

CDM-EB110-AA-A01

Concept note

Technical assessment of options with regard to the CDM registry in order to enable issuance of certified emission reductions with respect to emission reductions occurring after the end of the second commitment period for voluntary cancellation purposes

Version 01.0



United Nations
Framework Convention on
Climate Change

TABLE OF CONTENTS	Page
1. PROCEDURAL BACKGROUND.....	3
2. PURPOSE AND SCOPE.....	3
2.1. Purpose	3
2.2. Assumptions and scope	4
2.3. Approach and criteria	5
3. KEY ISSUES AND PROPOSED SOLUTIONS	5
3.1. Technical and regulatory background to the CDM registry operations	5
3.2. Commitment period identifiers in the serial numbers of certified emissions reductions.....	6
3.3. Segregation in the communication of transactions for validation by the international transaction log	10
3.4. Accounting and reporting implications	11
3.4.1. Reporting formats.....	11
3.4.2. Strengthening reporting on voluntary uses.....	11
3.4.3. Additional metadata	11
3.5. How the technical options identified could be implemented	12
3.5.1. Functional and technical specifications	12
3.5.2. Enabling conditions.....	13
3.5.3. Development, testing and roll-out.....	13
4. IMPACTS.....	13
5. SUBSEQUENT WORK AND TIMELINES.....	14
6. RECOMMENDATIONS TO THE BOARD	14
APPENDIX 1. DECISIONS RELATED TO THE CDM REGISTRY AND THE ITL.....	16
APPENDIX 2. INFORMATION ON THE USE OF VOLUNTARY CANCELLATION IN THE CDM REGISTRY	21
APPENDIX 3. TECHNOLOGICAL IMPACT ASSESSMENT FOR THE CDM REGISTRY.....	22

1. Procedural background

1. In view of the end of the second commitment period of the Kyoto Protocol on 3 December 2020, the Executive Board of the clean development mechanism (CDM) (hereinafter referred to as the Board) considered the impact of the postponement of the sixteenth session of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP 16) on the operation of the CDM processes for registration and renewal of crediting periods of project activities and programmes of activities (PoAs)¹ with a crediting period starting on or after 1 January 2021 and issuance of certified emission reductions (CERs) related to emission reductions or removals achieved on or after 1 January 2021.
2. At its 108th meeting (EB 108), the Board agreed on temporary measures to be applied to the CDM processes mentioned above until the CMP provides guidance at CMP 16 and agreed on recommendations to the CMP in that context. As part of its recommendations, the Board noted that the CMP would need to provide technical options with regard to the CDM registry in order to enable issuance of CERs with respect to emission reductions occurring after the end of the second commitment period for voluntary cancellation purposes and requested the secretariat² to prepare an assessment of options for consideration by the Board at EB 109.³
3. At EB 109, the Board considered the assessment of the above-mentioned options (as prepared by the secretariat for EB 109) and requested the secretariat to prepare a revised technical assessment of options with regard to the CDM registry in order to enable issuance of CERs with respect to emission reductions occurring after the end of the second commitment period (hereinafter also referred to as “post-CP2 CERs”) for voluntary cancellation purposes, as prepared by the secretariat for EB 109, including on how the technical options identified could be implemented, for consideration by the Board at its next meeting.

2. Purpose and scope

2.1. Purpose

4. The purpose of this revised note is to present the assessment of technical options with regard to the CDM registry in order to enable issuance of post-CP2 CERs for voluntary cancellation purposes, including how the technical options could be implemented.

¹ For PoAs, the term corresponding to “crediting period” is “PoA period”.

² Any mention of the “secretariat” in this note should be understood to be the United Nations Framework Convention on Climate Change secretariat, unless otherwise stated.

³ The request of the Board is recorded in paragraph 4 of annex 1 to the EB 108 meeting report.

2.2. Assumptions and scope

5. The CDM registry operates as an integrated part of the Kyoto Protocol unit-tracking infrastructure, comprising also the national registries of Annex B Parties⁴ and the international transaction log (ITL). Under current CMP rules,⁵ the ITL validates all transactions involving Kyoto units, including those that are internal to a registry system.
6. The technical options presented in this note are based on the assumption that the issuance of post-CP2 CERs for voluntary cancellation purposes, including the voluntary cancellation transactions, would occur within the CDM registry without the need for external validation of the transactions by the ITL. This is because the Board maintains only the CDM registry (and not other parts of the Kyoto Protocol unit-tracking infrastructure).⁶
7. In connection to the above, it should be noted that, following the entry into force of the Doha Amendment to the Kyoto Protocol, the registry systems under the Kyoto Protocol, including the ITL, will continue to operate in relation to the finalization of the accounting for the targets of Annex B Parties for the second commitment period, which is expected to extend for several years.⁷ Therefore, it may be possible to rely on the full Kyoto Protocol unit-tracking infrastructure for the issuance of post-CP2 CERs for voluntary cancellation purposes during such time. For the reason stated in the previous paragraph, the note does not assess ITL validation and/or how transfers and voluntary cancellation of post-CP2 CERs could work within the wider context of the registry systems under the Kyoto Protocol.⁸
8. This note includes an initial estimate of the effort that would be required to adapt the CDM registry and related CDM information system and tools⁹ to implement the technical options set out. However, the implementation of any technical option has to be considered in the context of the existing legal basis provided through the decisions of the CMP.
9. The secretariat has provided an analysis of the legal basis pertaining to the issuance of CERs with respect to emission reductions occurring after the end of the second commitment period in relation to the work undertaken by the Board over the last four of its meetings. This analysis established that the CMP has not differentiated the issuance of CERs according to the purpose of their eventual use and that the CMP would have to provide guidance in order to enable the issuance of post-CP2 CERs, including with respect to voluntary use.

⁴ Annex B Parties to the Kyoto Protocol.

⁵ See appendix 1 to this note, listing relevant CMP decisions.

