

Challenges and Proposed Reforms to the UNFCCC Expert Review Process for the Enhanced Transparency Framework

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Executive Summary

In the context of the Paris Agreement (PA), transparency refers to the reporting by individual countries on their climate-related actions and circumstances (e.g., greenhouse gas (GHG) inventory, policies and actions, and financial information) and the assessment of that information by qualified experts to ensure consistency with international requirements. The Enhanced Transparency Framework (ETF) of the PA—further elaborated through modalities, procedures and guidelines (MPGs)—builds on over 20 years of experience implementing reviews/assessment processes under the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol.

Yet, the PA's ETF introduces a dramatic increase in the scale of review under the UNFCCC process, as it involves several major changes:

- 1) It requires a comprehensive review of reporting by all Parties¹, developed and developing, every two years;²
- 2) It expands the amount, types, and frequency of information that must be submitted and reviewed;
- 3) It deepens the technical complexity of the information;
- 4) It adds information that will be politically sensitive (i.e., progress of a country in achieving its nationally determined contribution (NDC)) while arguably being more subjective and less standardized than accounting for compliance under the Kyoto Protocol.

Because of these changes, simply building on what has been done for the review and technical analysis processes in the past (i.e., Annex I GHG inventories, biennial reports (BRs), national communications (NCs), and biennial update reports (BURs)) is unlikely to succeed. Instead, we argue that it is necessary to “rethink and redesign” a process to support effective and efficient reviews of biennial transparency reports (BTR) for all Parties under the PA.

We have seen material improvements in the quality of information reported by Parties as a direct result of UNFCCC review and technical analyses processes. But, we have also experienced challenges, which have become more pressing in recent years with the addition of new processes such as the review of BRs and the technical analysis of BURs. These challenges will become debilitating, if not addressed, with the onset of the BTR review process, at the latest, in 2025. Simply scaling up the current review and technical analysis processes for BTRs will not be sustainable, from a human resources, cost and time perspective.

We focus in this discussion paper on the two elements in the BTR that will be most technical, time-intensive, and politically sensitive for the ETF review process—the review of the GHG inventory (including the inventory report and accompanying common reporting format tables) and the

¹ At the time of the writing of this paper, 184 Parties had ratified, accepted, approved or acceded to the Paris Agreement. This number has since increased to 185.
https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtsg_no=XXVII-7-d&chapter=27&clang=en. There are 197 Parties to the UNFCCC (196 States and one regional economic integration organization)

² To date, few developing countries have submitted their BURs and had them reviewed within the requested two-year cycle.

information necessary to track progress made in implementing and achieving an NDC. This paper presents a road map for the international community to build on the best of the current UNFCCC review and technical analysis processes and then identifies possible solutions to address the most important challenges faced by Parties, the UNFCCC secretariat, and review experts to establish a functioning ETF review process.

The good news is, we still have some time. But not much. The first BTRs are due by the latest the end of 2024, but the Subsidiary Body for Scientific and Technological Advice (SBSTA) will be discussing the details of the BTR review process earlier, with conclusions to be reached in 2020. We have an opportunity to build a global system that is sustainable, fosters participation and builds necessary capacity in all countries, while delivering timely and accurate information on international efforts to achieve the objectives of the PA.

Specifically, there are a number of challenges to structuring a sustainable and effective review process under the PA. Given the timeframe for this review process to begin (i.e., 2025 at the latest), discussions should begin now to evaluate the current review procedures under the UNFCCC, adopt elements that are both effective and can be successfully scaled up, and then to rethink those procedures that are impeding Parties, experts, and the UNFCCC secretariat.

We argue that there are four primary challenges for scaling up the current UNFCCC review processes to build a sustainable and effective PA review process:

- 1) Streamlining to enhance operational efficiencies in the review process;
- 2) Overcoming the insufficient number of qualified review experts available to the process;
- 3) Providing new and enhanced training and capacity building opportunities for both reporters and reviewers; and
- 4) Continuously developing and adapting tools and materials to assist reviewers as they struggle with a co-maturing reporting AND review process.

For example, under a scenario where all Parties submit their first BTR in 2024, we will need approximately three times the number of experts that currently supported the GHG inventory, NC/BR, BUR processes in the 2017-2018 biennium. The need for such a large increase in experts for the first year of the BTR review process necessitates urgent attention on populating the UNFCCC Roster of Experts with additional individuals trained on reporting and review. Simultaneously, it is likely many of the experts who were the original builders of the current review processes, as well as the authors of the UNFCCC and IPCC Guidelines, will move to other positions or retire. This transition will leave a large gap in institutional knowledge and bring an added challenge to the problem of finding enough experts. Further, the UNFCCC secretariat will need approximately 98 review officers (recognizing that a single review officer may be responsible for more than one review), which is nearly four times the current number of staff at the UNFCCC secretariat performing review officer assignments (approximately 25).

In sum, the experts who have been in the trenches as a member of an ERT or technical analysis team, or as a country being reviewed, will likely say that the current processes are not sustainable, particularly when scaled to the level needed under the PA. However, therein lies the opportunity. We do have experience to draw on. We know what works, and where improvements are needed. We recommend a

number of reforms to the UNFCCC expert review process to meet the scaled up and more complex needs of BTR reviews under the PA.

Recommendation 1: Design a system that delivers reports that are of a known and sufficient quality (fit for purpose) in timely manner

- Identify the key elements that technical expert review teams (TERTs) need to communicate in the review reports and stick to it.
- Allow for the fact that the focus of the review, and therefore the reports, may evolve over time due to differences in current national capacities.
- Adhere to the deadlines, whether it be the timeline for completion of a review report, or the maximum number of pages expected for a report. Deadlines are introduced as an indicator of expected level of effort; if TERTs are not meeting these deadlines, procedures should be changed.
- Ensure that review report templates are streamlined and standardized, and communicate the most pertinent findings of the review.
- Allow for different review report templates reflecting the different formats of review.

Recommendation 2: Increase and broaden the number of active and effective experts on the UNFCCC Roster of Experts who are available, financially supported, and motivated to support the review processes under the PA.

- In addition to Parties nominating experts to serve as reviewers, nominations from intergovernmental organizations, individuals, and recognized observer organizations could also be accepted through established procedures. These nominations should then be screened using objective criteria (e.g., using a multi stage process, including first a demonstration of appropriate technical qualifications; second, completing [completion?] of training and passing of exams; and third, a formal agreement to support a minimum number of reviews over a given period of time).
- New funding and a funding process are needed to support the current pool of review experts and make it possible for new experts to participate. This compensation can be provided in a manner that holds experts accountable for the entire review process—thereby providing an incentive to complete the review process in a timely manner. The availability of financial support may also increase the incentive for experts to take the necessary training and be available for the review process. While this reform may seem revolutionary, the added cost would not be prohibitive. Overall, we estimate it could be implemented for about US\$4M/year.
- We recommend that the Parties consider “in lieu of” payments that countries could make to support the review process based on the cost of supporting a defined number of experts weighted by agreed criteria (e.g., analogous to the UN assessment rate formula).
- Recognition of a person’s expertise and work can be a powerful motivator. Therefore, we recommend that a formal certification designation be established for active review experts that are in good standing, and, importantly, that the UNFCCC secretariat promote this certification.
- We recommend training be deployed *broadly* (e.g., from beyond government institutions to universities, sub-national governments, the private sector and non-governmental organizations) to attract experts and enhance their technical abilities— through formal training on the international policy context, international reporting requirements (GHG inventories; NDCs;

finance, technology and capacity building; Article 6), and methodological requirements of the 2006 IPCC Guidelines.

Recommendation 3. Enhance Capacity Building Support (for reporters and expert reviewers).

Experts on the UNFCCC Roster of Experts need to complete the necessary training and pass the required exams to be qualified to support the UNFCCC review processes. We recommend a two-stage training process, which will be particularly beneficial for many developing country experts. Stage one would focus on methodological guidance (i.e., learning the 2006 IPCC Guidelines and, if appropriate, the 2019 Refinement to those Guidelines). Stage two would focus on “review approaches”. This second stage should include simulated review workshops (i.e., how to review). Specific outreach efforts should be institutionalized to communicate the pathway to becoming more involved in the BTR review process. Dedicated follow up activities should be initiated with a view to add a pre-defined number of experts to the UNFCCC roster each year.

Recommendation 4. Develop and make available better tools and materials to facilitate the review process.

- Documents supporting the current review processes should be promoted as a resource so experts can become more familiar with the current processes and issues arising therein.
- New guidance documents (handbooks, checklists, review templates, instructions) should be developed to support the review processes under the PA.
- A single tool should be developed to transcribe information from one step of the review process to the next. The system should be searchable so reviewers and review officers can easily extract previous findings—thereby reducing review burden and facilitating the tracking of issues over time.

Recommendation 5. Identify opportunities to pilot aspects of the MPGs as soon as possible.

- There is not a lot of time to implement formal piloting activities, with the reporting formats to be completed by SBSTA only by the end of 2020, presumably the resulting reporting tools available at the earliest in 2021, and the first BTRs due at the latest by the end of 2024. Formal or informal piloting activities could be in addition to the current GHG inventory, NC/BR, and BUR processes for those countries that agree to participate. Some countries may also be interested in submitting their BTR earlier than the end of the 2024 deadline. In this case, there could be an agreement to pilot review activities on these early submissions prior to a more formal submission by the deadline.

Recommendation 6. Start dedicated discussions among current experts in GHG inventory, NC/BR, and BUR processes.

- We recommend a combined meeting of lead reviewers and technical leads of GHG inventory, NC/BR, and BUR processes be convened to begin assessing what has worked historically, what has not worked, and broadly focus on preparing for guidance on new issues facing experts under the BTR process.

Recommendation 7. Encourage Parties in a position to do so, to submit their first BTR well in advance of the 2024 deadline

- One way to alleviate the pressure on Parties, experts, and the secretariat for the first review cycle is if Parties, in a position to do so, submit their first BTR early. If reporting tools are developed by end of 2021, these could technically be submitted as early as 2022. Early submission would help stagger the demands on the review process, and would serve as a “soft launch” as Parties, experts and the secretariat apply to the new tools, templates and procedures established under the PA.

We believe that the seven broad classes of recommendations should all be explored further and evaluated. We do not claim that these are the only options, and welcome creative and forward-thinking approaches that build on our collective experience and ensure that the necessary human and financial resources are available to support the work needed.

Background

Transparency is the bedrock of the Paris Agreement (PA). In this context, transparency refers to the reporting by individual countries on their climate-related actions and circumstances (e.g., greenhouse gas (GHG) inventory, policies and actions, and financial information) and the assessment of that information by qualified experts to ensure consistency with international requirements. The result of a well-designed transparency framework is that all Parties³ build mutual trust amongst themselves and that the international community achieves a sufficient level of confidence in the GHG information reported to achieve collective action necessary to prevent dangerous levels of climate change. Parties must be confident that other countries are reciprocal in meeting their commitments (i.e., nationally determined contributions (NDCs)). And, the global community needs to be confident that the GHG information reported by Parties is of a sufficient quality to appropriately inform the global stocktake, as outlined in Article 14 of the PA.

Article 13 of the PA outlines an Enhanced Transparency Framework (ETF), which is further elaborated through modalities, procedures and guidelines (MPGs) contained in Decision 18/CMA.1. The ETF is designed to build on years of experience implementing reviews/assessment processes under the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol, including reviews of Annex I GHG inventories, Annex I national communications (NC), and biennial reports (BR), technical analysis of developing country biennial update reports (BURs), and other similar and related processes.⁴

Review processes in one form or another have been underway within the UNFCCC for over 20 years.⁵ There are likely a thousand individuals (experts, secretariat staff, Party representatives) who have been involved in one or more review and/or technical analysis processes and have identified challenges, lessons learned, and most importantly, opportunities for improvements in the existing review system.

But, the future is not a continuation of the current systems. The PA's ETF introduces a dramatic increase in the scale of review and technical analysis under the UNFCCC process, as it involves several major changes:

- 1) It requires a comprehensive review of reporting by all Parties⁶, developed and developing, every two years;⁷
- 2) It expands the amount, types and frequency of information that must be submitted and reviewed;

³ A "Party" is the representative under the UNFCCC processes. For the purposes of this paper, the term Party and country are used interchangeably.

⁴ Paris Agreement, Article 13, para. 4. In addition to the processes listed in para. 4 there are additional review processes (e.g., the review of forest reference emission level (FREL) and/or forest reference levels (FRL) that contribute to the international body of experience).

