



17 October 2022

**Matters relating to the clean development mechanism  
registry referred to in paragraph 75(b) of the annex to  
decision 3/CMA.3**

**Technical and process-related aspects for the CDM registry in relation  
to the transfer of eligible CERs to the Article 6.4 Mechanism registry**

## Contents

	<i>Page</i>
I. Introduction.....	3
A. Mandate.....	3
B. Scope and approach.....	3
II. Overview of the CDM registry .....	4
A. General information on the CDM registry .....	4
B. CDM registry components relevant to supporting transfers as per decision 3/CMA.3, annex, paragraph 7 .....	6
III. Key issues .....	7
A. Technical assessment of options for effecting the transfers of certified emission reductions from the CDM registry to the mechanism registry.....	7
B. Implications of the transfer process for the CDM registry .....	12
C. Sequence of processes involved in transferring eligible CERs, without prejudging what would be required for the transfers to be completed.....	12
IV. Information on eligible certified emission reductions held in the CDM registry, aggregated by Party.... .....	14
V. Proposed solution.....	14
 Annexes	
I. CDM registry transaction flow, including transfer of eligible certified emission reductions to the Article 6.4 mechanism registry.....	15
II. Certified emission reductions held in the CDM registry, aggregated by host Party.....	16

## I. Introduction

### A. Mandate

1. The Subsidiary Body for Implementation (SBI), at its fifty-sixth session (SBI 56), requested the secretariat to prepare a technical paper with the aim of furthering Parties' understanding of the technical and process-related aspects for transfers of eligible certified emission reductions (CERs) from the clean development mechanism (CDM) registry to the Article 6, paragraph 4, mechanism (Article 6.4 mechanism) registry (hereinafter referred to as the mechanism registry) in accordance with paragraph 75(b) of the annex to decision 3/CMA.3, focusing on the implications for the CDM registry, for consideration at SBI 57 (November 2022).<sup>1</sup> The SBI requested the following to be included in the technical paper:

(a) An overview of the CDM registry, in particular functions, pending account and holding accounts;

(b) Technical assessment of options for effecting the transfers in a manner that ensures reconciliation of the data on transfers in the CDM registry and in the Article 6.4 mechanism registry;

(c) Implications, including in relation to cost, of the transfer process for the CDM registry, including its ongoing maintenance to support the issuance and transfer of eligible CERs;

(d) The sequence of processes involved in transferring eligible CERs, without prejudging what would be required for the transfers to be completed;

(e) Aggregated information by Party on eligible CERs held in the CDM registry.

2. This technical paper has been prepared for consideration by the SBI at its fifty-seventh meeting, to be held in November 2022.<sup>2</sup>

### B. Scope and approach

3. This paper focuses on the technical and process-related aspects for transfers of eligible CERs from the CDM registry to the mechanism registry. Possible arrangements for transfers of eligible CERs not held in the CDM registry would require separate assessment and an appropriate mandate. Under the current technical and procedural arrangements, CERs transferred out of the CDM registry cannot be transferred back to the CDM registry. Furthermore, holders of CERs in Kyoto Protocol national registries<sup>3</sup> do not have access to the CDM registry, whose operations are limited to holding accounts for non-Annex I Parties<sup>4</sup> and their authorized entities.

4. This paper does not elaborate the process for the opening and maintaining of accounts in the mechanism registry nor does it elaborate the process for the recreation of units in the mechanism registry and the unit allocation to specific accounts.

---

<sup>1</sup> See document FCCC/SBI/2022/L.12.

<sup>2</sup> In paragraph 9 of decision 2/CMP.16, the CMP requested the SBI to consider measures to implement aspects relating to the CDM registry in decision 3/CMA.3 and to develop recommendations for consideration by the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol at its seventeenth session (November 2022). This request contains a footnote clarifying that the request relates to the transfer of CERs from the CDM registry to the mechanism registry.

<sup>3</sup> See information on registry systems under the Kyoto Protocol at <https://unfccc.int/process/the-kyoto-protocol/registry-systems>.

<sup>4</sup> Parties not included in Annex I to the Convention

5. This paper should be read in conjunction with the technical papers on the operations of the mechanism registry and on the use of CERs towards first nationally determined contributions.<sup>5</sup>
6. The SBI may wish to consider the information contained in this technical paper.