⁶ See Annex to decision 3/CMP.1, appendix D, paragraph 1.

⁷ For illustration, the additional period for fulfilling commitments under the first commitment period ended on 18 November 2015, nearly three years after the end of the first commitment period at the end of 2012.

⁸ The note also does not assess implications for the share of proceeds to assist developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation referred to in Article 12, paragraph 8, of the Kyoto Protocol and decision 17/CP.7, paragraph 15 (a).

⁹ CDM registry-related systems include the United Nations online platform for voluntary cancellation of CERs (also called the marketplace) and the CDM information system.

10. Furthermore, the Board agreed on temporary measures to be applied to, inter alia, the requests for issuance of CERs in respect to emission reductions occurring after the end of the second commitment period until the CMP provides guidance at CMP 16 (as referenced in paragraph 2 of this note). Therefore, the actual implementation of the technical options, although assessed as feasible and technically sound, may not proceed in the absence of the necessary legal underpinnings that only the CMP has the authority to provide.
11. Should the Board favour any of the technical options assessed in this note, the Board would need to consider if it wishes to make recommendations to the CMP.
12. To aid the understanding of the technical background for the options assessed in this note, relevant CMP decisions are referenced throughout the note, with the respective provisions summarized in appendix 1 for ease of reference.

2.3. Approach and criteria

13. The options in this note provide the minimum technical solutions as per the Board's request in paragraph 3 above, preserving flexibility for accommodating further/changing requirements. The options were developed with a view to leveraging existing technological solutions and operating procedures of the CDM registry,¹⁰ as much as possible, to ensure cost-effectiveness, data consistency and business continuity, including preserving the maintainability of the existing systems as well as the principle of backward compatibility.¹¹

3. Key issues and proposed solutions

3.1. Technical and regulatory background to the CDM registry operations

14. Per the decisions of the CMP, the CDM registry is one of two types of registries operating under the Kyoto Protocol for the recording and tracking of Kyoto units;¹² the other type is the national registries of Annex B Parties. Each registry operates and communicates data related to Kyoto units with other registries through a link established with the ITL¹³ put in place and administered by the secretariat under CMP guidance. The secretariat also acts as the CDM registry administrator under the authority of the CDM Executive Board.
15. The general design requirements for the "Technical standards for data exchange between registry systems under the Kyoto Protocol", also known as the data exchange standards

¹⁰ Including the CDM registry and related CDM information system and tools' design, data formats and conventions, and CDM registry-related procedures.

¹¹ Backward compatibility is a property of a system, product or technology that allows for interoperability with an older legacy system, or with input designed for such a system (source: Wikipedia).

¹² Information on the registry systems under the Kyoto Protocol is available at: <https://unfccc.int/process/the-kyoto-protocol/registry-systems>.

¹³ See the Annex to decision 24/CP.8, paragraph 18.

for registry systems under the Kyoto Protocol (DES),¹⁴ provide that the issuance and cancellation of CERs are transactions requiring the exchange of data.¹⁵ In other words, the issuance and cancellation of CERs undergo validation by the ITL. The ITL validates all registry transactions with Kyoto units,¹⁶ in real time, to ensure they are consistent with rules agreed under the Kyoto Protocol.¹⁷

16. The ITL validates every part of the CER transactions, including the serial number assigned to each CER at the time of its issuance. Each CER has a unique serial number comprising several elements including the commitment period for which the CER is issued.¹⁸ However, the CMP has not clarified if and how CERs for after the end of the second commitment period (the post-CP2 period) are to be issued, recorded and tracked.
17. In the context of the CDM registry operations, voluntary cancellation is understood to be the process of transferring CERs to a voluntary cancellation account according to the “Procedure: Voluntary cancellation of CERs in the CDM registry”.¹⁹ CERs transferred to a voluntary cancellation account may not be transferred further to any other account in any registry. Voluntary cancellation of CERs in the CDM registry is currently used by some project participants as a means of claiming the underlying emission reductions towards non-Kyoto compliance systems or purely for voluntary offsetting. Information on voluntary cancellation in the CDM registry, including on the purpose of use, is available in appendix 2 to this note.
18. Against this backdrop, the two key technical issues affecting the capability of the CDM registry to process the issuance of post-CP2 CERs for voluntary cancellation purposes are the commitment period identifiers required for the CER serial numbers and the ITL validation requirements for transactions of CERs. In addition to the assessment of the options to address these key technical issues, high-level assessment of implications for the accounting and reporting of post-CP2 CER information under the Kyoto Protocol is also included in this section.

3.2. Commitment period identifiers in the serial numbers of certified emissions reductions

19. In order to process the issuance of CERs, the CDM registry must generate the serial numbers of the CERs for the quantity of emission reduction or removals as per the issuance request approved by the Board. By way of example, the figure below shows

¹⁴ The DES were recommended by the Conference of the Parties to the CMP in decision 24/CP.8 and adopted by the CMP through decision 12/CMP.1, paragraph 2. The DES are published on the UNFCCC website: <https://unfccc.int/process/the-kyoto-protocol/registry-systems#:~:text=The%20ITL%20verifies%20registry%20transactions,infringe%20upon%20the%20Kyoto%20rules>.

¹⁵ See Annex to decision 24/CP.8, paragraph 2.

¹⁶ Registry transactions include: issuance, transfer and acquisition, cancellation, expiry, retirement, replacement, carry-over (see Annex to decision 13/CMP.1, paragraph 38).

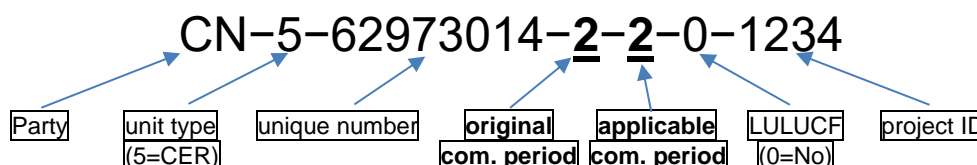
¹⁷ See Annex to decision 13/CMP.1, paragraphs 39 and 40.