⁵ Review processes of NCs have taken place since 1998, Annex I GHG inventories since 2000, BRs since 2014 and BURs since 2015. In addition, review teams also review submissions of FREL/FRL.

⁶ At the time of the writing of this paper, 184 Parties had ratified, accepted, approved or acceded to the Paris Agreement. This number has since increased to 185.
https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-d&chapter=27&clang=en. There are 197 Parties to the UNFCCC (196 States and one regional economic integration organization)

⁷ To date, few developing countries have submitted their BURs and had them technically analyzed within the expected two-year cycle.

- 3) It deepens the technical complexity of the information;
- 4) It adds information that will be politically sensitive (i.e., progress of a country in achieving its NDC) while arguably being more subjective and less standardized than accounting for compliance under the Kyoto Protocol.

Because of these changes, simply building on what has been done for the review and technical analysis processes in the past (i.e., Annex I GHG inventories, BRs, NCs, and BURs) is unlikely to succeed. Instead, we argue that it is necessary to “rethink and redesign” a process to support effective and efficient reviews of biennial transparency reports (BTR) for all Parties under the PA.

We have seen material improvements in the quality of information reported by Parties as a direct result of UNFCCC review and technical analyses processes. These improvements stem not only from the specific findings and recommendations directed towards countries on how to improve the information reported, but also from the mere fact that involvement by experts in the review and technical analysis processes themselves is a valuable learning tool that they can then take home to their country to improve their own national reporting processes. But, we have also experienced challenges, which have become more pressing in recent years with the addition of new processes such as the review of BRs and the technical analysis of BURs. These challenges will become debilitating, if not addressed, with the onset of the BTR review process, at the latest, in 2025.

Simply scaling up the current review and technical analysis processes for BTRs will not be sustainable, from a human resources, cost and time perspective.

This discussion paper presents a road map for the international community to build on the best of the current UNFCCC review and technical analysis processes and then identifies possible solutions to address the most important challenges faced by Parties, the UNFCCC secretariat, and review experts to establish a functioning ETF review process.

The good news is, we still have some time. But not much. The first BTRs are due by the latest the end of 2024, but the Subsidiary Body for Scientific and Technological Advice (SBSTA) will be discussing the details of the BTR review process earlier, with conclusions to be reached in 2020. And, some countries may not wait until 2024 to submit their first BTR, wanting to make a statement about their commitment to the process. We hope the recommendations contained in this paper can provide some insight to the SBSTA and the broader global community, as planning for reforms needs to begin now.

We have a real opportunity to build a global system that is sustainable, fosters participation and builds necessary capacity in all countries, while delivering timely and accurate information on international efforts to achieve the objectives of the PA. We must invest the necessary time now to explore options and act well before the first BTRs are submitted.

Objective of the Technical Expert Review under the ETF

The BTR review process will only be successful if it delivers “a clear understanding of climate change action in the light of the objective of the Convention....including clarity and tracking of progress towards

achieving Parties' individual NDCs..."⁸ To achieve this objective, the process must be designed to **deliver reports that are of a known and sufficient quality (fit for purpose)** to build the mutual trust and confidence among Parties that a Party's reporting is following the internationally agreed rules. But, the quality of the reports cannot be the only objective; **the review process itself also must be cost effective and sustainable** (in terms of timeliness of outputs and minimization of burden on Parties, experts and the UNFCCC secretariat) to deliver reliable quality assurance in a timely manner. In other words, each Party can, with confidence, know whether other Parties are on track to meet their individual contributions, and when this information is delivered as an input to the global stocktake under Article 14, the global community can better understand where it is on the collective pathway to meet the goals inscribed in Article 2 of the PA.

The current review and technical analysis processes under the UNFCCC and Kyoto Protocol have matured over time, and so too will the BTR process. Even more so, **achieving a sustainable review process will require a continuous balancing among quality, cost effectiveness, timeliness and burden minimization**. We should not forget that a guiding principle of the ETF is to facilitate improved reporting and transparency by all Parties *over time, with flexibility to developing country Parties that need it*. The purpose of the recommendations outlined in this discussion paper is to establish a system that recognizes countries are at different starting points but builds a pathway for all to evolve and the overall reporting system to mature to a sufficient level to establish trust in the information reported.

Reporting and Review under the Paris Agreement – the Basics

Reporting

Just as you can only manage what you measure, you can only review what is reported. Therefore, some context is needed regarding the basic reporting requirements under the PA, in particular related to the information that is subject to review, taking into account the "flexibility provisions" for developing country Parties: the national GHG inventory report, the information necessary to track progress made in implementing and achieving an NDC, support provided (for developed countries), and assistance for those developing countries that need it in identifying capacity building needs.⁹ Understanding these requirements and how they differ from what Parties currently report, helps clarify some of the new challenges expected under the BTR review process.

By 31 December 2024, all Parties are required to submit their first BTR and then to submit every two years, thereafter, with some flexibility provided for small island developing states (SIDS) and least developed countries (LDCs). The BTR will then be subjected to a two-stage process:

- 1) a technical expert review team (TERT) will assess the information reported and draft a technical review report containing its findings and recommendations related to the consistency of the BTR with the MPGs; and

⁸ Paris Agreement, Article 13, paragraph 5

⁹ MPGs, para. 146. There are additional elements that Parties should/may include in their BTR (e.g., information on supported needed and received, information on climate impacts and adaptation, etc.) but which are not subject to review.

- 2) the TERT's technical review report, along with the original BTR and any additional information provided by the Party, will be subject to the PA's facilitative, multilateral consideration of progress.¹⁰

We focus in this discussion paper on the two elements in the BTR that will be most technical, time-intensive, and politically sensitive for the ETF review process—the review of the GHG inventory (including the inventory report and accompanying common reporting format tables) and the information necessary to track progress made in implementing and achieving an NDC.

Regarding reporting of GHG inventory information (Article 13, para. 7a of the PA), the ETF MPGs are similar to the existing requirements for Annex I countries but are less-detailed in some areas. For example, reporting requirements related to institutional arrangements are more general than what is contained in decisions 24/CP.19 (reporting under the Convention) and 19/CMP.1, in conjunction with 4/CMP.11 (reporting under the Kyoto Protocol). Although not directly related to the GHG inventory, Annex I Parties currently report information in their annual submission on the issuance, holding, transfer, acquisition, cancellation and retirement of assigned amount units in their national registry. As the requirements related to reporting under Article 6 (i.e., market and non-market mechanisms) remain to be finalized, it is not clear if these will be more or less detailed than the current accounting processes under the Kyoto Protocol. **The fact that the MPGs are less detailed may introduce a challenge for reviewers—they will need to come to an opinion on whether the Party is maintaining the quality of reporting while being given less specific guidance for making these technical judgments.**¹¹ In particular, as many problems in reporting result from issues in the underlying national inventory arrangements, if problems in reporting do surface, the TERT may find it more difficult to identify the source of the reporting problem given the less detailed reporting requirements on national inventory arrangements.

While for developing countries, there are new reporting requirements under the PA ETF that build on what was encouraged under decisions 17/CP.8 (Guidelines for non-Annex I NC) and 2/CP.17 (BUR) (e.g., reporting on institutional arrangements, quality assurance/ quality control (QA/QC), key category analyses, and ensuring time series consistency). The challenges for developing countries to report on this new information should not be underestimated; achieving a complete and time consistent inventory back to 1990 will require substantively greater development of national measurement, reporting, and verification (MRV) systems. Given that most developing country Parties have not fully, or even partially, institutionalized inventory development, nor have they submitted their first BUR, effectively most or all these reporting requirements are new. In the context of the review process, this situation means that the work of the TERT may be as much related to facilitative capacity building as conducting the review of the information submitted. For several cycles, many Parties will likely need help understanding and institutionalizing the reporting requirements. **Because countries will report with vastly different institutional capacities along with the fact that the guidelines for review of national inventory arrangements in particular are less detailed, a greater burden will be placed on TERTs to make**

¹⁰ This stage will be similar to the current multilateral processes for the BR and the BUR under the UNFCCC and involves discussions between a Party and the international community regarding the Party's progress with respect to efforts under Article 9 and implementation and achievement of its NDC.

¹¹ Making such a determination is one of the guiding principles of the MPGs (Annex, paragraph 3(a)).

judgements regarding how to review a Party's GHG inventory, and then to appropriately reflect their findings in a technical review report.

The “newer” reporting requirements under the ETF will further require TERTs to develop new procedures to ensure reviewers are treating them consistently across Parties. For instance, the MPGs include a new materiality (i.e., significance) threshold.¹² If emissions from a category are below the threshold, the Party does not have to report these emissions. This provision is not as new for Annex I countries, as it was introduced in the revised UNFCCC Annex I Inventory reporting guidelines, first used by Parties in their 2015 inventory submissions. But, three years later, the review process is still trying to ensure that expert review teams (ERTs)¹³ under the current review processes are treating this provision consistently. A more complicated learning process will likely be needed with the flexibility provisions for developing countries, SIDS, and LDCs in the MPGs.¹⁴ **It will be important—as training programs, tools and materials are developed—that the procedures used in implementing these new provisions be thoughtfully drafted and that reporters and reviewers be trained and guided in a mutually consistent manner.**

Regarding information necessary to track progress made in implementing/achieving NDCs (Article 13, para. 7b of the PA), Parties are required to report information on their approach to accounting for their NDC in a manner that promotes environmental integrity, transparency, accuracy, completeness, consistency and comparability (TACCC), and ensure the avoidance of double counting.¹⁵ They are also required to report the indicator(s) they select for tracking their progress in implementing and achieving their NDC. These indicators may be qualitative or quantitative and will necessarily vary depending on the type of NDC. The Party is required to provide definitions of the indicators it has selected and do so without standardized definitions or agreed international guidelines (like the IPCC Guidelines).

This situation introduces troubling complexities to the review process, as each TERT will be tasked with interpreting and assessing each Party's indicators and NDC progress. Specifically, the review process may struggle to maintain consistency across different Parties' BTRs and different TERTs. And it should be noted, that achieving consistency in review processes has historically already been a significant challenge under a far more defined and far less complex reporting regime. Existing processes for the review of GHG inventories, for example, have benefited from detailed and explicit technical guidelines (e.g., the 2006 IPCC Guidelines). Yet, there is no equally detailed rulebook for how to report or review the myriad of possible combinations of NDCs and indicators that countries have used or may use in the future. **Given the absence of structured guidelines, and without appropriate training on how to review information on tracking progress, TERTs will struggle to make unbiased judgements, and to do so in a manner that is still facilitative, non-punitive, respectful of national sovereignty and minimizing burden on Parties.**

¹² Para. 32 of the MPGs

¹³ “ERT” is the term for the team of experts in the current GHG inventory review process, which will be replaced by the “TERT” under the PA.

¹⁴ The PA ETF MPGs give developing countries, SIDS, and LDCs that need it, in light of their capacities, flexibility to implement specific MPG provisions in a manner that reduces burden.