## II. Overview of the CDM registry

### A. General information on the CDM registry

7. The Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP), at its first session, held in Montreal, Canada, from 28 November to 10 December 2005, decided that the Executive Board of the CDM (hereinafter referred to also as the Board) shall establish and maintain the CDM registry according to the requirements set out in decision 3/CMP.1, annex, appendix D.<sup>6</sup>
8. These requirements specify that the CDM registry is to be in the form of a standardized electronic database that ensures the accurate accounting of the issuance, holding, transfer and acquisition of CERs. In order to do so, decision 3/CMP.1, annex, appendix D provides guidance on the different account types to be made available in the CDM registry,<sup>7</sup> provisions for unique serial numbers, conditions for the forwarding<sup>8</sup> of CERs, and publicly available information about the operations of the CDM registry. Cancellations in relation to afforestation and reforestation project activities under the CDM were established and operate as per the provisions of the annex to decision 5/CMP.1 and its appendix A.
9. The CDM registry continues to operate and maintain CERs according to its founding requirements. Further requirements for accounts in the CDM registry were established in decision 8/CMP.7 in relation to accounts allowing for the cancellation of units for administrative and other purposes<sup>9</sup> and decision 10/CMP.7 for reserve accounts and cancellation accounts in relation to carbon dioxide capture and storage in geological formations as CDM project activities.<sup>10</sup>
10. The CDM registry currently supports the following accounts:
  - (a) Pending account for the CDM Executive Board into which CERs are issued before being transferred to other accounts;
  - (b) Permanent holding accounts (PHAs) requested by each non-Annex I Party hosting a CDM project activity or by an entity authorized by such a Party;
  - (c) Account held by the Adaptation Fund for the purpose of holding and transferring CERs corresponding to the share of proceeds (SOP) to assist in meeting costs of

---

<sup>5</sup> The technical papers are available at <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement/cooperative-implementation/article-62-article-64-and-article-68-technical-papers-and-virtual-workshops-september-2022>.

<sup>6</sup> See document FCCC/KP/CMP/2005/8/Add.1.

<sup>7</sup> Accounts for holding and transferring CERs corresponding to the share of proceeds to cover administrative expenses were not operationalized due to a subsequent decision by the CMP to charge this share of proceeds as a monetary levy.

<sup>8</sup> While the 'forwarding' of CERs as per decision 3/CMP.1, annex, paragraph 66 and as per decision 3/CMP.1, annex, Appendix D, paragraph 6 has not been defined, in the practice of the CDM registry, forwarding is understood to be the transfer of CERs from the pending account of the CDM registry to the accounts of project participants and Parties involved in the activity where the CERs originate. Sometimes, forwarding and transfer are used interchangeably, including in decisions.

<sup>9</sup> Voluntary cancellation accounts were established in the CDM registry on the basis of decision 8/CMP.7.

<sup>10</sup> Accounts in relation to carbon capture and storage have not been implemented as no carbon capture and storage activities have been registered under the CDM.

adaptation in accordance with Article 12, paragraph 8, of the Kyoto Protocol (SOP AF account). The SOP AF account is set up as a PHA type;

(d) Account for the purpose of cancelling eligible Kyoto Protocol units equal to excess CERs issued, as determined by the Board, where the accreditation of a designated operational entity has been withdrawn or suspended;<sup>11</sup>

(e) Voluntary cancellation accounts to hold CERs transferred from the pending account, the SOP AF account or a PHA within the CDM registry;

(f) Mandatory cancellation accounts to hold CERs transferred from the pending account, the SOP AF account or a PHA based on instructions or notifications in relation to reversal of storage;

(g) Administrative cancellation accounts to hold CERs transferred from the pending account, the SOP AF account or a PHA based on administrative decisions.