¹⁸ See Annex to decision 3/CMP.1, appendix D, paragraph 7 on the CERs unique serial numbers.

¹⁹ The procedure for “Voluntary cancellation of CERs in the CDM registry” is available at: <https://cdm.unfccc.int/Reference/Procedures/index.html>.

the identifiers required as per the DES to construct a serial number for the recording and unique identification of a CER.

Figure. Certified emission reduction serial number as composed by information identifiers



Acronyms:

LULUCF - Land use, land-use change and forestry

Project ID – CDM project (activity) identification (number)

20. The DES prescribes the possible values for each commitment period identifier. The CMP has not provided guidance on the period after the second commitment period, nor has it provided guidance on what value(s) are to be used for the “original” and “applicable” commitment period identifiers in the serial number of CERs related to emission reductions occurring after the end of the second commitment period.²⁰
21. The “original” and the “applicable” commitment period identifiers carry temporal information relevant to the accounting for the Kyoto Protocol’s compliance targets of Annex B Parties. Specifically, the “applicable” commitment period identifier corresponds to the period for which a Kyoto Protocol unit (including a CER) can be used for compliance. As per current rules, at the point of issuance of a unit, the two identifiers acquire the same value.²¹ The “applicable” commitment period identifier can be changed when a unit is carried over from one commitment period to the next.²² At present, the carry-over process is only enabled in national registries of Annex B Parties and not in the CDM registry.²³
22. From the information systems stability point of view, the simplest and most conservative approach to enabling the issuance of post-CP2 CERs for voluntary cancellation purposes would be to assign a new identical value to be used for the original and applicable commitment period identifiers at the time of issuance of such CERs. This would ensure that post-CP2 CERs are clearly distinguishable from CERs issued for the two Kyoto Protocol commitment periods and would enable the application of specific accounting and reporting rules to transactions with and holdings of post-CP2 CERs.

²⁰ The rules for other serial number identifiers (not related to the commitment period) could logically continue to apply without further guidance. It should be noted that, so far, the CMP has not been providing guidance on the specific values for the commitment period identifiers. Rather, those values were assigned through the DES (agreed by the registry systems administrators and the ITL administrator) on the basis of the CMP decisions on Kyoto Protocol commitment periods.

²¹ See DES response code 5006.

²² Defined as “carry-over” as per decision 13/CMP.1.

²³ The requirement in paragraph 4 in appendix A to decision 10/CMP.7 “Modalities and procedures for carbon dioxide capture and storage in geological formations as clean development mechanism project activities” for the carry-over of CERs held in reserve accounts for carbon dioxide capture and storage activities is not yet implemented in the CDM registry as there are no CDM activities applying for registration as per these modalities and procedures.

23. In this context, the following questions are relevant:
- (a) *Issue 1: Which specific value should be assigned?* Any value other than “1” or “2” could be used (as these two values already have specific meaning with respect to existing CERs), for example:
 - (i) **Option 1.1:** The sequential value of “3”, which would have the logic of reflecting the next available period;
 - (ii) **Option 1.2:** A non-sequential value, such as “0”, “9” or “99”, could be used to signify that a CER does not correspond to a specific Kyoto Protocol commitment period;
 - (b) *Issue 2: For what length of time would any new value apply?* The value of “1” is applied to emission reductions²⁴ that occurred during, and were valid for, Kyoto Protocol compliance obligations in the first commitment period²⁵ (2008–2012). The value of “2” is applied to emission reductions that occurred, and are valid for, Kyoto Protocol compliance obligations in the second commitment period (2013–2020). Therefore, the new value may apply, either:
 - (i) **Option 2.1:** Indefinitely with respect to all post-CP2 CERs; or
 - (ii) **Option 2.2:** For a specific length of time (for example one, three or five years or longer, namely 2021; 2021–2023; 2021–2025; etc.), with incremental values being applied for each subsequent period.
24. The choice of a value as per issue 1 would be arbitrary and may be informed by how the post-CP2 period may be defined. The value of “0” would logically signify that the CER is not relevant to a specific commitment period.²⁶ Any other value that does not correspond to a commitment period would essentially re-purpose the identifier and would require its meaning to be clarified, for example as per the options for issue 2.
25. With respect to issue 2, option 2.2 would have implications for the reporting of monitoring results in the monitoring reports that project participants submit as part of their issuance requests, similar to the implications from the transition between the first and second commitment periods of the Kyoto Protocol. Specifically, the monitoring results for each length of time would have to be reported distinctly to enable the appropriate tagging of CERs.
26. Furthermore, the two commitment period identifiers may be re-purposed for different information needs with values determined, clarified and assigned accordingly. However, in the context of the existing approach to assigning the same value for the original and applicable commitment period identifiers at the issuance of CERs and the narrow scope of the Board’s request as per paragraph 3 above, as well as with the view to preserving flexibility with respect to accommodating possible emerging and changing requirements,

²⁴ Or removals.

²⁵ According to decision 7/CMP.1, paragraph 4, emission reductions and removals could be generated from as early as year 2000 and be issued for the first commitment period.

²⁶ Similarly, if the land use, land-use change and forestry (LULUCF) identifier acquires a value of “0” (see figure 1) it denotes that the CER is not issued for a LULUCF removal.

assigning the value of “0” to the two commitment period identifiers appears to be the conservative approach of choice.