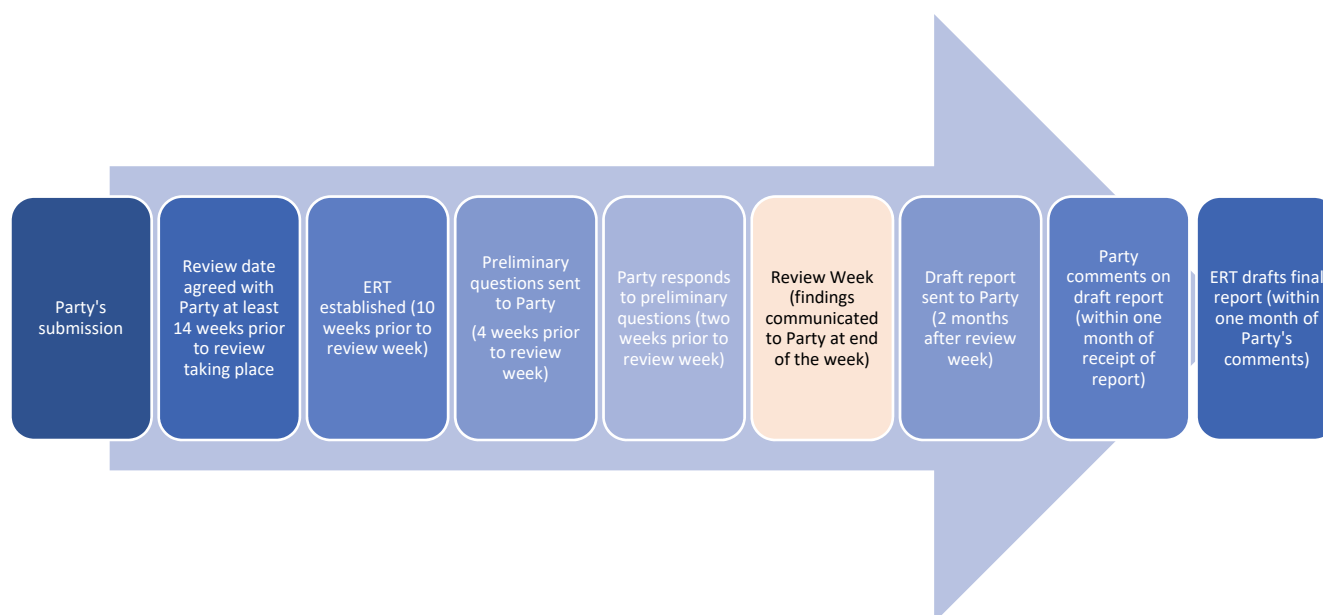
¹⁵ Article 4, paragraph 13

The Review Process

Timelines

The MPGs broadly define the timeline and procedures of the review process (Figure 1), noting that all efforts are to be made to publish a review report as early as possible and no later than 12 months from the start of the technical expert review process.¹⁶

Figure 1. Outline of Review Process for BTR



Operational questions about how this 12-month review process is organized on a biennial basis will greatly affect the sustainability of the system. Under the PA, the review system that is developed should be capable of reviewing approximately 184 Party submissions, every two years. What will that process look like? What is the format of the technical expert review? How many experts will be required on each TERT? We address each of these questions, in turn.

Format of the review

The MPGs provide basic rules regarding the available formats in which reviews can take place. Like current formats, reviews may take place in-country, in a centralized format (all reviewers convene in a single location, typically Bonn), or via a desk review (see Box 1). Annex I Parties will continue to submit a national inventory report annually under the Convention. So, in years in which an Annex I Party's inventory is not submitted as part of a BTR, its inventory report will be subject to a "simplified review". The simplified review is to be conducted by the secretariat and is not envisioned to involve an independent TERT.

¹⁶ MPGs Para. 162

The rules for the allowable formats of reviews, and their frequency, are important. The type of review (i.e., in-country, centralized, or desk) will impact the number of experts needed and costs. It may also impact the rigor and assurance provided by the review process and detail provided in the resulting review report (e.g., desk reviewers often struggle to maintain dedication as well as access information from Parties).

Composition of the ERT

Currently, for an Annex I GHG inventory review there is a different expert responsible for each sector (i.e., five sectors—energy; industrial processes and product use; agriculture; land use, land use change and forestry (LULUCF); and waste) plus one generalist. The size of the ERT depends on the format of the review (i.e., in-country review, centralized review, or a desk review) and how many inventories are being reviewed. Typically, there are 6 experts for an in-country review, 12 for a desk review (two Parties typically reviewed) and 15-17 experts for a centralized review (3 Parties typically reviewed). While for an Annex-I BR, approximately 11 experts participate in a centralized review for about four Parties. And for a BUR, only one expert technically analyses the entire inventory report of the non-Annex I Party, as part of a team of 8 experts to cover all report sections (e.g., policies and measures, vulnerability and adaptation, etc.) for 3 countries in a centralized review format.

What will the composition of an TERT for a BTR be? Within the structure defined in the MPGs, there is some flexibility.¹⁷ There should be one expert for each *significant* sector, plus expertise to review mitigation and support, cooperative approaches, internationally transferred mitigation options under Article 6, and LULUCF, as relevant. Clearly, new expertise will also be needed on each TERT to address the complex issue of reviewing NDC progress.

It is necessary, given the enhanced demands on the review process, that the composition of TERTs be reconsidered relative to past UNFCCC processes. Although there could be numerous possible configurations for TERTs that review BTRs, two options are:

Box 1. Review Formats under the PA

In-country reviews: Review takes place in the host country, are required for the review of the first BTR, must happen twice in a 10-year period, and may occur if recommended by a TERT or upon request of the Party. (Developing countries have the flexibility to instead choose to undergo a centralized instead of an in-country review, but are encouraged to undergo an in-country review.)

Desk reviews: Each expert on the TERT reviews the BTR without traveling (i.e., in their permanent worksite). A desk review for a given country should not happen more than once every five years or be used for the review of a BTR following the communication or update of an NDC (including the first submission in 2024), nor should it be used to review the BTR that contains the Party's communication on achievement of its NDC.

Centralized reviews: Take place in a single, centralized location. Given the rules for in-country reviews and desk reviews above, all other individual reviews are accomplished through a centralized review.

Simplified reviews: Are conducted by the secretariat on the GHG inventory report submitted in the year in which a BTR is not due. The review consists of a series of checks on the submission to ensure completeness and consistency with the MPGs.

¹⁷ MPGs, Para. 176

1. **Apply the historically “traditional” ERT process to conduct the full scope of review activities.** In this case, if we assume one expert for each *significant* sector, a TERT might reasonably be estimated to require a minimum of five to nine experts. Five experts might be possible for the review of some of the LDCs or SIDS, where only the energy, agriculture and LULUCF sectors are significant, and assuming single experts have responsibility for multiple thematic areas (e.g., two experts jointly assess mitigation and support, cooperative approaches, and internationally transferred mitigation options under Article 6). Nine experts are likely needed on a TERT for more industrialized developing countries and most developed countries. This model directly builds on the current approach of establishing an ERT, drawn from experts nominated to the UNFCCC Roster of Experts (ROE).
2. **Establish a new standing body of review experts** to support TERTs, whose job it is to carry out the preliminary review of each country, using various statistical tools and their own expertise to reach preliminary findings on each BTR submission’s consistency with the MPGs. Following this first stage, the “traditional” TERT would then have the less burdensome task of taking the material from the standing body process and further investigate, revise, and elaborate the preliminary findings, including working with the Party to finalize the formal review report. To maintain consistency with the MPGs¹⁸, the TERT itself would still be responsible for all procedures outlined in the MPGs related to communications with the Party before and during the review week, and for the finalization of the technical review report.

Such an approach using a separate standing body of experts could improve efficiency and facilitate consistency across TERTs and Parties, as well as allow for a smaller number of experts on each TERT. For example, 3 to 5 experts reviewing one country (1 to 2 GHG inventory experts, plus the additional thematic experts). Importantly, with well-defined findings available to a TERT *prior* to the review week, more time would be available to the TERT *during* the review week to finalize and “sign off” on the review report and reduce the time needed to publish a final report. The benefits of this approach for a centralized review may be even greater. A TERT that is not required to do all the underlying analysis, but rather evaluate preliminary findings, could review more countries in a centralized setting.

One also can consider how the options above could apply for a group of countries that are not explicitly referenced in the MPGs—countries with small economies. For example, under the current BR review process, countries with emissions less than 50 million metric tons CO₂ equivalent (excluding LULUCF) are reviewed in a centralized format. Many of these small economies may be LDCs or SIDS, and thereby able to take advantages of the flexibilities offered (e.g., to have a centralized review in lieu of an in-country review), but not all. Under the ETF, one option could be to have preliminary findings prepared in a centralized format by the standing body described above and then to send for an in-country visit a smaller TERT (e.g., only one review officer and two lead reviewers, one for GHG inventory and one for tracking the progress) to streamline the review process.

¹⁸ MPGs, Para. 162

Exploring the Challenges to Developing a Sustainable and Effective Review Process

The overview of the reporting and review requirements above has identified a number of the challenges to structuring a sustainable and effective review process under the PA. **Given the timeframe for this review process to begin (i.e., 2025 at the latest), discussions should begin now to evaluate the current review procedures under the UNFCCC, adopt elements that are both effective and can be successfully scaled up, and then to rethink those procedures that are impeding Parties, experts, and the UNFCCC secretariat.**

We argue that there are four primary challenges for scaling up the current UNFCCC review processes to build a sustainable and effective PA review process:

- 1) Streamlining to enhance operational efficiencies in the review process;
- 2) Overcoming the insufficient number of qualified review experts available to the process;
- 3) Providing new and enhanced training and capacity building opportunities for both reporters and reviewers; and
- 4) Continuously developing and adapting tools and materials to assist reviewers as they struggle with a co-maturing reporting AND review process.

We next elaborate on each of these four challenges below.

Streamlining operational efficiencies in the review process

The review process must be designed with the objectives in mind—to review information reported by Parties and deliver findings to the international community in the form of a report that is of an appropriate quality, in a timely and cost-effective manner. The following operational challenges in the current review process have been identified:

The timely publication of reports

Timely publication of review reports has been a challenge under the current review processes, which follow a similar schedule as illustrated in Figure 1. According to the UNFCCC secretariat, factors contributing to delays in completion of reviews historically include: distractions due to the other work obligations of ERT members, the growing complexity of the review process (in particular under the Kyoto Protocol), the effort and delays involved in conducting follow up discussions with Parties, and the severe shortage of review experts.¹⁹ Delays can also be caused by competing demands on secretariat staff (i.e., review officers) that provide essential support to ERTs, in particular during periods of the negotiations when it is difficult, if not impossible, for secretariat staff involved in negotiations to support the review process.

Delayed publication of review reports impacts everyone:

¹⁹ FCCC/SBSTA/2012/INF.10

- *Parties* are receiving the findings on their previous submission late, impacting their ability to address the issues in their next submission.
- *ERTs* are asked to spend additional time over an extended period to complete the review process, which necessitates that they remember what happened months ago in order to finalize a report, possibly demotivating them to participate in a future review process.
- And the *UNFCCC secretariat* suffers from a cascading effect, as the backlog of overdue reports and reviews grows.

It is important to recognize that the above situation is the current condition, as it is already the case under the current reporting and review processes that at times two successive submissions are being reviewed in parallel.

In sum, timely publication of the review reports provides transparent information to the Parties, while minimizing the burden on Parties, experts, and the secretariat. **Parties, experts, and the secretariat must each be adequately supported in this process with a review system design and resources that enable them to adhere to the timelines in the MPGs. And to be clear, the current review process is neither adequately supportive for implementation of the MPGs nor for the current review processes.**

Delays can also be promoted by the required contents of each published review report. In recent years, review reports have been published in a more streamlined format, focusing on essential and new information. **A more streamlined outline for the review report that provides the necessary information to the international community, while highlighting, as appropriate, capacity building needs of the developing country, can improve the efficiency, effectiveness and timeliness of the review process.** When developing the BTR review report outline²⁰ negotiators should consider the following points:

- First, identify the most important information to convey in the review report, recognizing the goal of the ETF under the PA;
- The review report should primarily convey important information so that the international community understands the TACCC of the GHG inventory, information to track progress of a Party's achievement of its NDC, and support provided by developed countries;
- The published review report does not have to document everything that the TERT does or discovers (this can be done through archived tools and templates), rather it should convey specific recommendations and encouragements to the Party to help improve TACCC of information, highlight capacity building needs of developing countries and highlight this information to the global community;
- TERTs should be given discretion to decide not to recommend the Party take action for a particular reporting issue if it is deemed technically immaterial. Experts often feel it is their job to critique and document all types of problems; however small the problems may be. Sometimes a Party's reporting is sufficient and ERTs should be encouraged to reach a finding of acceptable transparency where appropriate;
- Review reports should convey only the most important findings. Long reports take longer to finalize at every stage of the process. (Again, additional and less important details can be

²⁰ MPGs, para. 12(b)

documented and conveyed to Parties through tools and templates used in the review process);

- Use of check boxes, standardized tables, and standard template language for common situations is helpful, drawing on other review processes (e.g., European Union (EU)-internal review under the Effort Sharing Decision (EU ESD));
- Avoid repeating information in the report that can be found in the Party's BTR; and
- Although there is not an obvious difference in scope between in-country, desk, and centralized reviews in the ETF, considering the different nature of the formats, develop separate review report templates that reflect these actual differences in formats.

Particular challenges introduced by each review format

As noted above, each review format (in-country, desk, and centralized) have different demands in terms of the number of experts needed and the number of Parties that can be reviewed by a single TERT. Experts also generally express preferences to participate in only certain types of reviews (e.g., in an in-country but not in a desk review). Some of the current challenges related to constructing ERTs for various review formats are described below.