11. No further transfers are possible from the different cancellation accounts of the CDM registry.

12. The CDM registry supports the following transactions:

(a) Issuance: creation of CERs in the pending account of the CDM registry based on instructions from the Board.<sup>12</sup> Under the current model, issuance instructions are generated by the CDM information system (CDM IS)<sup>13</sup> and are automatically sent to the CDM registry upon confirmation of an issuance request by the Board;

(b) Transfer of SOP for adaptation: upon issuance, a transfer from the pending account to the SOP AF account of two per cent of the issued CERs to assist in meeting costs of adaptation;

(c) Forwarding of CERs: transfer from the pending account or from a PHA to a PHA or to an external holding account of the host Party or project participants registered for the CDM activity that has generated the CERs based on requests of focal points or account holders;<sup>14</sup>

(d) Voluntary cancellation: transfer from the pending account, the SOP AF account or a PHA to a voluntary cancellation account within the CDM registry based on requests of focal points or account holders;

(e) Mandatory cancellation: transfer from the pending account, the SOP AF account or a PHA to a mandatory cancellation account within the CDM registry based on instructions or notifications in relation to the reversal of storage;

(f) Administrative cancellation: transfer from the pending account, the SOP AF account or a PHA to an administrative cancellation account within the CDM registry based on administrative decisions.<sup>15</sup>

13. The CDM registry supports flexible report generation to meet current reporting requirements and has the ability to easily configure and scale up reporting for new reporting needs. The CDM registry's operations also include the maintenance of data records, performance of functions in support of its core operations, reconciliation procedures, and adherence to data security standards.

<sup>11</sup> A cancellation account in relation to excess issuance as per decision 3/CMP.1 (annex, paragraph 22, and appendix D, paragraph 3(c)) has been set up. However, the corresponding procedure has not been operationalized by the Board.

<sup>12</sup> See decision 3/CMP.1, annex, paragraph 66.

<sup>13</sup> The CDM IS maintains all records relevant to CDM activities.

<sup>14</sup> This is a key limitation in the operations of the CDM registry, which does not enable transfers of CERs to accounts of entities or Parties that are not involved in the CDM activity that generates the CERs.

<sup>15</sup> Administrative cancellation has been effected in relation to the erroneous issuance of long-term CERs to enable the correct issuance of temporary CERs.

14. The CDM registry is currently connected to other internal and external systems through secure web services in order to communicate key information impacting the registry. This includes (i) the CDM IS for project information and transaction instructions; (ii) the international transaction log (ITL)<sup>16</sup> for verification and reconciliation of internal transactions and external transactions with the Kyoto Protocol national registries; and (iii) the United Nations online platform for voluntary cancellation of CERs (also known as the United Nations Carbon Offset Platform), which is a CDM registry service for the public.

15. The CDM registry is currently operated in a limited access security model with access limited to secretariat staff. This was a result of a security breach on the CDM registry during the Kyoto Protocol's first commitment period, which was intercepted and countered owing to the CDM registry operational procedures. The security breach revealed vulnerabilities for which proposed solutions were weighed against switching to the limited access security model. The limited access security model was preferred based on a combination of costs savings and usability grounds. The majority of transfers in the CDM registry are initiated from the pending account of the CDM registry. For such transfers, project participants have access to an external interface connected to the CDM registry, which operates to date.

16. Detailed provisions for the operations of the CDM registry, including in relation to account opening and maintenance, have been elaborated by the Board over time and are included in several CDM procedures and other Board documents.

17. For an overview of the CDM registry operations, see the diagram included in annex I to this paper.

## **B. CDM registry components relevant to supporting transfers as per decision 3/CMA.3, annex, paragraph 75**

18. Account types relevant to the transfers of eligible CERs to the mechanism registry include:

(a) Pending account: This is the account where CERs, long-term CERs and temporary CERs are issued upon instruction by the Board and are held until they are forwarded to holding accounts of project participants or Parties or are cancelled. The forwarding and voluntary cancellation of CERs held in the pending account is requested by the focal point(s) as per the modalities of communication for the CDM activity. CERs held in the pending account may be requested for transfer to the mechanism registry;

(b) PHAs: These accounts hold CERs on behalf of the account holder, which may be either a non-Annex I Party or an entity authorized by a non-Annex I Party. In the case of PHAs for entities, each PHA is associated with the Party authorizing the participation of the entity in the CDM. The forwarding and voluntary cancellation of CERs held in a holding account can be requested by a representative of the account holder. CERs held in the PHAs may be requested for transfer to the mechanism registry;

(c) SOP AF account: This PHA, to which a levy of two per cent for adaptation is transferred for each issuance (except for CDM activities<sup>17</sup> hosted by least developed countries), is operated by the Trustee<sup>18</sup> to the Adaptation Fund. This account is not attached to a Party and may not otherwise acquire CERs. The forwarding and voluntary cancellation of CERs held in the SOP AF account can be requested by the Trustee of the Adaptation Fund. CERs held in the SOP AF accounts may be requested for transfer to the mechanism registry;

(d) Administrative cancellation account: Like all cancellation accounts, an administrative cancellation account acts as an endpoint account within the CDM registry. Once CERs are "transferred" or "cancelled" into an administrative cancellation account, they are "protected" from further distribution within the CDM registry and are no longer available

---

<sup>16</sup> See decision 13/CMP.1

<sup>17</sup> CDM activities refer to both project activities and programmes of activities.