3.3. Segregation in the communication of transactions for validation by the international transaction log

27. Upon clarifying the approach for the value(s) to be used for the commitment period identifiers in the serial numbers of CERs, the CDM registry’s transaction flows could be modified accordingly to enable the CDM registry to generate the serial numbers of post-CP2 CERs and prepare the corresponding issuance transactions for validation (internal or external). Upon successful validation and completion of the issuance transactions, the post-CP2 CERs would come into existence in the pending account of the CDM registry and would be tracked according to their serial numbers.
28. As per the current CMP decisions, the CDM registry has to propose all transactions of CERs for validation by the ITL before their completion.²⁷ However, transactions of CERs that involve serial numbers that do not conform with the DES would fail the ITL validation checks, unless the DES are revised first and the registry systems under the Kyoto Protocol, including the ITL, are modified to conform with the revised DES.
29. As a revision of the DES is not in the purview of the Board, this note considers the technical option of completing CDM registry transactions with respect to post-CP2 CERs without ITL validation. The CDM registry would, as required by the CMP decisions, maintain its connectivity to the ITL and continue to conform to the DES in order to complete the transactions of CERs related to the first and second commitment periods of the Kyoto Protocol.
30. Enabling such a dual-operational mode of the CDM registry entails segregating the transactions of any post-CP2 CERs from the ITL, as those transactions would not be validated by the ITL before completion. The value(s) to be used for the commitment period identifiers in CER serial numbers, as per the options assessed in section 3.2 above, could permit logical segregation of data on post-CP2 CERs from the data on CERs for the first and second commitment periods.
31. The CDM registry is technically capable of completing internal transactions without external ITL validation, and its built-in transaction rules and accounting ledgers are designed to maintain detailed audit logs and full traceability of data. From the data management point of view, the primary objective of validation by the ITL is to maintain data consistency across registry systems. Therefore, only a limited number of business rules would need to be added to the CDM registry in order for it to operate as a stand-alone registry with respect to the issuance of post-CP2 CERs for voluntary cancellation purposes, without introducing risks to the integrity of the CDM registry data. For example, rules should be added to prevent external forwarding of post-CP2 CERs and to prevent post-CP2 CERs and CERs issued for a commitment period to be included in the same transaction.
32. Continued utilization of the CDM registry with segregated ITL communication would require modifications across three integrated systems, namely the CDM registry, the

²⁷ See Annex to decision 13/CMP. 1, paragraphs 39 and 40.

United Nations online platform for voluntary cancellation of CERs (also referred to as the marketplace) and the CDM information system. The effort required to implement the technical modifications is estimated to be low to moderate for all three systems. Additional information on the technical implications for the CDM registry is provided in appendix 3 to this note.

3.4. Accounting and reporting implications

33. This subsection identifies issues relevant to the technical options set out in this note that the Board may wish to consider or explore further.

3.4.1. Reporting formats

34. The decoupling of post-CP2 CERs from the Kyoto Protocol commitment period accounting rules would require modifications to the reporting practice of the CDM registry. Relevant reporting formats would require adjustments in content and format to incorporate information on post-CP2 CERs, or a dedicated reporting set for post-CP2 CERs could be developed. As all required data would be available in the CDM registry and related systems, the effort to make such adjustments is estimated to be low to moderate, similar to when the Kyoto Protocol's second commitment period was introduced in the reporting practice of the CDM registry.

3.4.2. Strengthening reporting on voluntary uses

35. In this context, it may also be relevant to strengthen the requirements for recording and tracking information on voluntary uses. Requesting information about the purpose of each voluntary cancellation transaction in a systematic and structured way would enhance the transparency of data on post-CP2 CERs. For example, this could include making the provision of information on the purpose of each voluntary cancellation transaction mandatory (as opposed to optional, as it currently is) and/or by providing standard categories for the purpose of the voluntary cancellation transactions to enable improved data analysis and reporting.
36. In combination with, or as an alternative to, providing standard categories for the purpose of voluntary uses at transaction-description level, the CDM registry could be required to maintain multiple voluntary cancellation accounts for the post-CP2 period, each relating to a specific voluntary use. Appendix 2 to this note provides information on the use of voluntary cancellation in the CDM registry. An example classification for voluntary use/purpose is shown in figure 2 of appendix 2 on the basis of transaction descriptions provided by project participants. Allocating a voluntary cancellation account to a particular voluntary use/purpose could have the advantage of more efficient information analysis in comparison to analysing information from individual transactions.

3.4.3. Additional metadata

37. The CDM registry and related CDM information system and tools could be modified to record, track and display various metadata²⁸ relevant to CERs in conjunction with their serial numbers.

²⁸ Metadata is "data that provides information about other data" (source: Wikipedia).

38. In relation to handling temporal information for post-CP2 CERs, some of the options presented in section 3.2 would be inferior to the commitment period approach as those options would not be linked to a defined period of time (for example, if a value of “0” or another value denoting the entire post-CP2 period is assigned in lieu of the commitment period identifiers). To address this aspect, metadata on the monitoring periods associated with post-CP2 CERs may be supplemented more systematically in relevant places, such as in public reports and attestations of voluntary cancellations issued as per the “Procedure: Voluntary cancellation of CERs in the CDM registry” and/or listings on the United Nations online platform for voluntary cancellation of CERs.²⁹
39. Limiting the issuance of post-CP2 CERs to voluntary cancellation purposes would be important information for market participants to make their decisions. In this regard, it may be helpful if the CDM registry enables the easy identification of this limitation by labelling post-CP2 CERs as issued for voluntary use (for as long as such limitation applies).

3.5. How the technical options identified could be implemented

3.5.1. Functional and technical specifications

40. With respect to implementation, the technical options assessed in this note need to be translated into a cohesive set of functional and technical specifications that do not conflict with the requirements of relevant CMP decisions. To describe how the implementation approach could work, the following minimum specifications are defined, noting that this is only one of several possible sets of specifications in relation to the technical options assessed in this concept note:
- (a) The value used for the original and applicable commitment period identifiers in the serial numbers of post-CP2 CERs is set at “0”;
 - (b) One voluntary cancellation account for the post-CP2 period is set-up in the CDM registry;
 - (c) The issuance and voluntary cancellation transactions of post-CP2 CERs is completed in the CDM registry without ITL validation through segregation in the communication of transactions for validation by the ITL on the basis of the serial numbers of CERs;
 - (d) Post-CP2 CERs cannot be forwarded externally (to national registries of Annex B Parties);
 - (e) Post-CP2 CERs and CERs issued for a commitment period cannot be included in the same transaction;
 - (f) Transactions of CERs for the first and the second commitment periods are validated by the ITL;

²⁹ Information on the monitoring periods could also be displayed in relation to any CERs that would be transferred to a voluntary cancellation account in the CDM registry (after the decision on adding such information is made), including in relation to CERs issued for the first and the second commitment periods.