While experts tend to prefer to participate in an in-country review (there is only one country to review, and there is an opportunity to closely work with the country one-on-one)²¹, this format involves higher costs and requires a larger number of experts, as there is one expert per sector per country, each of whom must travel to the review location. **Requiring an in-country review for every country for the first BTR will be very intensive and will require a relatively larger number of experts in the first review cycle (latest 2025), which will involve major cost and training implications.** Each in-country review will require an independent team of experts. Our most direct experience to date with such an intense period of in-country reviews was under the first commitment period of the Kyoto Protocol, where all Annex I countries were subject to an in-country review to facilitate the calculation of their assigned amount. However, there were only 37 Annex I Parties and they had relatively mature reporting systems. In contrast, the PA is designed to review all Parties, although it is reasonable to expect some Parties will utilize the flexibility provisions in the MPGs such that their review may not take place until 2026 or later, or in a centralized format.

It is important to note, though, that the in-country review format will result in more capacity building by engaging a larger group of reporters and reviewers in a "hands-on" manner. While this benefit exists in all review formats, as TERT members learn from their counterparts, the in-country setting has the additional benefit of transferring knowledge and experiences to a larger number of experts in the host country.

Desk reviews offer a less costly review approach (there is no need to support travel arrangements as the expert stays at her/his current location). But, **due to the dispersed nature of the team, a desk review generally requires more experienced experts** who understand the procedural and technical aspects of the review work as well as highly experienced lead reviewers (LRs) and secretariat staff to monitor progress and hold reviewers accountable for completing their work on time and with sufficient quality. Desk reviews were more prevalent in the early years of GHG inventory reviews under the UNFCCC but

²¹ Which could, in some cases, be influenced by the differential funding available to experts in each format of review.

gave way to a reliance on centralized and in-country reviews because the former were found to be difficult to achieve successful outcomes. With the adoption of the new UNFCCC Annex I inventory review guidelines, desk reviews have seen somewhat of a resurgence. Yet, they are still only used to review approximately four Party reports per year.

Past review experience has also shown that it is difficult to secure enough experts for a desk review.

Experts appear to not want to stay home and do a review, which requires that they defer their regular duties and workload. **There may also be a financial disincentive to participating in a desk review**, as experts do not receive a daily subsistence allowance for a week of time. Given the choice, many experts opt to volunteer to support only an in-country or a centralized review. The LRs of the Annex I GHG inventory review process recognized this challenge. LRs encouraged Parties to facilitate the participation of experts they nominate to take part in desk reviews, noting that unless Parties better support experts it will continue to be difficult for the UNFCCC secretariat to utilize the lower-cost desk review format.²² Some of the challenges of a desk review could be mitigated by a better approach to financially supporting reviewers for their work. These challenges could also be operationally addressed by streamlining the scope of the review and contents of the review report.

Centralized reviews are undertaken in cases where an in-country review is not required or a desk review is not appropriate. Historically, a large majority of GHG inventories, all BRs (when not submitted in conjunction with a NC), and all BURs have been subject to a centralized review/technical analysis format. **The primary challenge considered over the years related to centralized reviews is choosing the optimal number of countries for a centralized ERT to review.** The answer to this question is partially driven by the desired rigor of the review process, which has historically varied over time. In 2001, for Annex I inventory reviews under the UNFCCC, there were seven Parties reviewed by a centralized ERT with 11 experts. For several years, a typical centralized review under the Kyoto Protocol included 4 to 5 Parties, with each expert reviewing two Parties. Now, there are typically three countries in each Annex I GHG inventory centralized review, with a single expert responsible for the review of 1 to 2 countries and an ERT comprised of around 15 experts. Typically, for BRs and BURs, a single centralized team covers 3 to 4 Parties with each expert responsible for one, or at most, two Parties.

While experience with the current review processes, in terms of formats and number of experts needed, should inform the design of the PA review process, there are some critical new considerations. We should not blindly assume we can only review two countries with a desk review or 3 to 4 with a centralized ERT—the current practice under the UNFCCC—as we will likely miss opportunities to improve the review process in ways that may be essential for its success for the PA.

For example, some potential enhancements have been demonstrated in the EU-ESD review process, which uses a larger and more intensive centralized type of format (i.e., 29 countries are reviewed over one week by two expert teams working in parallel in one location) that uses an in-country review as an additional step based on the results of the centralized review. **Designing a review process that evaluates and reports on only the new information needed to evaluate reporting quality—along with the availability of strong information technology tools, clear guidance, and streamlined templates—could allow for a larger number of countries to be reviewed in a centralized review format.**

²² FCCC/SBSTA/2017/INF.8

Overcoming the insufficient number of qualified review experts

We discussed above how the operational design of the review process impacts the number of experts needed and its cost. Perhaps the most important challenge affecting the current review processes, which will undoubtedly affect the implementation of the PA, is ensuring that an adequate number of qualified experts are available and sufficiently supported to carry out review activities.

The UNFCCC ROE²³ lists individuals nominated by their respective Party governments to support various review processes under the UNFCCC and Kyoto Protocol, including the GHG inventory, BR, NC, and BUR. The UNFCCC secretariat invites Parties to review their nominations, add new ones, and remove ones that are no longer active.

Having enough experts to establish review teams has been a perennial challenge of the UNFCCC secretariat. The secretariat communicates to the Parties through SBSTA on this issue in the *Annual report on the technical review of greenhouse gas inventories from Parties included in Annex I to the Convention*. Going back at least to 2006, every year the secretariat expresses one or more of following points (see Annex I for a more detailed cataloging):

- the need for Parties to nominate additional experts to the ROE;
- the need to ensure that experts on the ROE are available and financially supported; and
- the need to enhance the gender or geographical representation on the ROE.

Despite this history of repeated calls, the problem of insufficient experts to support the review process has continued with little improvement.

As of 20 February 2019, there are a total of 1,939 individuals on the ROE, representing 168 Parties. **However, this number does not provide an accurate picture of how many experts are available to support the review processes.** For example, many Parties nominate experts that never actually participate in the review processes. For NC/BR and GHG inventory reviews during the past three years, 73 Parties have had no experts participate on a review team. Another 14 Parties have had only one expert participate. Most experts have come from a small number of countries, who have been most supportive: Brazil (38), China (31), Japan (30), the United Kingdom (23), Romania (20), and Belgium (20).

Many factors have been identified to explain why Parties and experts on the ROE do not participate in or support the review process, including:

- a) **Even though an expert is listed on the ROE, it does not mean they have passed the required exams to be certified as a qualified reviewer.** For example, as of 31 October 2017, the UNFCCC ROE contained 1,147 GHG inventory experts—618 from non-Annex I Parties and 529 from Annex I Parties.²⁴ Among those experts, only 45% (519) had passed all mandatory examinations required to serve as a reviewer for Annex I Parties and under Article 8 of the Kyoto Protocol.
- b) **Of these 45% of ROE experts, many inform the UNFCCC secretariat that they cannot participate in reviews when invited due to their existing workload or lack of financial**

²³ <https://www4.unfccc.int/sites/roestaging/Pages/Home.aspx>

²⁴ FCCC/SBSTA/2018/INF.3 para 27

resources.²⁵ Currently, the transport and per-diem expenses of developing country review experts are covered by the UNFCCC secretariat. However, Annex I review experts must provide their own funding, which when provided is typically done so by their government. This funding model is currently maintained under the PA. Simply put, this model for expert participation has demonstrated itself over many years to be insufficient. As documented above, it has not generated enough experts to properly support the existing review process. For example, there are many well-qualified experts from Annex I countries who no longer participate in the review process simply because they no longer work for their government. Most of these experts decline participation in reviews because there is no mechanism for their costs to be recovered. And, for both developing and developed country experts, the cost to themselves or their institution for the time spent on the review process is not compensated. Therefore, many experts “disappear” after the review week, creating an additional burden for the rest of the ERT and UNFCCC secretariat, impacting quality, and often delaying publication of the final review report.

- c) **The intense reliance of the review process on a small core group of experts has led to a serious problem of reviewer fatigue.**²⁶ Committed experts are tired; they are involved in too many review processes over too many years (e.g., some are involved in two or more reviews in a year, either within a process, like an Annex I GHG inventory review, or between processes, such as an Annex I GHG inventory review and a BR review or BUR technical analysis). The review process for a single cycle can take longer than a year. Some experts, understandably get frustrated when fellow ERT members “disappear” after the review week, placing extra work on them to complete the assigned tasks.

The exact reasoning for each expert’s rejection of an invitation to participate may vary. But collectively, the upshot is clear. The situation results in a lack of availability of review experts, which is materially affecting the ability of the UNFCCC secretariat to properly form ERTs to service the current reporting processes. For example, the secretariat invited 220 experts to GHG inventory reviews in 2018. From that list, 67 (30%) declined; in 2017, 151 experts were invited and 42 (28%) declined; and in 2016, 289 were invited and 72 declined (25%). **On average, approximately 28% of the experts invited to participate in the review process for GHG inventories decline on an annual basis; this must be factored into any discussion identifying experts needed to support reviews under the PA.**

For further secretariat observations and LR recommendations on the need to populate the ROE, please refer to Annex I.

²⁵ FCCC/SBSTA/2018/INF.3 para.16

²⁶ This problem has not been explicitly identified by the UNFCCC secretariat through a report to the SBSTA, but it is something that is commonly heard “in the corridors” of a review week.

How many experts are being called to support the current process and how many are needed under the PA?

Table 1 presents statistics from recent review processes. The last three years are considered the most representative.²⁷ If we consider the demands over the biennium of 2017-2018 (the review process under the PA will also take place over a two year cycle), we see that 100 reviews were conducted for GHG inventories, BRs/NCs, and/or BURs, requiring 446 experts and taking place through 59 review weeks.

For comparison, Table 2 presents forecasts for the number of experts needed to support implementation of the PA. These forecasts are presented separately for the initial BTR submissions received in 2024 and for reviews of submissions received in 2026 and thereafter. The actual number of experts needed to support the PA will be dependent on:

- **How many submissions are received:** For our forecast, we assume that all Parties to the PA submit the BTR in a timely manner. While this may be an optimistic assumption given the current status of submission of BURs, for us to design the review process with the assumption that Parties will fail to meet their PA obligations would seem even more troubling. However, we do and should recognize that SIDS/LDCs have formal “flexibility” in terms of timing of their submission.
- **Format of the review.** The values in Table 2 follow the rules for reviews in Box 1. Although the review of the first BTR should be an in-country (ICR), the estimates in Table 2 assume that 25% of developing country Parties will request to have a centralized review (CR) (e.g., because they are SIDS or LDCs, or because they otherwise decide or prefer not to host an in-country review), but zero desk reviews (DRs). It is also assumed that in a centralized review, every expert reviews two Parties. So, if there are 22 submissions that are subject to a centralized review, there is only a need for 11 review weeks’ worth of centralized reviews because each will cover two submissions. Each review week would require one full TERT.

Table 1. Statistics from Latest Reviews/ Analyses (BURs estimated as official reports to SBSTA not produced)

	2018	2017	2016
	2018	2017	2016
GHGI			
Parties reviewed	23	22	44
# of Experts	132	119	217
# of reviews, by format	15	11	21
# of ICR	10	6	9
# of CR	3	3	10
# of DR	2	2	2
NC/BR			
Parties reviewed	32	0	43
# of Experts	134	0	112
# of reviews, by format	24	0	11
# of ICR	22	0	0
# of CR	2	0	11
# of DR	NA	NA	NA
BUR (Estimated)			
Parties technically analyzed	11	12	20
# of Experts	31	30	59
# of analyses, by format	4	5	9
# of in-country	NA	NA	NA
# of centralized	4	5	9
# of desk	NA	NA	NA
Total - GHGI, NC/BR and BUR			
Parties reviewed/ analyzed	66	34	107
# of Experts	297	149	388
# of reviews/analyses by format	43	16	41
# of ICR	32	6	9
# of CR	9	8	30
# of DR	2	2	2

²⁷ 2015 was a unique year for the GHG inventory review process with only 4 countries subject to a review, there were no BR reviews in that year and the BUR process was just getting underway.

- **How many experts are on an TERT?** For Table 2 and in keeping with current practice, we assume that to review one Party will require 5 to 9 experts, depending on whether all sectors in a country's GHG Inventory are significant.²⁸ We discuss below in the recommendations section new approaches for staffing TERTs that reduce the number of needed experts (e.g., using a standing expert advisory group to generate preliminary findings).
- **A reviewer availability multiplier.** As noted above, experts decline invitations to reviews for several reasons. On average, 28% of reviewers declined an invitation during the past three years. Therefore, this multiplier (1.28) is applied to the number of review experts needed to better reflect the number of experts needed to support the PA.

