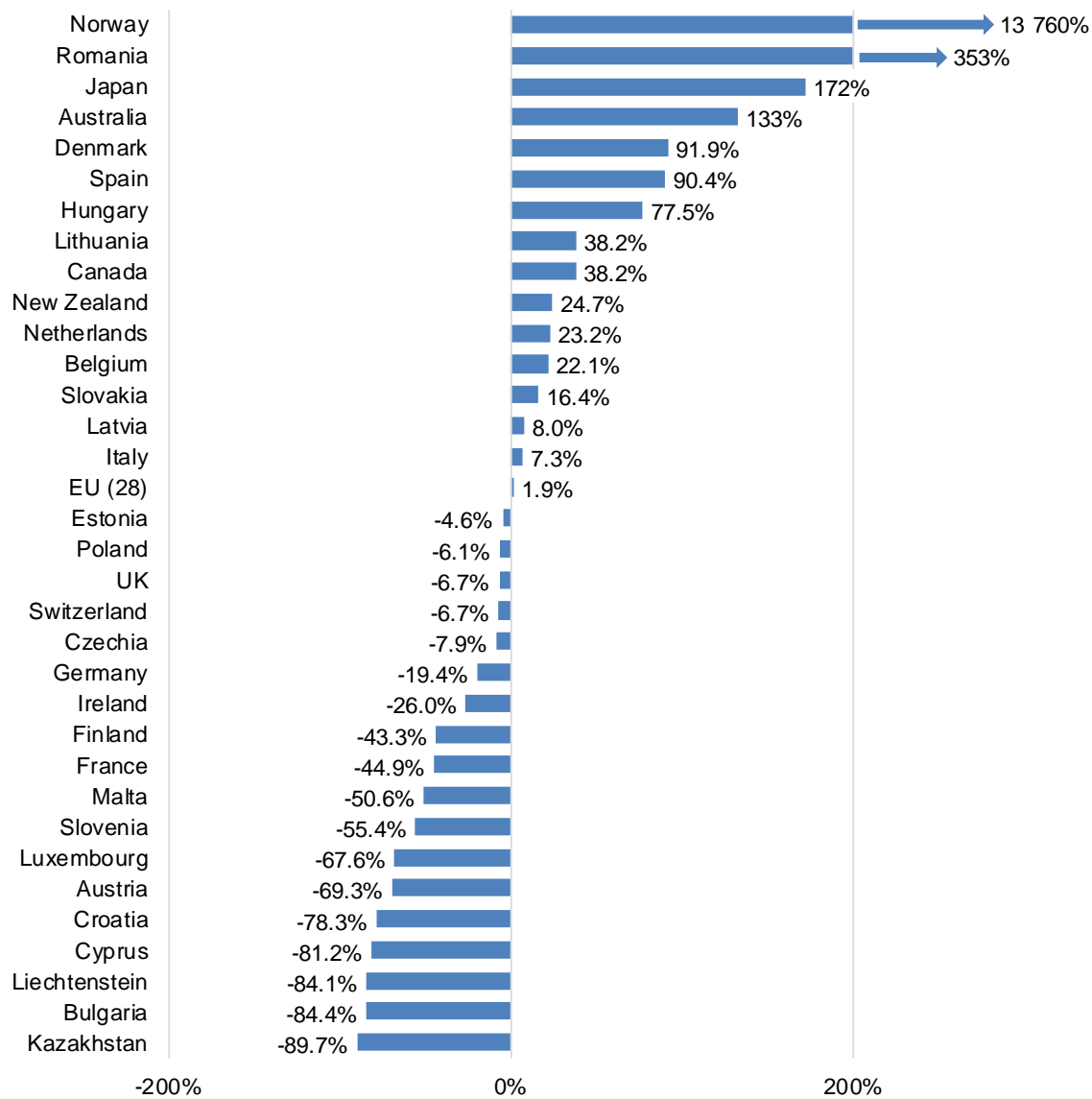
Figure A.1  
Estimates 2020 impacts of PaMs reported in BR3 as a percentage of reported 2015 emissions excluding LULUCF



**Assessment of Information Related to Impacts of Policies and Measures Reported in Technical Review Reports of 3<sup>rd</sup> Biennial Reports**

Figure A.2

**Change in total estimated impacts of PaMs reported between BR2 and BR3. Only includes Parties that reported estimated impacts in both reports**



## Annex 2

### **Additional resources in methodologies for estimating the impacts of PaMs**

Renders N, Dauwe T, Ahlgren C, et al. 2018. *Ex post evaluation and policy implementation in the building sector Eionet Report — ETC/ACM 2018/2*. European Environment Agency. Available at [https://www.eionet.europa.eu/etcs/etc-atni/products/etc-atni-reports/eionet\\_rep\\_etcacm\\_2018\\_2\\_energy\\_efficiency\\_buildings](https://www.eionet.europa.eu/etcs/etc-atni/products/etc-atni-reports/eionet_rep_etcacm_2018_2_energy_efficiency_buildings).

Rich D, Bhatia P, Finnegan J, et al. 2014. *Policy and Action Standard*. World Resources Institute. Available at <http://ghgprotocol.org/sites/default/files/standards/Policy%20and%20Action%20Standard.pdf>.

*ICAT - Initiative for Climate Action Transparency - ICAT Series of Guidance Documents*. Available at <https://climateactiontransparency.org/icat-guidance-final-public-consultation/>.

2004. *The California Evaluation Framework*. California Public Utilities Commission. Available at [https://www.cpuc.ca.gov/uploadedFiles/CPUC\\_Public\\_Website/Content/Utilities\\_and\\_Industries/Energy/Energy\\_Programs/Demand\\_Side\\_Management/EE\\_and\\_Energy\\_Savings\\_Assist/CAEvaluationFramework.pdf](https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy/Energy_Programs/Demand_Side_Management/EE_and_Energy_Savings_Assist/CAEvaluationFramework.pdf).