- (g) The CDM registry reporting reflects information on post-CP2 CERs.

3.5.2. Enabling conditions

41. A pre-condition for the issuance of CERs is the approval of an issuance request by the Board, which serves as an instruction to the CDM registry administrator to issue CERs.³⁰ In accordance with the temporary measures agreed by the Board at EB 108 and as clarified with regard to its impact on the regulatory provisions at EB 109, the process for issuing post-CP2 CERs stops after the completion of the analysis of the relevant requests for issuance. If the conclusion of the analysis of such requests for issuance is positive, the requests are marked as provisional, awaiting guidance from the CMP at CMP 16.
42. Therefore, this enabling condition for the issuance of post-CP2 CERs by the CDM registry for voluntary cancellation purposes is currently not fulfilled. The implication of this is that any work that may be carried out with respect to any functional and technical specifications, as may be agreed by the Board, may not be implemented before the approval of issuance requests for the post-CP2 period could be finalized.
43. Furthermore, the secretariat has previously advised the Board that it is within the authority of the CMP to provide guidance on matters such as the composition of the serial numbers of CERs and the process for validating transactions of CERs. It is also recognized that while the CMP may delegate such matters to the Board, an explicit decision(s) in this regard is (are) first required.

3.5.3. Development, testing and roll-out

44. Once the functional and technical specifications are completed and the enabling conditions met, the CDM registry administrator, under the guidance of the Board, would carry out the necessary software development, testing and roll-out work across the impacted systems (see para. 9 above) in accordance with the operational standards of the secretariat and the contractual arrangements with external service providers.
45. To exemplify the software development work to be carried out with respect to the specifications referred to in paragraph 40 above, the CDM registry and related systems' validation rules would be modified, among other things, to accept a "0" for the original and applicable commitment period identifiers of post-CP2 CERs, metadata definitions would be coded-in with the respective display values, and business rules would be implemented so that post-CP2 CERs could not be forwarded externally.
46. High-level assessment of the timelines and the cost of implementation of a set of requirements as per paragraph 40 above are provided in section 5 below.

4. Impacts

47. The technical options with regard to the CDM registry in order to enable issuance of post-CP2 CERs for voluntary cancellation purposes may have impacts on various stakeholders. To develop a better understanding of such potential impacts, the Board may wish to consider using the opportunity of the biannual survey on the status of CDM activities to obtain stakeholder input.

³⁰ See Annex to decision 3/CMP.1, paragraph 66.

5. Subsequent work and timelines

48. If the CMP provides guidance that enables the issuance of post-CP2 CERs for voluntary cancellation in the CDM registry, related work would be undertaken by the CDM registry administrator, under the guidance of the Board, in the calendar year following the year when the CMP takes the relevant decision(s).³¹ Implementing the simplest technical options as outlined in this note would require about two to three months for software modifications from the time the work is scheduled³² (for information on the estimated effort required for the CDM registry modifications, see table 2 in appendix 3 to this note).
49. A high-level estimate of the software development costs across various systems amounts to up to USD 70,000, including for adjusting the reporting formats of the CDM registry. Adequate staff resources would be required to coordinate the work between multiple service providers³³ and to support roll-out activities. The secretariat staff effort to complete the work would be about four person-months.

6. Recommendations to the Board

50. It is recommended that the Board consider the information in this note. Overall, if the Board considers it would like to recommend to the CMP the issuance of post CP2 CERs for voluntary cancellation purposes, it could make the following supporting technical recommendations to the CMP to request the CDM registry administrator, acting under the guidance of the Board, to:
 - (a) Assign a value(s) (as per the options in section 3.2) to be used for the commitment period identifiers in the post-CP2 CER serial numbers;
 - (b) Process transactions of post-CP2 CERs in the CDM registry without validation by the ITL;
 - (c) Publish, including as part of the annual report of the Board to the CMP, non-confidential information on post-CP2 CERs;
 - (d) Ensure that the CDM registry conforms to the DES with the exception of the standards related to value(s) to be used for the commitment period identifiers in the serial number of post-CP2 CERs and validation of transactions of post-CP2 CERs by the ITL;
 - (e) Alternatively to (a) above, the Board could recommend to the CMP to consider if it would be relevant to request the Board to provide for the value(s) to be used for the commitment period identifiers in the serial number of post-CP2 CERs issued for voluntary cancellation purposes in the CDM registry, taking into account any guidance the CMP may wish to provide in that regard.

³¹ If CMP decision-making continues to follow its current pattern (decisions are taken close to calendar year-end).

³² Scheduling depends on various aspects such as adoption of regulations, service provider agreements, etc.

³³ The CDM registry, the CDM information system and the marketplace are implemented by different service providers.

51. The Board may wish to consider providing guidance on any further work that the Board may wish the secretariat to carry out in relation to the post-CP2 period, such as:
- (a) Mock-up testing of technical options;
 - (b) Further technical assessment of options for recording, tracking and displaying metadata related to the serial numbers of CERs, such as in relation to monitoring periods and permissible use (i.e. voluntary cancellation);
 - (c) Analysis of the procedure for “Voluntary cancellation of CERs in the CDM registry” with a view of recommending revisions in line with the technical options assessed in this note.