Under a scenario where all Parties submit their first BTR in 2024, we need approximately three times the number of experts that currently supported the GHG inventory, NC/BR, and BUR processes in the 2017-2018 biennium. The need for such a large increase in experts for the first year of the BTR review process necessitates urgent attention on populating the ROE with additional individuals trained on reporting and review under the PA. Even if we assumed that only half of the Parties to the PA successfully submit their BTR (a depressing indicator for the future of the PA), the number of experts needed would still be significantly more than is currently available and the demand would increase in only a few years as all Parties make their first submission. Building the review system in a manner that is significantly short of assuming broad compliance is placing the international community behind from the start and evokes a design for failure.

With the review of the BTRs submitted in 2026 there will be a slightly lower demand for reviewers, owing to the fewer in-country reviews required and use of more centralized and desk reviews (in-country reviews require a comparatively larger number of experts per Party). However, a larger number of experts will be required again in later years for BTR submissions containing Parties' communications that address achievement of their NDCs.

Finally, we may see a large turnover in reviewers over the next couple of years. The UNFCCC secretariat noted that between the year 2000—when individual reviews of GHG inventory submissions were first conducted during the trial period—and 2018, 503 experts participated in GHG inventory reviews activities.²⁹ This number reflects a surprisingly small pool of experts over such a long time period (18 years), as the Annex I GHG inventory review process requires approximately 150 experts/year. **It is likely many of these experts, who were the original builders of the current review processes, as well as the authors of the UNFCCC and IPCC Guidelines themselves, will move to other positions or retire. This transition will leave a large gap in institutional knowledge and bring an added challenge to the problem of finding sufficient experts.**

The language abilities of TERT members must also be factored into the calculation of the number of experts needed. BTRs must be submitted in one of the official languages of the United Nations and at least one TERT member should be fluent in the language of the Party under review. As there will be

²⁸ Para 176 of MPGs

²⁹ FCCC/SBSTA/2018/INF.3. These totals do not include 12 observers that participated in the reviews between 2000 and 2008.

more reports submitted by Parties under the BTR process than under the current reporting processes, it seems likely that there will be more non-English reports, which poses challenges for fashioning a TERT. A recognized challenge for the current review processes is that submitting national inventory reports in a language other than English puts an additional burden on the secretariat to process the information and find review experts with knowledge of that language in addition to English. In addition, many experts must review the same Party's submissions year after year because of their language skills (within the pool of available review experts). These experts are not able to use their experience and contribute to the review of other Parties' submissions.³⁰

Use of information technology tools and applications (e.g., online translation tools) can help address this problem. However, use of these tools requires additional time of the experts, and the translations are far from perfect. Alternatively, financial support to countries to formally translate their official submission into English could facilitate the work of experts.

³⁰ BR 2016 INF 8, para 20

Table 2. Estimate for the number of experts needed under the Paris Agreement

2024 submissions								
	Estimate of # Submissions received	# of "Review-weeks"	Total # of Experts Needed to Support Review Process	Total # of Experts Needed to Support Review Process	Reviewer Multiplier (applied to reflect that experts decline invitation to review)	Total # of Experts Needed to Qualified and Available to Support Review Process	Total # of Experts Needed to Qualified and Available to Support Review Process	Assumptions
			(Assumes 5 experts needed per country, per review week)	(Assumes 9 experts needed per country, per review week)				
	184		5	9		5	9	
ICR	138	138	690	1242				In the first BTR review, countries should have an ICR, but there is some flexibility for CR, this assumes 75% are ICR. In a CR, every expert reviews 2 countries. This is reflected in column "# of review weeks". Multiplier based on experience in recent GHG Inventory reviews: In 2018, secretariate invited 220 experts, but 67 declined; in 2017, 151 experts invited, 42 declined and in 2016, 289 invited, 72 declined.
CR	46	23	115	207				
DR	0	0	0	0				
Total # of experts			805	1,449	28%	1028	1851	

2026 submissions								
	Estimate of # Submissions received	# of "Review-weeks"	Estimated # of experts needed/ country	Estimated # of experts needed/ country	Reviewer Multiplier (applied to reflect that experts decline invitation to review)	Total # of Experts Needed to Qualified and Available to Support Review Process	Total # of Experts Needed to Qualified and Available to Support Review Process	Assumptions
			(Assumes 5 experts needed per country, per review week)	(Assumes 9 experts needed per country, per review week)				
	184		5	9		5	9	
ICR	37	37	185	333				In a DR/CR, every expert reviews 2 countries. A bit demanding. Used the 2 every 10 year rule for ICR, but countries could opt out. Multiplier based on experience in recent GHG Inventory reviews: In 2018, secretariate invited 220 experts, but 67 declined; in 2017, 151 experts invited, 42 declined and in 2016, 289 invited, 72 declined.
CR	110	55	275	495				
DR	37	19	95	171				
Total # of experts			555	999	0	709	1,276	

In addition to qualified experts, sustainability of the review process critically relies on the work of highly qualified UNFCCC secretariat staff that serve as review officers that support ERTs. Table 3 shows the corresponding demand for secretariat staff to support the review process. The demand for review officers directly working with the TERTs will increase under the PA. **For implementation of the PA, the UNFCCC secretariat will need approximately 98 review officers (recognizing that a single review officer may be responsible for more than one review), which is nearly four times the current number of staff at the UNFCCC secretariat performing review officer assignments (approximately 25).** The associated demand for other secretariat support (e.g., administrative, IT, and legal) will add even more costs and personnel requirements. Tables A2.1 and A2.2 in Annex II provide data on the UNFCCC secretariat's current budget allocation to review activities.

Table 3 Demand for UNFCCC Review Officers

2024 Submissions						
184 submissions	# of reviews, by review type	Estimated # of days to support each Party's review	# of Review Officers per review	Total # of Review Officer-Days	Estimated <u>annual</u> number of Review officers	Assumptions
	184					
ICR	138	30	2	8,280		Sources: Expert judgment, considering Pulles 2017. DRs were not evaluated in Pulles 2017, this assumes the same time as a CR. Assume staff work 54 days a year on review (approximately 1/3 of the time) given other responsibilities (negotiations, annual meetings etc). Given the scope of reviews, this assumes that 2 review officers are needed per review, except a desk review. Currently 1-2 officers per review are used.
CR	46	25	2	2,300		
DR	0	25	1	0		
Total				10,580	98	

2026 Submissions						
184 submissions	# of reviews, by review type	Estimated # of days to support each Party's review	# of Review Officers per review	Total # of Review Officer-Days	Estimated <u>annual</u> number of Review officers	Assumptions
	184					
ICR	37	30	2	2,220		Sources: Expert judgment, considering Pulles 2017. DRs were not evaluated in Pulles 2017, this assumes the same time as a CR. Assume staff work 54 days a year on review (approximately 1/3 of the time) given other responsibilities (negotiations, annual meetings etc). Given the scope of reviews, this assumes that 2 review officers are needed per review, except a desk review. Currently 1-2 officers per review are used.
CR	110	25	2	5,500		
DR	37	25	1	925		
Total				8,645	81	

Providing training opportunities for both reporters and reviewers

High quality training is essential for both review experts and review officers. Experts under the PA will be required to complete training before being qualified and approved to serve on a TERT. There will be a large demand for training in the coming years to support both the BTR review process, more so than observed in earlier years for the existing reporting processes, as many experienced reviewers were then “grandfathered in” and not required to complete certain trainings.

Proper training will address two challenges in the current review process. First, training on the technical reporting requirements (e.g., the 2006 IPCC Guidelines) as well as the fundamentals of the review process will help reviewers learn to focus their scarce efforts on findings that “really matter.” Reviewers often feel like it is their job to find all types of problems, so they do. But, the most important findings are those that affect the Party's ability to meet its contribution (e.g., whether it is on track to meet its emissions reduction target), and in particular for developing countries, identifying their most important capacity building needs.

Training has also been helpful in the current review processes to clarify areas of ambiguity in the reporting guidelines. Case studies in the training material that reflect the types of situations TERTs will face will strengthen the expertise of the team and help ensure consistency across reviews.

Developing and adapting tools and materials to assist reviewers

“Tools and materials” refers to the information technology, templates, guidance documents, workshops, and refresher seminars, frequently asked questions, and handbooks that are developed to support the UNFCCC secretariat, Parties, and review experts to undertake their tasks.

These tools and materials should be designed explicitly with the objectives of the review process in mind, in particular, delivering high quality findings in a timely manner, while minimizing burdens on all involved in the process. They should also be developed to facilitate consistency in the review process among Parties, and within Parties over time.

The current review process has made great strides in recent years in the development of information technology (IT) tools to support communications among ERT members and between the ERT and the Party under review. Efforts have been made to develop good practice guidance documents and handbooks for reviewers. A particularly successful development in the GHG inventory review process was the introduction of sector experts groups to provide guidance to ERT members in cases where the relevant IPCC Guidelines were ambiguous or interpreted in different ways (Box 2). These expert groups provide valuable and timely support to ERTs during the review week and can enhance the consistency of the review process.

Considering additional opportunities to make such groups available or to create an electronic forum for interactions with advisors during and after the review week as the experts finalize reports would enhance the consistency and efficiency of the review process.

Nevertheless, challenges remain; and a common comment by experts is that the review process is not fully using IT tools to support the review process. Past reviewer discussions (questions, answers, and final recommendations) are not easily

searchable and retrievable in an electronic format. The different phases of the review process (e.g., asking questions to the Party, documenting findings, and drafting preliminary and final recommendations) are done through separate electronic processes. **Tools that enable information to**

Box 2. The LULUCF Advisory Committee: A Model for the Future of the Paris Agreement

Experience with the Annex I GHG inventory review process shows that interpretation of the IPCC Guidelines for national GHG inventories can vary across experts. This problem will surely also occur with reviews under the PA. Several “advisory committees” or “experts groups” have been established under the existing review processes to help experts interpret the IPCC Guidelines. The first such group, the LULUCF Advisory Committee, was established at the 7th annual meeting of LRs, recognizing the particular complexities of that sector. If an ERT has a question on the interpretation of the Guidelines during the review week, they can submit a question to the LULUCF Advisory Committee, masking the identity of the Party subject to review. Members of the LULUCF Advisory Committee then provide their individual views on how they would interpret the Guidelines. The ERT then considers the expert advice and comes to its own conclusion on the matter. Recognizing the value of the LULUCF Advisory Committee, the LRs of GHG inventories approved the formation of committee or expert groups for other sectors at their 11th annual meeting.

be uploaded, sorted, and that automatically populate information to generate reports would facilitate the TERTs' work and improve the efficiency of the review process.

Of course, there are cost and time implications associated with IT development. But, **addressing this technological need early, before the first BTR reviews begin, will greatly lower the likelihood of major problems surfacing with the PA review process.**

Of course, even once tools are made available, review experts will still need support in learning how to use them effectively. Once an expert nominated to the ROE completes the initial training and passes the associated examinations, the expert is qualified to participate in reviews. However, the existing review processes have clearly shown that reviewers still require a great deal of practice and learning to become fully effective.

Conclusions and recommendations

The reporting of transparent, national-level information through BTRs is a central element for successful implementation of the Paris Agreement. The review of a Party's reporting by a TERT provides valuable insight for the Party to improve its domestic MRV activities. At the same time, a Party's BTR, as well as subsequent discussions and exchanges through the facilitative, multilateral consideration of progress, provides critical input to more formal international mechanisms like the global stocktake.

This discussion paper argues that as we look forward towards developing the review process under the Paris Agreement, it is important to take a moment to reflect on our past. Experts, Parties, and the secretariat have a wealth of experience to draw from based on the current review and technical analysis processes established under the Convention and the Kyoto Protocol. This discussion paper has outlined a number of challenges in the current processes. Those experts who have long been in the trenches as a member of an ERT or technical analysis team, or as a country being reviewed, will likely say that the current processes are not sustainable, particularly when scaled to the level needed under the Paris Agreement.

However, therein lies the opportunity. We do have experience to draw on. We know what works, and where improvements are needed. We have some time. We just need the will to make it happen.

Considering the vast wealth of experience under the UNFCCC combined with a careful examination of the future requirements for the PA review process, we recommend a number of reforms to the UNFCCC expert review process to meet the scaled up and more complex needs of BTR reviews under the PA. These recommendations can be grouped into seven broad categories. A roadmap for implementing these recommendations is shown in Figure 2.