<sup>18</sup> The interim Trustee of the Adaptation Fund, which is also the current Trustee, is the World Bank Group. See also: <https://www.adaptation-fund.org/about/governance/trustee/>

for transfer or cancellation. This is achieved through the CDM registry's automated business rules. A cancellation into an administrative cancellation account maybe leveraged to support the transfer of CERs to the mechanism registry. This would remove the eligible CERs from circulation in the Kyoto Protocol registry systems and prepare them for recreation in the mechanism registry.

19. Transaction types:

(a) Administrative cancellation from the pending account: a cancellation transaction which would transfer CERs from the pending account to an administrative cancellation account within the CDM registry for the purposes of accounting for transfers of eligible CERs to the mechanism registry;

(b) Administrative cancellation from a PHA: a cancellation transaction which would transfer CERs from a PHA to an administrative cancellation account within the CDM registry for the purposes of accounting for transfers of eligible CERs to the mechanism registry.

20. The CDM registry exchanges data with other systems through application programming interfaces (APIs). Communication to the mechanism registry could be carried out via a new API to communicate data efficiently and securely on eligible CERs. The proposed new API, described in paragraphs 34 - 35 below, will be independent of the legacy web services of the CDM registry.

### **III. Key issues**

#### **A. Technical assessment of options for effecting the transfers of certified emission reductions from the CDM registry to the mechanism registry**

##### **1. Terms**

21. The following terms are used in this paper:

(a) Eligible CERs: CERs for transfer to the mechanism registry as per decision 3/CMA.3, annex, paragraph 75;

(b) Administrative cancellation account for transfers to the mechanism registry: a dedicated account in the CDM registry created under the existing account type "260 – Administrative cancellation account" for the purpose of accurately tracking CERs allocated for recreation in the mechanism registry;

(c) Administrative cancellation transaction: a transfer of eligible CERs to the dedicated administrative cancellation account of the CDM registry. Data on eligible CERs cancelled to this account will be used to identify the CERs to be communicated to and recreated by the mechanism registry;

(d) Recreation of CERs in the mechanism registry: a process that is similar to but distinct from issuance, signifying that units that had been once issued are recreated after cancellation to enable their continued tracking. Units may be re-created only if previously cancelled to ensure that the same unit exists only in one registry;

(e) Cancellation-to-recreation process: an approach involving the removal of CERs from circulation through cancellation and their reanimation through recreation. This approach requires a reconciliation procedure for the consistency of data between the cancellation account and the account where the units are re-created;

(f) Custodian of CERs: an entity that hold rights to request and authorize CER transactions. Custodians are the holders of PHAs and the focal point entities as per the modalities of communication of CDM activities, as well as the Trustee of the SOP AF account. Custodians act through their designated representatives.

## 2. Key assumptions

22. The following assumptions have been made in relation to the assessment of options for effecting the transfers of CERs from the CDM registry to the mechanism registry:

- (a) The mechanism registry will not be connected to the ITL;
- (b) The CDM registry will continue to be connected to the ITL;
- (c) Eligible CERs will continue to be issued until CMP decides otherwise;
- (d) It is desirable to leverage as much as possible the use of existing CDM registry capabilities and processes and to minimize the impact on the CDM registry and related systems that may incur costs;
- (e) Only available CERs are eligible CERs (i.e. if CERs are already cancelled or externally transferred from the CDM registry, they are no longer available for transfer to the mechanism registry);
- (f) Requests for transfers of CERs to the mechanism registry are initiated by the custodian of the CERs in the CDM registry. Should a specific validation process by designated national authorities or other Party authorities be required prior to the transfer being requested, this process would need to be elaborated and is not covered in this technical paper;
- (g) The transfer of eligible CERs is not to be restricted to accounts in the mechanism registry that are associated with the custodians of CERs in the CDM registry;
- (h) The CDM registry would enable the complete and reliable transfer of data to the mechanism registry, which would enable the completion of the cancellation-to-recreation process in the mechanism registry, including through communicating:
  - (i) Full CERs serial number details to enable reconciliation and to ensure no data is lost in the transfer from the CDM registry to the mechanism registry;
  - (ii) Information relevant to the custodian of CERs in the CDM registry and the designated recipient Party or entity and the receiving account in the mechanism registry, when available. Appropriate ownership, or custody, of the CERs is conveyed through a receiving account number. This information is known and added in the CDM registry before CER block<sup>19</sup> details are shared with the mechanism registry;
- (i) The completion of the cancellation-to-recreation process for eligible CERs in the mechanism registry would depend on the operations of the mechanism registry, including the processes for account opening and maintenance, according to the requisite identification requirements for Parties and entities requesting accounts that will be developed by the Supervisory Body as per decision 3/CMA.3, annex, paragraph 63;
- (j) The secretariat, as the administrator of the CDM registry and the mechanism registry, has flexibility on when and how to share information on eligible CERs transferred to the dedicated administrative cancellation account in the CDM registry;
- (k) It is desired to avoid impact on the ITL and/or the data exchange standards of the Kyoto Protocol, while ensuring the process is Kyoto Protocol-compliant.

## 3. Rationale

23. The proposed cancellation-to-recreation process to transfer eligible CERs to the mechanism registry is as follows:

---

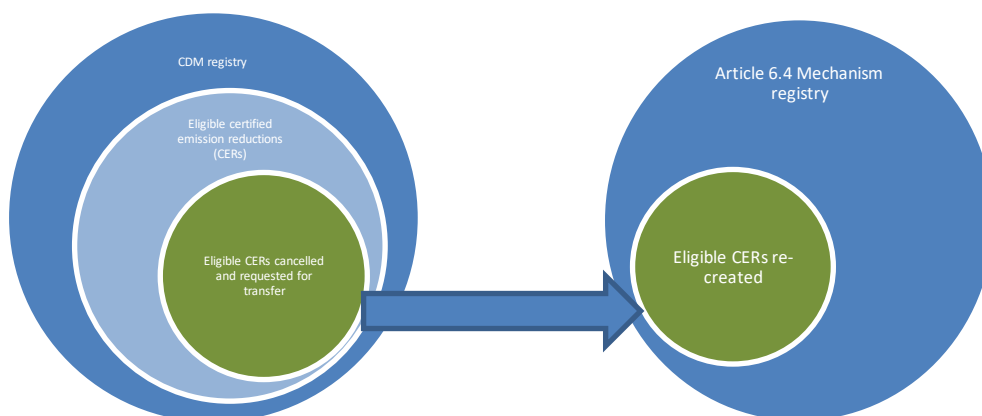
<sup>19</sup> CERs are tracked as serialized units each equal to 1 tonne of carbon dioxide equivalent combined in unit blocks.



- (a) Ensure finality of accounting for eligible CERs in relation to the Kyoto Protocol. The transferred eligible CERs will show up as cancelled in the standard electronic format (SEF)<sup>20</sup> of the CDM registry;
- (b) Leverage the existing methods and processes of the CDM registry and related systems with minimal modifications;
- (c) Where applicable, utilize automated over manual processes, which decreases the burden and enhances accuracy and transparency of accounting actions;
- (d) Ensure the transfer is a fully reconcilable process between the two registries that utilizes a straightforward one-directional point-to-point method;
- (e) Avoid dependency on the mechanism registry being operational by enabling the compilation and storage of data on eligible CERs cancelled for the purposes of transfer to the mechanism registry until such data can be received and processed by the mechanism registry.

24. Figure 1 depicts the proposed cancellation-to-recreation process to transfer eligible CERs from the CDM registry to the mechanism registry.

**Figure 1: Proposed cancellation-to-recreation process for the transfer of eligible certified emission reductions**



#### 4. Data identification

25. In order to comply with decision 3/CMA.3, annex, paragraph 75(a), the CDM registry must have an ability to efficiently track, display and conduct transfers of eligible CERs within its data ecosystem and must also be able to communicate with the to-be-created mechanism registry regarding such eligible CERs.