Appendix 1. Decisions related to the CDM registry and the ITL

Decision	Decision title	Decision text
19/CP.7, Para 1	Modalities for the accounting of assigned amounts under Article 7, paragraph 4, of the Kyoto Protocol	1. Requests the Subsidiary Body for Scientific and Technical Advice to develop technical standards for the purpose of ensuring the accurate, transparent and efficient exchange of data between national registries, the clean development mechanism registry and the transaction log, based on the annex to the decision below, with a view to recommending to the Conference of the Parties, at its eighth session, a decision on this matter, for adoption by the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol at its first session, to facilitate the early development and establishment of national registries, as well as of the clean development mechanism registry and transaction log;
24/CP.8, Para 1	Technical standards for data exchange between registry systems under the Kyoto Protocol	1. Recommends that the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol, at its first session, adopt the general design requirements for the technical standards for data exchange between registry systems ¹ under the Kyoto Protocol, as contained in the annex to this decision; Foot note 1: National registries, the clean development mechanism registry and the transaction log
24/CP.8, Para 2	Technical standards for data exchange between registry systems under the Kyoto Protocol	2. Requests the secretariat, in its development of the transaction log, to undertake work relating to the functional and technical specifications of the technical standards during 2003, subject to the availability of resources, with a view to completing the technical specification prior to the ninth session of the Conference of the Parties and completing the implementation and testing of the transaction log by the tenth session of the Conference of the Parties
24/CP.8, Annex Para 2	Technical standards for data exchange between registry systems under the Kyoto Protocol	2. Transactions requiring the exchange of data between registry systems are the issuance, transfer and acquisition between registries, cancellation, retirement and carry-over, as appropriate, of assigned amount units (AAUs), certified emission reductions (CERs), emission reduction units (ERUs) and removal units (RMUs) (referred to below as "units").
24/CP.8, Annex Para 14	Technical standards for data exchange between registry systems under the Kyoto Protocol	14. Each unique serial number assigned by a registry to a unit shall consist of at least the elements contained in table 2 ³ , in accordance with formats and codes to be developed.

Decision	Decision title	Decision text																					
		<p>Table 2 Elements of serial numbers</p> <table> <tr> <th><i>Element</i></th><th><i>AAU</i></th><th><i>RMU</i></th></tr> <tr> <td>Originating Party identifier</td><td>Yes</td><td>yes</td></tr> <tr> <td>Issuance commitment period</td><td>Yes</td><td>yes</td></tr> <tr> <td>Unit type</td><td>Yes</td><td>yes</td></tr> <tr> <td>LULUCF activity</td><td>No</td><td>yes</td></tr> <tr> <td>Project identifier</td><td>No</td><td>no</td></tr> <tr> <td>Unique number</td><td>Yes</td><td>yes</td></tr> </table> <p>LULUCF: Land use, land-use change and forestry</p> <p>Foot note 3: The elements of this table are without prejudice to paragraph 15 of decision 24/CP.8.</p> <p><i>15. Requests the Subsidiary Body for Scientific and Technological Advice, at its twentieth session, to forward a draft decision to the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol recommending that it incorporates, in the annex to this decision, any elements needed to reflect decisions of the Conference of the Parties or of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol relating to definitions and modalities for including afforestation and reforestation project activities under Article 12 in the first commitment period.</i></p>	<i>Element</i>	<i>AAU</i>	<i>RMU</i>	Originating Party identifier	Yes	yes	Issuance commitment period	Yes	yes	Unit type	Yes	yes	LULUCF activity	No	yes	Project identifier	No	no	Unique number	Yes	yes
<i>Element</i>	<i>AAU</i>	<i>RMU</i>																					
Originating Party identifier	Yes	yes																					
Issuance commitment period	Yes	yes																					
Unit type	Yes	yes																					
LULUCF activity	No	yes																					
Project identifier	No	no																					
Unique number	Yes	yes																					
24/CP.8, Annex Para 14	Technical standards for data exchange between registry systems under the Kyoto Protocol	The interface between registry systems shall operate through a central communications hub integrated with the transaction log.																					
16/CP.10, Para 2	Issues relating to registry systems under Article 7, paragraph 4, of the Kyoto Protocol	2. Takes note that the general design requirements of the technical standards for data exchange between registry systems have been elaborated, in accordance with decision 24/CP.8, through the development of detailed functional and technical specifications																					
12/CMP.1, Para 2	Guidance relating to registry systems under Article 7, paragraph 4, of the Kyoto Protocol	2. Adopts the general design requirements for the technical standards for data exchange between registry systems under the Kyoto Protocol, as contained in the annex to decision 24/CP.8;																					
13/CMP.1, Annex, Para 38	Modalities for the accounting of assigned amounts under Article 7, paragraph 4, of the Kyoto Protocol	38. The secretariat shall establish and maintain an international transaction log to verify the validity of transactions, including issuance, transfer and acquisition between registries, cancellation and retirement of ERUs, CERs, AAUs and RMUs and the carry-over of ERUs, CERs and AAUs.																					