Recommendation 1: Design a system that delivers reports that are of a known and sufficient quality (fit for purpose) in timely manner

The review process must be designed and implemented with the relevant objectives in mind—in particular, sustainability, quality, cost-effectiveness, timeliness and burden minimization. Some of the challenges in the current review process result from the well-meaning activities of experts and the secretariat. Experts feel it is their job to call out all errors in the reports under review, so they identify

many findings and recommendations. The secretariat strives to make every report of the highest quality prior to publication, subjecting reports to multiple levels of QA/QC prior to publication. While each of these activities in its own right is important, they must be undertaken with a broader goal in mind, to deliver reports that are of sufficient quality (fit for purpose) and delivered on time.

Specific recommendations to achieve this balance are:

- Identify the key elements that TERTs need to communicate in the review reports to provide relevant information to the Party, the facilitative, multilateral consideration of progress, the global stocktake, and the mechanism to facilitate implementation of and promote compliance (Article 15), and stick to it;
- Allow for the fact that the focus of the review, and therefore the reports, may evolve over time. The review of countries that are just beginning to institutionalize their MRV system will necessarily be different than the review reports of Annex I countries who have been submitting national GHG Inventories and other communications on a more regular basis;
- Adhere to the deadlines, whether it be the timeline for completion of a review report or the maximum number of pages expected for a report. Deadlines are introduced as an indicator of expected level of effort; if TERTs are not meeting these deadlines, procedures should be changed. Perfection can be the enemy of the good;
- Ensure that review report templates are streamlined and standardized, and communicate the most pertinent findings of the review, namely those that are related to GHG key categories, a Party's progress towards achievement of its NDC, support provided by developed country Parties and, as appropriate, capacity building needs of developing country Parties;
- Allow for different review report templates that reflect the different review formats, with review reports generated through a desk review being the most streamlined.

Recommendation 2: Increase and broaden the number of active and effective experts on the ROE who are available, financially supported, and motivated to support the review processes under the PA.

Without enough qualified review experts, the timeliness, quality, and sustainability of the review process will seriously suffer or possibly become impractical to implement. We recommend the following specific reforms:

- **Reconsider nomination procedures for the UNFCCC ROE.** Currently, for an individual to be nominated to the ROE, they must be approved by the National Focal Point (NFP) of the country. This step is required, in part, so that the Party can indicate its willingness to support the expert. However, as is discussed above, many experts that were previously nominated, and are still listed on the ROE, no longer participate in reviews. While we acknowledge that the NFP process varies from country to country, the current NFP nomination step unnecessarily limits the

potential pool of experts in some countries. It can add bureaucratic and political friction to a process that is intended to be efficient and technical.

According to the new MPGs³¹, for an individual to be included on the ROE, they must be nominated by a Party or, *as appropriate, by an intergovernmental organization*. The introduction of nominations from intergovernmental organizations opens the door to an alternative pathway for nominations to the ROE. Specifically, in addition to intergovernmental organizations nominating their own staff, ROE nominations from individuals and recognized observer organizations could also be accepted through procedures established by these intergovernmental organizations. These nominations should then be screened using objective criteria (e.g., using a multi stage process, including first a demonstration of appropriate technical qualifications; second, completion of training and passing of exams; and third, a formal agreement to support a minimum number of reviews over a given period of time). Although all experts on a TERT are serving in their personal capacity, additional procedures may be needed to establish which countries the experts nominated by intergovernmental organizations are from. These procedures are necessary to ensure that the composition of the TERTs and the selection of LRs meets the requirements for geographic representation in the MPGs.³²

- **Identify innovative means of financially and reputationally motivating new and existing experts.** Currently, the UNFCCC secretariat supports the travel arrangements and per diem for experts from non-Annex I (developing) countries, and in limited cases, for other countries (e.g., economies in transition). For developed countries, these costs are expected to be borne by the expert's government and/or expert's organization. While this arrangement is reasonable in theory, its practical result is that many qualified experts who are not supported by Annex I governments are excluded from the review process. Further, both developed and developing country experts that do participate may nonetheless be inadequately compensated for their work, including significant time to properly prepare for a review and complete the long process of finalizing a review report. One of our key recommendations is, that new funding and a funding process are needed to support the current pool of experts and make it possible for new experts to participate. This compensation can be provided in a manner that holds experts accountable for the entire review process—thereby providing an incentive to complete the review process in a timely manner. The availability of financial support may also increase the incentive for experts to take the necessary training and be available for the review process. A similar process was established under the Clean Development Mechanism, where experts supporting methodology development, registration and issuance appraisals, and accreditation process were only paid once they successfully completed their assigned task.

While the authors acknowledge such a funding mechanism may be outside the scope of the current UNFCCC decisions, including the MPGs (where experts from developing country Parties are to be funded according to the existing procedures for participation in UNFCCC activities³³), we argue that these current procedures need to be reformed to include external funding

³¹ MPGs, Para. 172

³² MPGs, Paras. 178, 181 and 182.

³³ MPGs, para. 182

sources. The experience above with the CDM process established a precedent, that together with sufficient additional staff resources at the secretariat to monitor the process, can further incentivize activities. If the success of the review process is fundamental to the success of the implementation of the PA, then we must identify a viable financial mechanism to facilitate its success.

While this reform may seem revolutionary, the added cost would not be prohibitive. Overall, we estimate it could be implemented for about US\$4M/year. Table A2.3 in Annex II provides estimates of the costs for supporting all experts (recognizing that not all of these funds are additional, with the travel and per diem of non-Annex I countries currently provided).

- **Identify a “push” mechanism to incentivize Parties not currently supporting the review process.** Despite years of pleading (see Annex I), many Parties still do not nominate experts to the ROE or support them in such a manner that they are available to actively participate in the review process. We recommend that the CMA at least consider “in lieu of” payments that countries could make to support the review process based on the cost of supporting a defined number of experts weighted by agreed criteria (e.g., analogous to the UN assessment rate formula).
- **The UNFCCC secretariat and Parties should better publicly recognize reviewers in good standing.** Environmental and technical professionals are not motivated purely, or even primarily, by financial compensation. Peer recognition of a person’s expertise and work can be a powerful motivator. We recommend that a formal certification designation be established for active review experts that are in good standing, and, importantly, that the UNFCCC secretariat promote this certification. Within the current review processes under GHG inventories and NC/BRs, it is generally known who are the “lead reviewers” and who are “new reviewers”. However, there is no public recognition of how long individuals have been involved in the process, how many reviews they have supported, and whether they serve as lead reviewers. To start, the publicly available ROE should be supplemented with a column listing the number of reviews each person has supported.³⁴ Next, reviewers on the ROE could be categorized based on their experience with the review process. For example, the ROE could include qualification levels such as:
 - a. *Reviewer-in-training:* An expert that has passed the necessary exams, but not yet completed his/her first review. In their first review, generally a centralized review, they are paired with experienced experts to support the learning process.
 - b. *Reviewer in good standing:* Upon satisfactory completion of a review, he/she will be promoted to a full reviewer. These reviewers are part of an ERT with full responsibility for one or more countries. To remain in good standing, an expert should be required to participate in a certain number of reviews over a given period of time and be rated highly by their peers.
 - c. *Lead Reviewer:* Those reviewers who have led an ERT and passed any LR-specific mandatory training.

³⁴ This step would also identify how many reviews each Party supports through its nominated experts.

- **Broaden the scope of stakeholders involved in education/training activities.** To achieve the necessary scale for the PA review process, as discussed above, it is essential to actively recruit experts who have the desire and ability to work at a professional level on technical issues relevant to the PA. We recommend training be deployed *broadly* (e.g., from beyond government institutions to universities, sub-national governments, the private sector and non-governmental organizations) to attract experts and enhance their technical abilities— through formal training on the international policy context, international reporting requirements (GHG inventories; NDCs; finance, technology and capacity building; Article 6), and methodological requirements of the 2006 IPCC Guidelines.

Enhancing education and training beyond government experts through universities is one approach to reaching a broader community of experts. Specifically, programs and course development on GHGs and other MRV topics is one way to broaden exposure to PA-relevant technical issues. A recent successful example is cooperation among the Greenhouse Gas Management Institute (GHGMI) and partners in China and Indonesia, where academic programs on terrestrial carbon accounting at a university in each of these countries were established that include course work related to UNFCCC reporting processes, REDD+, and the 2006 IPCC Guidelines.³⁵ To be fully successful, there must also be a mechanism in place to ensure that these trained individuals have an avenue to be added to the ROE, so they are formally brought into the review process. Some Parties also nominate experts from private industry to the ROE; this is good and should be encouraged.

The review processes under the Convention contain procedures to protect confidential information.³⁶ These procedures should be reviewed and considered in the context of the PA well before the review process begins, both to facilitate new experts joining the ROE and to ensure that Parties have the necessary confidence that sensitive information will be protected.

Finally, the review process itself can be a powerful training tool that should be capitalized on, exposing a larger national community to the PA reporting and review processes. Although countries may be reticent to host an in-country review upon submission of their first BTR for a variety of reasons, we encourage the secretariat and others to reach out to Parties early and support them in their efforts to host such a review, by communicating the general procedures and expectations of such a review, and addressing any questions of the Party. This proactive effort will mitigate possible fears and open the doors to a dialogue that will have benefits beyond the review itself.

³⁵ <http://carboninstitute.org/initiatives-courses/>

³⁶ https://unfccc.int/sites/default/files/impl_proc.pdf and https://unfccc.int/sites/default/files/ext_cp0306a1.pdf

Recommendation 3. Enhance capacity building support (for reporters and expert reviewers).

Experts on the ROE need to complete the necessary training and pass the required exams to be qualified to support the UNFCCC review processes. We recommend a two-stage training process, which will be particularly beneficial for many developing country experts. Stage one would focus on methodological guidance (i.e., learning the 2006 IPCC Guidelines and, if appropriate, the 2019 refinement). Stage two would focus on “review approaches”. This second stage should include simulated review workshops (i.e., how to review).

We acknowledge that there are new efforts by the UNFCCC secretariat and the United Nations Development Program to conduct quality assurance peer reviews of non-Annex I country information. While the experts conducting such peer review efforts are highly experienced, the greatest capacity building advantage is to the host country itself. Like the benefits of the in-country review noted above, these voluntary peer reviews simulate, in part, what an actual review looks like, and should be encouraged.

Finally, specific outreach efforts should be institutionalized in all relevant UNFCCC projects and cooperative activities, like the voluntary peer reviews and regional training workshops, to communicate to the audience the pathway to becoming more involved in the BTR review process (e.g., nomination to the ROE and required trainings). Dedicated follow up activities should be initiated with a view to adding a pre-defined number of experts to the ROE each year based on these outreach activities.

Recommendation 4. Develop and make available better tools and materials to facilitate the review process.

There are a number of tools and materials that we recommend to enhance the PA review process:

- Documents supporting the current review processes should be promoted as a resource so experts can become more familiar with the current processes and issues arising therein. These documents include the Technical Analysis Best Practice Guidance under the BUR process, the Review Practice Guidance under the NC/BR process,³⁷ and the Handbook for the Review of National GHG Inventories.³⁸
- We need to begin developing new guidance documents (e.g., handbooks, checklists, review templates, instructions) to support the review processes under the PA. These tools and templates need to consider challenging new elements introduced under the PA, in particular:
 - a. How to track progress of NDC implementation, in particular, review of indicators (bearing in mind that adequacy or appropriateness of the indicators are not subject to the review);
 - b. Issues related to the accounting for voluntary cooperative approaches and internationally transferred mitigation outcomes;

³⁷ <https://unfccc.int/node/64687>

³⁸ https://unfccc.int/sites/default/files/resource/ReviewHandbook%20GHG%20inventories%202018_clean.pdf

- c. What will the “tone” of the BTR reports be? The review of Annex I GHG inventories focus on TACCC, in particular, ensuring the accuracy of emissions information reported and encouragements for a Party to improve specific components of TACCC. Currently, for non-Annex I countries—particularly in light of provisions to ensure that the process is implemented in a manner that is non-intrusive, non-punitive, respectful of national sovereignty, and addressing capacity building needs—the tone of reports is more facilitative in nature. The review itself does not necessarily critique the accuracy of specific emissions reported.
- d. How to instill in the review process (i.e., in practice) the principles of:
 - i. “Ensuring that Parties maintain at least the frequency and quality of reporting in accordance with their respective obligations under the Convention”. The current PA ETF MPGs are not as detailed in all elements as the Annex I reporting guidelines under the Convention /Kyoto Protocol. So, how do reviewers ensure maintenance of the quality of reporting?³⁹
 - ii. How the TERT shall operationalize the instruction to “pay particular attention to the respective national capabilities and circumstances of developing country Parties”⁴⁰

Any development of tools and materials should be done in close coordination with the Consultative Group of Experts, whose mandate was extended to begin supporting the ETF as of 1 January 2019,⁴¹ as well as any joint meeting of LR/technical leads (see recommendation 6). While we recognize that the CGE and the LR have different mandates, with the CGE generally supporting capacity building for reporting and the LR considering the efficiency and effectiveness of the review process, synergies between the expertise in these two groups should be explored and lessons learned from each group can provide valuable input in the processes, tool and materials developed by the other. Finally, given the large influx of new review experts from around the world, extra consideration should be given to translating review tools and materials into languages other than English.