26. For this technical paper, the eligible CERs data is stored across the CDM IS, the CDM registry and the ITL. In order to efficiently track, display, and conduct transfers of eligible CERs, an eligibility flag is needed, which will appear alongside eligible activities on the CDM IS and their resulting unit blocks within the CDM registry. This requires a data tracking and data flow solution.

27. Firstly, the validity of activities must be identified within the CDM IS data set through data analysis, and then a newly implemented eligibility flag must be set within the CDM registry for the relevant CERs. The CDM IS contains the metadata necessary to determine whether activities originate eligible CERs. The initial determination will identify activities registered on or after 1 January 2013.<sup>21</sup>

28. The eligibility flag will enable the CDM registry to control whether CERs are both eligible and available for transfer to the mechanism registry. The CDM registry administrator

<sup>20</sup> See decision 14/CMP.1.

<sup>21</sup> Depending on the interpretation of paragraph 75(e) of the annex to decision 3/CMA.3, determination guidance may change following a future decision of the CMA.

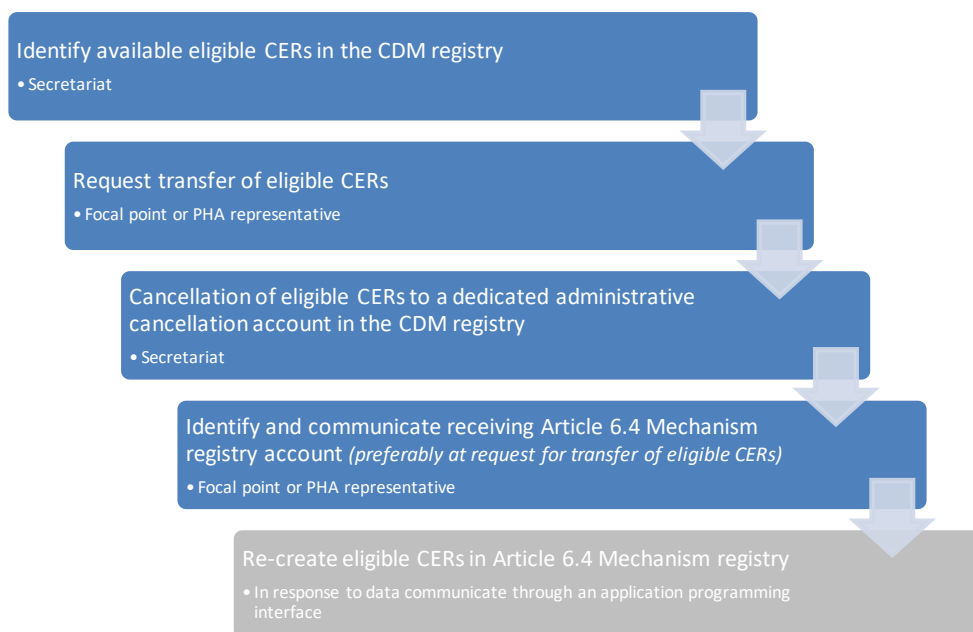
may leverage data communication between the CDM registry and the CDM IS to communicate the dual nature of available and eligible CERs or use a manual process to communicate this to the CDM registry.

29. The eligibility flag will need to be created within the CDM registry. This flag will propagate to appropriate activities based on the CDM IS analysis. The method of setting this flag will be determined by the CDM registry administrator. Once set, this flag will be maintained in the CDM registry and will be used to support the steps involved in the transfer process of eligible CERs and the reconciliation procedure to be implemented between the two registries.

**5. Transfer of eligible certified emission reductions through a cancellation-to-recreation process**

30. Figure 2 depicts the proposed cancellation-to-recreation process flow and actors for the transfer of eligible CERs from the CDM registry to the mechanism registry.

**Figure 2: Proposed cancellation-to-recreation process flow and actors**



31. In order to comply with decision 3/CMA.3, annex, paragraph 75(b), the CDM registry will rely on existing accounting infrastructure augmented with new business rules and an administrative cancellation account to facilitate the proper accounting and transfer of eligible CERs to the mechanism registry. Upon request from the custodian of eligible CERs, the process will involve the following:

(a) For CERs in the pending accounts, the CDM IS will send a cancellation action informing the CDM registry of the transfer from the pending account to the dedicated administrative cancellation account. The CDM registry administrator will complete the transaction within the CDM registry;

(b) For CERs in PHAs, the CDM registry administrator will manually create cancellation transactions in the CDM registry according to the current approach for transactions from PHAs. The CDM registry administrator will complete the transactions within the CDM registry.