Decision	Decision title	Decision text
13/CMP.1, Annex, Para 39	Modalities for the accounting of assigned amounts under Article 7, paragraph 4, of the Kyoto Protocol D. Transaction procedures	39. A Party included in Annex I shall initiate issuance of AAUs or RMUs by directing its national registry to issue AAUs or RMUs into a specific account within that registry. The Executive Board of the CDM shall initiate issuance of CERs by directing the CDM registry to issue CERs into its pending account in accordance with the requirements in Article 12 and requirements thereunder, as well as the relevant provisions in the annex to decision 3/CMP.1. A Party included in Annex I shall initiate issuance of ERUs by directing its national registry to convert specified AAUs or RMUs into ERUs within an account of that national registry. Subject to notification by the transaction log that there are no discrepancies pertaining to the issuance, the issuance shall be completed when specific ERUs, CERs, AAUs or RMUs are recorded in the specified account and, in the case of ERUs, the specified AAUs or RMUs are removed from the account.
13/CMP.1, Annex, Para 40	Modalities for the accounting of assigned amounts under Article 7, paragraph 4, of the Kyoto Protocol D. Transaction procedures	40. A Party included in Annex I shall initiate any transfer of ERUs, CERs, AAUs or RMUs, including those to cancellation and retirement accounts, by directing its national registry to transfer specified ERUs, CERs, AAUs or RMUs to a specific account within that registry or another registry. The Executive Board of the CDM shall initiate any transfer of CERs held in the CDM registry by directing it to transfer specified CERs to a specific account within that registry or another registry. Subject to notification by the transaction log, where applicable, that there are no discrepancies pertaining to the transfer, the transfer shall be completed when the specified ERUs, CERs, AAUs or RMUs are removed from the transferring account and are recorded in the acquiring account.
13/CMP.1, Annex, Para 41	Modalities for the accounting of assigned amounts under Article 7, paragraph 4, of the Kyoto Protocol	41. Upon the initiation of any issuance, transfer between registries, cancellation or retirement of ERUs, CERs, AAUs or RMUs, and prior to the completion of those transactions: (a) The initiating registry shall create a unique transaction number comprising: the commitment period for which the transaction is proposed; the Party identifier for the Party initiating the transaction (using the two-letter country code defined by ISO 3166); and a number unique to that transaction for the commitment period and initiating Party; (b) The initiating registry shall send a record of the proposed transaction to the transaction log and, in the case of transfers to another registry, to the acquiring national registry. The record shall include: the transaction number; the transaction type (issuance, transfer, cancellation or retirement, further distinguished in accordance with the categories in paragraphs 11 and 12 above); the serial numbers of the relevant ERUs, CERs, AAUs or RMUs; and the relevant account numbers.
3/CMP.1, Annex, para 1 (b)	Modalities and procedures for a clean development mechanism as defined in Article	1. For the purposes of the present annex the definitions contained in Article 1 and the provisions of Article 14 shall apply. Furthermore: ... (b) A “certified emission reduction” or “CER” is a unit issued pursuant to Article 12 and requirements thereunder, as well as the relevant provisions in these modalities and procedures, and

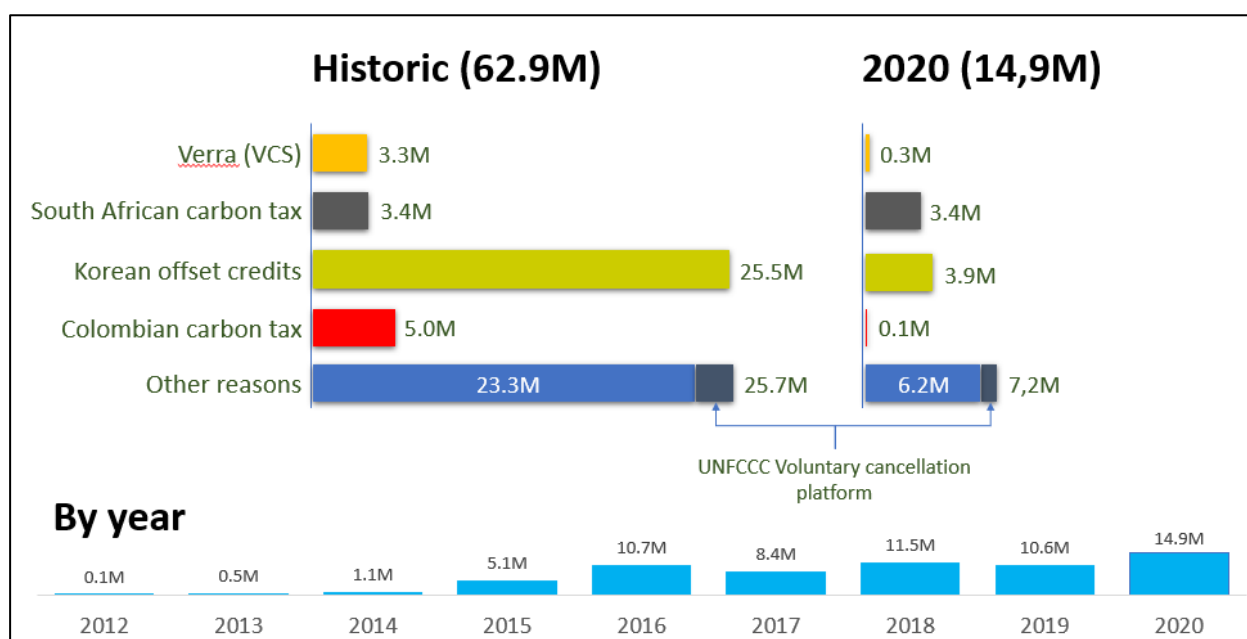
Decision	Decision title	Decision text
	12 of the Kyoto Protocol	is equal to one metric tonne of carbon dioxide equivalent, calculated using global warming potentials defined by decision 2/CP.3 or as subsequently revised in accordance with Article 5;
3/CMP.1, Annex, para 66	Modalities and procedures for a clean development mechanism as defined in Article 12 of the Kyoto Protocol	66. Upon being instructed by the Executive Board to issue CERs for a CDM project activity, the CDM registry administrator, working under the authority of the Executive Board, shall, promptly, issue the specified quantity of CERs into the pending account of the Executive Board in the CDM registry, in accordance with appendix D below. Upon such issuance, the CDM registry administrator shall promptly: (a) Forward the quantity of CERs corresponding to the share of proceeds to cover administrative expenses and to assist in meeting costs of adaptation, respectively, in accordance with Article 12, paragraph 8, to the appropriate accounts in the CDM registry for the management of the share of proceeds; (b) Forward the remaining CERs to the registry accounts of Parties and project participants involved, in accordance with their request.
3/CMP.1, App. D, Para 1	Modalities and procedures for a clean development mechanism as defined in Article 12 of the Kyoto Protocol	1. The Executive Board shall establish and maintain a CDM registry to ensure the accurate accounting of issuance, holding, transfer and acquisition of CERs by Parties not included in Annex I. The Executive Board shall identify a registry administrator to maintain the registry under its authority.
3/CMP.1, App. D, Para 2	Modalities and procedures for a clean development mechanism as defined in Article 12 of the Kyoto Protocol	2. The CDM registry shall be in the form of a standardized electronic database which contains, inter alia, common data elements relevant to the issuance, holding, transfer and acquisition of CERs. The structure and data formats of the CDM registry shall conform to technical standards to be adopted by the COP/MOP for the purpose of ensuring the accurate, transparent and efficient exchange of data between national registries, the CDM registry and the international transaction log.
3/CMP.1, App. D, Para 7	Modalities and procedures for a clean development mechanism as defined in Article 12 of the Kyoto Protocol	7. Each CER shall have a unique serial number comprising the following elements: (a) Commitment period: the commitment period for which the CER is issued (b) Party of origin: the Party which hosted the CDM project activity, using the two-letter country code defined by ISO 3166 (c) Type: this shall identify the unit as a CER (d) Unit: a number unique to the CER for the identified commitment period and Party of origin (e) Project identifier: a number unique to the CDM project activity for the Party of origin.
8/CMP.7, Para 28	Further guidance relating to the clean development mechanism	28. Requests the administrator of the clean development mechanism registry to provide for accounts in the registry to allow for the cancellation of units for administrative and other purposes;