- A single tool should be developed to transcribe information from one step of the review process to the next (e.g., results of the assessment report or simplified review, questions and answers with the Party, development of the final report). Ideally, the TERT's findings should be able to be entered into a system once, which would then automatically populate multiple reports. The system should be searchable so reviewers and review officers can easily extract previous findings—thereby reducing review burden and facilitating the tracking of issue over time.

Recommendation 5. Identify opportunities to pilot aspects of the MPGs as soon as possible.

Several successful piloting exercises have been undertaken historically to facilitate transition to new guidelines and should be considered in the years leading up to the first BTR submission. For instance,

³⁹ Para. 3(f) of the MPGs

⁴⁰ Para. 147 of MPGs

⁴¹ MPGs, para. 15

decision 6/CP.5 (1999) established a trial period covering Annex I GHG inventory submissions due in 2000 and 2001, in preparation for the first mandatory submission in 2003. In this case, the UNFCCC secretariat was requested to test different review formats (i.e., in-country, centralized, and desk) and to report on the advantages and disadvantages and cost implications of the various processes.

Pilots have also been used to test more complicated review procedures (e.g., application of adjustments under the Kyoto Protocol). In that exercise, ERTs practiced with a range of adjustment methods across various inventory sectors using the relevant technical guidance for adjustments. The secretariat compiled the results of the practice with adjustments, the experiences and comments of the ERTs and of the Parties concerned and made this information available in its report to SBSTA on inventory review activities.⁴²

Pilots could be very useful exercises particularly with a large number of new review experts and countries involved in the process. They could also be used as a training opportunity. Some key examples of activities that could benefit from piloting are review of the tracking of progress for implementation of the NDC, including indicators, and once the guidance is finalized, tracking of ITMOs, and testing of the IT tools developed in recommendation #4.

There is not a lot of time to implement formal piloting activities, with the reporting formats to be completed by SBSTA only by the end of 2020, presumably the resulting reporting tools available at the earliest in 2021, and the first BTRs due at the latest by the end of 2024. Formal or informal piloting activities could be in addition to the current GHG inventory, NC/BR, and BUR review processes for those countries that agree to participate. Some countries may also be interested in submitting their BTR earlier than the end of the 2024 deadline. In this case, there could be an agreement to pilot review activities on these early submissions prior to a more formal submission by the deadline.

Recommendation 6. Start dedicated discussions among current experts in GHG inventory, NC/BR, and BUR processes.

There are groups of LRs established for review of GHG inventories (active since 2003) and NCs/BRs (active since 2014) who have convened on an annual basis with the goal of examining the various review processes and making recommendations to improve them. Although many experts are involved in both meetings, there is no dedicated forum to discuss issues between the two groups. Further, there is no comparable meeting of technical leads under the BUR process.

These LRs have a wealth of experience and views on how to improve the efficiency of the current review process. The LRs for GHG inventories⁴³ and NC/BR⁴⁴ develop annual conclusions of their meetings to

⁴² 1st meeting of LRs of GHG inventories. Available at https://unfccc.int/sites/default/files/conc_rec1.pdf

⁴³ <https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/greenhouse-gas-inventories-annex-i-parties/review-process>

⁴⁴ <https://unfccc.int/process/transparency-and-reporting/reporting-and-review-under-the-convention/national-communications-and-biennial-reports--annex-i-parties/international-assessment-and-review/lead-reviewers-meeting>

communicate to the SBSTA, including information on lessons learned and recommendations to enhance the efficiency and consistency of the review process.

We recommend a combined meeting of LRs/ technical leads of GHG inventory, NC/BR, and BUR processes be convened to begin assessing what has worked historically, what has not worked, and broadly focus on preparing for guidance on new issues facing experts under the BTR process.

Recommendation 7. Encourage Parties in a position to do so, to submit their first BTR well in advance of the 2024 deadline

All signs point to the need for the international community to mobilize efforts now to start allocating the necessary resources and begin institutionalizing procedures to implement the Paris Agreement. We discussed above the surge of experts that will be needed to review the first BTR, given that these reviews should be conducted in-country. One way to alleviate the pressure on Parties, experts and the secretariat for this first review cycle, is if Parties in a position to do so, submit their first BTR early. If reporting tools are developed by the end of 2021, these could technically be submitted as early as 2022. Early submission would help stagger the demands on the review process, and would serve as a “soft launch” as Parties, experts and the secretariat apply to the new tools, templates and procedures established under the PA.

Finally, we believe that the seven broad classes of recommendations identified above should all be explored further and evaluated. We do not claim that these are the only options, and welcome creative and forward-thinking approaches that build on our collective experience and ensure that the necessary human and financial resources are available to support the work needed.

Figure 2. Roadmap: Scaling-up the Current Review Process to Meet the Needs of the Paris Agreement ETF

Activity	2019	2020	2021	2022	2023	2024	2025	2026
Recommendation #1: Design a system that delivers reports that are of a known and sufficient quality (fit for purpose) in timely manner								
Develop appropriate review report templates and revise, as necessary based on experience								
Adhere to deadlines in the review process								
Recommendation #2: Populating the ROE								
Secretariat to reach out annually to "push" countries nominate experts and make them available.								
Train more experts on existing review processes								
Identify means for financial support for ALL experts								
Consider, and as appropriate update, confidentiality procedures for PA								
Modify current ROE to indicate training status and reviewer status								
Recommendation #3: Enhance Capacity Building Support								
CGE evaluates and develops materials								
Continue voluntary peer reviews of non-Annex I countries								
Agree to training programme for review experts								
Develop training materials to reflect PA, including Article 6 and agreement reached end 2020								
Implement new training programme under PA								
Recommendation #4: Develop and make available tools and materials								
CGE evaluates and develops materials								
Promote wider dissemination of current review guidance								
Begin developing guidance for PA, anticipating challenging areas								
Develop IT tools to support review activities								
Recommendation #5: Support Piloting Activities								
Procedures and Tools								
Joint Lead Reviewer								
SBSTA to recommend joint meeting of GHGI/ NC/ BR/ BUR leads								
Finalize reporting tables, and review report template								
Recommendation #6: Joint LR meetings among GHGI/NC/BR/BUR								
Hosting joint meeting of GHGI/ NC/ BR/ BUR leads								
Recommendation #7: Encourage Parties to submit first BTR early								
Submission of first BTR								

Annex I. Selected Observations by the UNFCCC secretariat and LR Conclusions related to the Roster of Experts

Recommendation	Reference
Need to Add Experts to Roster of Experts	
The number of experts in the pool should be increased to sustain the quality and effectiveness of future reviews.	FCCC/SBSTA/2018/INF.5
The LRs encouraged the national focal points of the Parties to nominate new experts to the roster, in particular experts who are involved in the national institutional arrangements for measurement, reporting and verification, so that the respective governments could benefit from the expertise these individuals would gain during the BR/NC reviews.	FCCC/SBSTA/2018/INF.5
The LRs also encouraged the national focal points to update regularly the roster to reflect changes in the experts' engagement at the national level and to leave in the roster only those experts who are willing to participate in the reviews.	FCCC/SBSTA/2018/INF.5
The LRs reiterated the need to continue increasing the number of technical experts who can actively participate in the review process with the support of their nominating governments, in order to ensure the availability of a sufficient number of experts and the balanced expertise of the ERTs.	FCCC/SBSTA/2017/INF.4
To that end, the LRs reiterated their encouragement of Parties to continue nominating experts who are actively engaged in NC, BR and biennial update report preparation at the national level or have relevant technical expertise, and to regularly update the UNFCCC roster of experts.	FCCC/SBSTA/2017/INF.4
The LRs further acknowledged the challenges faced by the secretariat in planning and coordinating the reviews of the NC6s and BR1s in 2014 and 2015, which arose from: (1) an insufficient number of experts available to conduct the reviews, owing to other competing priorities or a lack of funding to cover the travel costs of their participation in cases where they are funded by the governments that nominated them; (2) the outdated information on experts held on the RoE, which is maintained by the national focal points; (3) the need to ensure the timeliness of the publication of the review reports for the smooth operation of the MA process; and (4) the need to improve the quality and consistency of the review reports owing to their increased visibility in the MA process, where findings from them are often referred to.	FCCC/SBSTA/2016/INF.8
In accordance with paragraph 15 of decision 13/CP.20, the LRs considered the experiences of DRs during the 2016 review cycle and noted positive experiences, but also noted some of the difficulties in organizing such reviews, such as the availability of experts and achieving geographical balance in ERTs.	FCCC/SBSTA/2017/INF.8
A limited number of experts listed in the roster participate currently in the review process. One of the reasons for this is that only some Parties regularly update the list of experts nominated by them; many of the experts still on the roster had already moved on to other positions and are no longer available to participate in the review process. Another reason is that some experts nominated to the roster have not yet taken the mandatory training courses, or have not passed the relevant examination.	FCCC/SBSTA/2009/INF.4
The LRs requested that the secretariat inform national climate change focal points of the need to support the review experts that they nominate for the review process, including by taking into account the requirements of this process, such as the time needed for preparation and the time needed during and after the review week in the lead-up to the finalization of the annual review report.	FCCC/SBSTA/2009/INF.4

A limited number of experts listed in the roster participate currently in the review process. One of the reasons for this is that only some Parties regularly update the list of experts nominated by them; many of the experts still on the roster had already moved on to other positions and are no longer available to participate in the review process. Another reason is that some experts nominated to the roster have not yet taken the mandatory training courses, or have not passed the relevant examination.	FCCC/SBSTA/2008/INF.4
The SBSTA noted with concern that it continues to be difficult for the secretariat to organize reviews with complete expert review teams (ERTs). In order to have complete teams, some experts, both from Parties not included in Annex I to the Convention and from Annex I Parties, were invited by the secretariat to participate in more than one review in 2008.	FCCC/SBSTA/2008/L.20
Even if the number of expert reviewers is growing, more reviewers are needed for the review process of the national inventories of all Annex I Parties. Availability of experts with sufficient time, free of other commitments, to devote to the review process, especially from non-Annex I Parties, continues to be the main challenge for the review process.	FCCC/SBSTA/2006/INF.6
Expand regional representation on ROE (in particular non-Annex I Parties)	
The LR noted the continued need for additional review experts for the review process, in particular from non-Annex I Parties, to be nominated to the UNFCCC roster of experts and to participate in the training courses. They also noted the need for the governments that nominate experts to the UNFCCC roster of experts and agree on their participation in reviews to ensure that these experts are fully available, in order to ensure the timely completion of the reviews, in accordance with relevant decisions under the Convention. This is particularly relevant to governments that nominated very few experts to the UNFCCC roster of experts. The LR acknowledged the need for Parties to update the UNFCCC roster of experts on a regular basis and requested the secretariat to remind all Parties once a year to update it.	FCCC/SBSTA/2011/INF.13
The limited number of experts available for the reviews makes it difficult to ensure proper geographic balance in the review teams and sufficient number of experts in the teams for the review of inventory of the complex sectors, such as energy and LULUCF. To that end, despite the dedication and commitment of many non-Annex I experts, it was not possible to ensure a proper balance in the review teams between Annex I Party experts and non-Annex I Party experts owing to insufficient number of non-Annex I Party experts on the roster. Can't ensure balance	FCCC/SBSTA/2009/INF.4
The LR further noted the need for additional review experts, in particular those from non-Annex I Parties, to be nominated to the roster of experts and trained. They expressed concern that there are still some Annex I Parties that have nominated only one expert to the roster of experts. Therefore, the LR requested that the secretariat explore further options to identify new review experts, in particular from non-Annex I Parties.	
The LR requested that the secretariat inform national climate change focal points of the need to support the review experts that they nominate for the review process, including by taking into account the requirements of this process, such as the time needed for preparation and the time needed during and after the review week in the lead-up to the finalization of the annual review report.	FCCC/SBSTA/2009/INF.4
Need to Enhance Training	
In order to expand the pool of qualified reviewers available for the BR3/NC7 review cycle, the LR reiterated their encouragement of Parties to ...encourage experts to take the relevant courses and examinations of the training programme and update their existing information on the roster.	FCCC/SBSTA/2017/INF.4
The LR noted that the experience gained during the BR1/NC6 and BR2 review cycles may be used to update and further develop the courses of the training programme in order to enhance the consistency of reviews. The LR also noted that this would help the review experts to gain up-to-date knowledge on substantive matters related to the technical review process and to further strengthen their common understanding of the approaches to the reviews.	FCCC/SBSTA/2017/INF.4
The LR reiterated the importance that Parties nominate experts with experience in GHG inventories, including robust general and sectoral technical expertise, to the UNFCCC roster of experts and regularly update their nominations. The LR also reiterated the importance of the support from Parties to ensure that their experts can complete the required training programmes, in order to have more qualified reviewers available for the GHG inventory review process.	FCCC/SBSTA/2017/INF.8
The training activities are of crucial importance for ensuring the required quality and consistency of the review process. This is particularly true for experts from non-Annex I Parties, as they usually do not work on inventories on a daily basis. In addition, experts participating in the training activities and the reviews will be able to use the experience gained to improve the quality of their own national inventories.	FCCC/SBSTA/2009/INF.4