32. Appropriate accounting within the CDM registry will be ensured through the following:

(a) All actions in the CDM registry will be performed by authorized users as per existing processes for authorization;

(b) Eligible CERs will be transferred to the dedicated administrative cancellation account for transfers to the mechanism registry;

(c) The source account for each cancelled CERs block will be displayed in the CDM registry and in reconciliation reports;

(d) The request for transfer of eligible CERs will follow appropriately modified existing processes. The request will occur within the CDM IS (for transfers from the pending account) or manually (for transfers from PHAs), with a minor modification to the instructions to include the administrative cancellation account for transfers to the mechanism registry;

(e) The transfer of eligible CERs to the dedicated administrative cancellation account will be validated by the ITL. The CERs will be maintained in the dedicated cancellation account within the CDM registry and cannot be transferred further;

(f) Only eligible CERs will be permitted to be cancelled into the dedicated cancellation account. Business rules within the CDM registry will be implemented to enforce this limitation;

(g) CDM registry accounting and reports will reflect all cancelled eligible CERs with full transaction history data;

(h) Once transferred to the dedicated administrative cancellation account, data on eligible CERs can be updated to reflect the endpoint account in the mechanism registry. Ideally, this information would be known at the time of requesting the cancellation by the custodian of the CERs. An appropriate process will be established within the CDM registry to manage data on endpoint accounts in the mechanism registry.

33. Transfer of data to the mechanism registry will involve:

(a) Inclusion of the mechanism registry receiving account number. The destination account number conveys ownership of the CERs. CERs data will only be communicated to the mechanism registry after a destination account is added to the CDM registry data;

(b) Following the cancellation of eligible CERs and provision of the mechanism registry receiving account details, the CDM registry will initiate communication with the mechanism registry. This communication will require the disclosure of the full information on cancelled eligible CERs and receiving account details;

(c) The mechanism registry should recreate cancelled eligible CERs by employing appropriate safeguards ensuring that recreation follows a notice of the cancellation of eligible CERs within the CDM registry;

(d) Following this notification, the mechanism registry should communicate to the CDM registry that the eligible CERs have been recreated to enable reconciliation of the data exchanged between the two registries;

(e) The timing of system-to-system communication is separate from the cancellation of eligible CERs, which provides flexibility for timing and connectivity with the mechanism registry.

34. Communication between the CDM registry and the mechanism registry will involve:

(a) A set of custom web service calls developed to facilitate the transfer of data on cancelled eligible CERs and the reconciliation of these CERs between the CDM registry and the mechanism registry. This web service-enabled communication will facilitate accurate and transparent data communication and reduce the burden and potential user error that could occur when relying on offline processes. Data can be pushed or pulled depending on final data models and appropriate data flows;

(b) The CDM registry cannot fully control the rate at which CERs are recreated in the mechanism registry and can use reconciliation reports to determine any discrepancies between the data sets. The mechanism registry can post its newly created eligible CERs back to the CDM registry for review in a data reconciliation report. Reconciliation reports can be used to track the progress of eligible CERs transfers from the CDM registry to the mechanism registry. A reconciliation protocol should cover, if possible, both units and transaction details

and will aim to ensure that all units, including all of their properties, are the same in both systems;

(c) Frequency of communication is an implementation detail to be determined between the CDM registry and the mechanism registry.

35. The CDM registry and the mechanism registry will communicate asynchronously through the APIs (involving time lag). This will facilitate data communication regarding the eligible CERs upon which further actions can be taken in each system. The API for the CDM registry can be developed and documented without input from the mechanism registry, if needed, and be maintained until transfers of eligible CERs are completed and reconciled.

36. For an overview of the transaction flow for the transfer of eligible CERs from the CDM registry to the mechanism registry, see the diagram included in annex I to this paper.