Decision	Decision title	Decision text
5/CMP.8, Para 26	Guidance relating to the clean development mechanism	26. Welcomes the implementation by the Executive Board and the secretariat, following the request contained in decision 8/CMP.7, of procedures for the voluntary cancellation of certified emission reductions in the clean development mechanism registry;

Appendix 2. Information on the use of voluntary cancellation in the CDM registry

1. By the end of 2020, over 63 million CERs¹ were voluntarily cancelled in the CDM registry. Figure 2 shows voluntary cancellation of CERs in the CDM registry by purpose, with a breakdown between historic and year 2020.² Voluntary cancellation volumes by year since the introduction of voluntary cancellation in the CDM registry in 2012 are also included.
2. In figure 2, the category “Other reasons” includes reasons that are related to actions by individual or corporate citizens towards offsetting carbon footprint (their own or of third parties), voluntary or results-based financial contributions towards CDM activities, domestic compliance schemes other than those shown in the figure (such as the European Union’s Fuel Quality Directive), among other reasons.

Figure 1. Voluntary cancellation in the CDM registry by reason/purpose³



¹ CERs represent all CDM unit types, namely CERs, tCERs and ICERs; the latter two are issued for afforestation and reforestation activities with non-permanence implications.

² The categorization of voluntary cancellation transactions in the CDM registry relies on descriptive fields and is, therefore, an approximation of the actual results.

³ Verified Carbon Standard, Verra or VCS (formerly the Voluntary Carbon Standard) is a standard for certifying carbon emission reductions: <https://verra.org/about-verra/who-we-are/>

Appendix 3. Technological impact assessment for the CDM registry

Table 1. Additional details and assumptions to the changes that would be required for the CDM registry to enable issuance of CERs with respect to emission reductions occurring after the end of the second commitment period for voluntary cancellation purposes

Feature	Change description
Access and user roles	No change.
Accounts	New accounts are created where the accounts are CP (commitment period)-specific, as is the current pattern for certain account types (e.g. Voluntary Cancellation Account CP1, Voluntary Cancellation Account CP2, Voluntary Cancellation Account post-CP2).
Account types	No change.
Approvals	No change.
CP1 and CP2 functions	Regression testing will ensure no change to processes and procedures for CP1 and CP2 data.
CP data structure	No change. The system is already designed to function with multiple CP values. We assume the new period format follows the same structure as existing commitment periods. New metadata fields could be added, if necessary, for tracking purposes.
DES adherence	CDM registry continues to follow DES patterns and rules even when not connected to the ITL. This ensures reliability and accounting of the data set. However, some post-CP2 actions are not constrained specifically by the DES. The most notable difference would be use of a CP not recognized by the ITL.
Hosting	No change.
Marketplace¹	No change. The marketplace will continue to interact with post-CP2 CER inventories and facilitate voluntary cancellation of those inventories.
Projects	No change.
Reporting	Reporting needs will be accommodated through configuration. Expansive reporting structures can be reused, or new reports can be designed. Datasets can be easily separated by associated CP and other metadata.
Reconciliation	Post-CP2 data are separated and not included in CP1/CP2 reconciliation data by virtue of CP metadata.

¹ The UN online platform for the voluntary cancellation of CERs: <https://offset.climateneutralnow.org/>.

Feature	Change description
Transactions	Transaction flows with post-CP2 data do not result in communication with the ITL as per existing transaction pathways. The existing CDM registry software could distinguish and separate transaction communication with the ITL. Transactions associated with the two commitment periods are required to continue to be communicated with the ITL as per the CMP accounting rules and the existing procedures, while transactions associated with the period beyond the second commitment period would be completed without the ITL.
Unit types	No change.

Table 2. Level of effort to accommodate and test new features required for the CDM registry to enable issuance of CERs with respect to emission reductions occurring after the end of the second commitment period for voluntary cancellation purposes

Feature	Effort level
Addition of new CP value(s)	Trivial
Segregation of ITL data flows based on CP value	Low to Moderate
Regression testing of system transactions with various CP values	Low to Moderate

- - - - -

Document information

Version	Date	Description
01.0	3 May 2021	Published as an annex to the annotated agenda of EB 110.
Decision Class: Operational		
Document Type: Information note		
Business Function: Issuance		
Keywords: CERs, CDM post-2020, issuance of CERs, post-CP2 CERs, registries, voluntary cancellation		