Need to Enhance financial support	
These challenges include Parties' delayed submission of their BR2s and the limited number of available experts and LRs qualified to conduct the reviews thereof. In part, these challenges stem from competing priorities and a lack of financial support provided for the participation of experts by their nominating governments.	FCCC/SBSTA/2017/INF.4
They also reiterated their encouragement of Parties to facilitate the participation of experts in the reviews by allocating the necessary resources and time in their workplans in order to ensure that they are available for the entire review process.	FCCC/SBSTA/2017/INF.4
Another reason for problems with the availability of experts is the decline in funding opportunities in Annex I Parties being caused, at least in part, by the impact of the economic constraints currently faced by these Parties. For example, in the course of the preparation for the 2012 review cycle the secretariat received 11 requests from experts nominated by Annex I Parties for exceptional funding, with the rationale that their governments did not have sufficient resources to support the review process. Most of these requests were from Parties with economies in transition. The secretariat had to grant exceptional funding in 10 cases to ensure that the reviews took place, but the number of exceptional situations seems to indicate that this problem is sizeable.	FCCC/SBSTA/2012/INF.10
Special challenges with Desk Reviews	
The LRs noted the need for Parties to encourage and facilitate the participation of experts that they nominated to take part in DRs, noting that without greater support from Parties to experts it will be very hard for the secretariat to organize DRs.	FCCC/SBSTA/2017/INF.8
Noting limitations in availability of secretariat staffing	
Para. 25: The LRs also recognized that there are constraints affecting the review process, including the limited number of experts and secretariat staff participating, the limited time available for the reviews and limited funding. Improving the review process, including the drafting of the review reports, to accommodate those constraints would have a positive impact on the efficiency and timeliness of the process.	FCCC/SBSTA/2013/INF.8
Limited availability of experts affects timeliness of publication of reports	
In addition, another important reason for the delay in the publication of the reports was the severe shortage of review experts experienced by the secretariat in recent years, particularly those invited to participate in centralized reviews of annual submissions in 2011, leading many expert review teams (ERTs) to conduct review tasks with an incomplete number of members and the secretariat to cancel a centralized review and distribute the initially planned Parties' annual submissions among other centralized reviews, increasing significantly the amount of information to be reviewed by each ERT and correspondingly the experts' workload. From seven centralized reviews conducted in 2011, only one review was conducted by a complete ERT. Despite the seemingly large number of experts in the UNFCCC roster of experts, of which a large number have passed the required training courses and examinations, the secretariat had difficulty in engaging experts for the review process. Many experts do not have enough time to devote to the reviews as they are involved in multiple activities related, or unrelated, to climate change or are not more involved in climate change activities, in particular review activities, for different reasons, including a lack of financial resources. The incompleteness of ERTs made it difficult to ensure the timeliness of deliverables by ERTs, in particular review reports, and the quality of these review reports. Due to insufficient expert resources, some experts have to participate in more than one review in a review cycle, putting additional and unexpected burden on them and ERTs).	FCCC/SBSTA/2012/INF.10
The LRs recognized that incompleteness of review teams had a negative impact on the reviews. The LRs also recognized the importance of the review process for the objectives of the Convention and the Kyoto Protocol. Therefore, the LRs requested the secretariat and the Parties to increase their efforts to ensure that a sufficient number of review experts participate in the 2012 review cycle.	FCCC/SBSTA/2012/INF.10

Annex II. Cost implications

The current biennium budget for the Mitigation, Data and Analysis (MDA) Programme of the UNFCCC, the programme responsible for the current review processes under the Convention and the Kyoto Protocol can be seen in Table A2.1. Table A2.2 provides the budget for the specific activities most directly related to supporting the current GHG inventory, NC/BR/BUR review processes.

An important distinction in Table A2.1 is the difference between the “Core budget” and “Supplementary funds”.⁴⁵ These two streams of the budget, the former sourced from indicative contributions from Parties and the latter from voluntary contributions by Parties to support mandated activities for which provisions have not been made in the core, impact the annual operationalization of the review process and the ability for the secretariat to conduct reviews in a predictable manner.⁴⁶

In the current biennium, the core budget, for example, supports an individual review of the GHG inventory submission for one half of the Annex I Parties submitting annually (i.e. reviews are conducted for approximately 22 Parties, although 44 Parties are required to submit an annual GHG Inventory). The reviews of additional Parties are subject to the availability of supplementary funds in a timely manner.

Securing more funding in the core budget facilitates the predictability and sustainability of the review process.

Table A2.1. Current budget allocation to UNFCCC secretariat MDA programme

2018–2019 resource requirements for the Mitigation, Data and Analysis programme

	2016–2017 (EUR)	2018–2019 (EUR)	Variance	
			EUR	%
Core budget				
Staff costs	12 413 866	12 624 360	210 494	1.7
Non-staff costs	2 809 510	3 002 500	192 990	6.9
Subtotal	15 223 376	15 626 860	403 484	2.7
Total supplementary funds ^a	16 966 188	18 511 262	1 545 074	9.1
Total resources	32 189 564	34 138 122	1 948 558	6.1

^a For the biennium 2016–2017, see decision 22/CP.21. For 2018–2019, see annex III.

Source: <https://unfccc.int/sites/default/files/resource/docs/2017/sbi/eng/inf13.pdf>

⁴⁵ For more information

https://unfccc.int/files/secretariat/budget/funding_at_the_unfccc/application/pdf/resource_allocation_in_unfccc_core_budget_and_supplementary_activities.pdf

⁴⁶ FCCC/SBSTA/2018/INF.3

Table A2.2. UNFCCC secretariat budget allocation to activities related to UNFCCC review processes

	Core budget: Staff and non-staff costs (EUR) 2018-2019 biennium	Supplementary Activities: Staff and non-staff costs (EUR) 2019-2019 biennium	Activities
	1,099,099	1,396,570	Support negotiations, data warehouse, data exchange with international organizations
	3,554,229	2,860,212	The mandated reporting and review processes for GHG inventories from Annex I Parties have been implemented in accordance with the relevant negotiations, supplementary seems to be 22 GHG reviews,
	2,365,469	1,959,549	The mandated IAR process for developed countries has been implemented in accordance with the relevant guidelines and procedures
	1,881,995	1,727,318	The mandated ICA process for developing countries has been implemented in accordance with the relevant guidelines and procedures
	1,824,715	1,950,556	Support has been provided to developing countries in their implementation of the reporting guidelines under the Convention; Related to CGE, including IT tools.
Total	10,725,507	9,894,205	

Extract from <https://unfccc.int/sites/default/files/resource/docs/2017/sbi/eng/inf13.pdf>

Table A2.3 provides the estimated costs for experts (not including UNFCCC secretariat review officers) to support the review process. These cost estimates are driven by the number of experts needed to support the process (as discussed in the paper), the length of the review week (currently 5 days for a BR and BUR, and six days for a GHG inventory), the amount of time required from experts before, during, and after the review week, and the assumed daily rates and travel costs. Currently, the UNFCCC secretariat supports the travel arrangements and per diem for non-Annex I countries, and in limited cases, for other countries (e.g., economies in transition). For developed country experts, all costs are currently borne by their government.

The cost estimates in Table A2.3 do not reflect the individual costs borne by any organization currently. Access of reviewers to funding to support the review process is currently a major barrier to their participation. Many well-qualified experts, therefore, currently are not engaged in the process.

Table A2.3 estimates the costs that might be realized if *all* experts (from developed and developing countries) were supported for the travel and time associated with carrying out review activities under the PA.

Table A2.3. Biennial cost estimates for properly funding review experts to participate in PA review process

2024 submissions									
	Estimate of # Submissions received	# of "Review-weeks"	Total # of Experts Needed to Support Review Process	Total # of Experts Needed to Support Review Process	Estimated biennial costs (USD) for experts (5 reviewers/country) ICR/CR and desk separately		Estimated biennial costs (USD) for experts (9 reviewers /country) ICR/CR and desk separately		Assumptions
			(Assumes 5 experts needed per country, per review week)	(Assumes 9 experts needed per country, per review week)					
	184		5	9	\$ 7,800	\$ 4,500	\$ 7,800	\$ 4,500	In the first BTR review, countries should have an ICR, but there is some flexibility for CR, this assumes 75% are ICR. In a CR, every expert reviews 2 countries. This is reflected in column "# of review weeks". It is A bit demanding. Cannot have DR in first BTR. Costs assume (5 day review (\$500/day), 2 day prep before, 2 day after (\$500/day), plus transport (\$1500 and per diem \$300/day for 6 days)
ICR	138	138	690	1242	\$ 5,382,000		\$ 9,687,600		
CR	46	23	115	207	\$ 897,000		\$ 1,614,600		
DR	0	0	0	0					
Total # of experts			805	1449	\$ 6,279,000	\$ -	\$ 11,302,200	\$ -	
2026 submissions									
	Estimate of # Submissions received	# of "Review-weeks"	Estimated # of experts needed/ country	Estimated # of experts needed/ country	Estimated biennial costs (USD) for experts (5 reviewers/country) ICR/CR and desk separately		Estimated biennial costs (USD) for experts (9 reviewers /country) ICR/CR and desk separately		Assumptions
			(Assumes 5 experts needed per country, per review week)	(Assumes 9 experts needed per country, per review week)					
	184		5	9	\$ 7,800	\$ 4,500	\$ 7,800	\$ 4,500	In a DR/CR, every expert reviews 2 countries. A bit demanding. Used the 2 every 10 year rule for ICR, but countries could opt out. Costs assume (5 day review (\$500/day), 2 day prep before, 2 day after (\$500/day), plus transport (\$1500 and per diem \$300/day for 6 days). No travel/per diem for desk review.
ICR	37	37	185	333	\$ 1,443,000		\$ 2,597,400		
CR	110	55	275	495	\$ 2,145,000		\$ 3,861,000		
DR	37	19	95	171		\$ 427,500		\$ 769,500	
Total # of experts			555	999	\$ 3,588,000	\$ 427,500	\$ 6,458,400	\$ 769,500	

Abbreviations and Acronyms

BR = biennial report

BTR = biennial transparency report

BUR = biennial update report

CMA = Conference of the Parties serving as the meeting of the Parties to the Agreement

CMP = Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol

CP = Conference of the Parties

CR = centralized review

DR = desk review

ERT = expert review team

ETF = enhanced transparency framework

EU ESD = European Union Effort Sharing Decision

GHG = greenhouse gas emissions

ICR = in-country review

IPCC = Intergovernmental Panel on Climate Change

LDCs = least developed countries

LRs = lead reviewers

LULUCF = land-use, land use change and forestry

MPG= modalities, procedures and guidelines

NC = national communications

NFP = national focal point

NDC = nationally determined contribution

PA = Paris Agreement

QA/QC = quality assurance/ quality control

ROE = roster of experts

SBSTA = Subsidiary Body for Scientific and Technological Advice

SIDS = small island developing states

TACCC = transparency, accuracy, completeness, consistency and comparability

TERT = technical expert review team

UNFCCC =United Nations Framework Convention on Climate Change

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