## **B. Implications of the transfer process for the CDM registry**

37. Implications in relation to CDM registry operations and maintenance are as follows:

(a) The CDM registry is hosted by the secretariat. Technical operations and maintenance of the production CDM registry system can continue at low to moderate cost;

(b) Existing contract to supply ongoing maintenance, system security updates, and enhancements to the CDM registry software will be utilized for required modifications, which are assessed to incur low to moderate costs and may be completed within the baseline annual operation and maintenance contract costs as follows:

(i) The updates to the CDM registry workflows, which leverage existing features, transactions and account types to minimize new development;

(ii) Web service modifications to establish an effective and secure API on the CDM registry for communication with the mechanism registry;

(c) The secretariat will complete data-related tasks – modalities of communication processing, transaction processing and reporting requirements – at standard effort, commensurate with the volume of requests. Current holdings of eligible CERs in the CDM registry are low (see annex II). Continued issuance of eligible CERs may impact the volume.

38. There are no implications for the SEF reporting as the CDM is only required to produce table 2b “Annual external transactions”, which does not account for internal cancellations.

39. The operations of the CDM registry could continue as long as needed to support transfers of eligible CERs to the mechanism registry according to the wishes of project participants, and as long as all CDM reporting requirements are complete. By maintaining an active and secure registry, the secretariat can leverage secure and efficient data communication between the systems. Operations can continue as normal and can transition to a stand-alone mode if and when the ITL discontinues operation.<sup>22</sup>

## **C. Sequence of processes involved in transferring eligible CERs, without prejudging what would be required for the transfers to be completed**

40. The requirement in decision 3/CMA.3, annex, paragraph 75(b) that the CERs shall be transferred to and held in the mechanism registry and identified as pre-2021 emission reductions will be satisfied in two parts. First the secretariat will leverage existing CDM

---

<sup>22</sup> The CDM registry can be configured to operate independently from the ITL, as was the case during the prompt start of the CDM. For further information and an assessment of the option of operating the CDM registry as a stand-alone system, see concept note “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 for voluntary cancellation purposes”, published as annex I to the EB 110 meeting report: <https://cdm.unfccc.int/Meetings/MeetingInfo/DB/OPKVM9B74CXT2LY/view>.

registry processes to facilitate the transfer of eligible CERs to a designated cancellation account. These processes ensure the proper custody and movement of CERs within the CDM registry and accurate accounting. A detailed process for recreating cancelled eligible CERs in the mechanism registry will need to be developed, but it is not covered in this paper.

41. From the perspective of the CDM registry, the following process sequence is envisaged:

(a) The designated focal point or PHA representative will authorize the transfer of available eligible CERs from the CDM registry to the mechanism registry. This request initiates the validation process and the cascade of actions within the CDM IS and CDM registry;

(b) The secretariat will perform a cancellation transfer type from the pending account or a PHA to the designated administrative cancellation account. The cancelled eligible CERs will be maintained in this cancellation account permanently and be reflected in the CDM registry accounting ledger for future reporting, auditing and reconciliation;

(c) The transaction will be reported to the ITL as an internal cancellation transaction. This internal cancellation transaction of the CDM registry provides a stable endpoint for the eligible CERs within the Kyoto Protocol system by maintaining:

(i) All existing Kyoto Protocol accounting and reporting rules;

(ii) Full CERs metadata and transaction history;

(d) The receiving account in the mechanism registry must be updated within the CDM registry before information on the eligible CERs can be sent to and received by the mechanism registry. As with the initial request to cancel eligible CERs units, the receiving account details must be provided to the secretariat by the appropriate focal point or PHA representative (preferably at the same time as the initiation of administrative cancellation). While it is possible that the receiving account will be controlled by the focal point or the PHA representative, this relationship is not required. It will be up to the focal point or PHA representative to determine the appropriate receiving account in the mechanism registry;

(e) Receipt of CER data in the mechanism registry will prompt the recreation of the cancelled eligible CERs. Only CERs that are in the CDM registry administrative cancellation account for transfers to the mechanism registry may be recreated. The mechanism registry will receive full data on cancelled eligible CERs before creating new limited-use CERs within the mechanism registry according to its operational standards. The recreated CERs will be fully traceable back to the original CERs block and will have a one-to-one relationship with the cancelled eligible CERs communicated from the CDM registry.

42. It is the responsibility of the mechanism registry to prevent duplicate recreation. Because the full details are being shared, duplicate blocks of the same origin could be identified in reconciliation and would need to be addressed.

43. Prerequisites for the transfer of eligible CERs include:

(a) Appropriate accounts which reflect custodial information are established in the mechanism registry. These accounts are known by the focal point or PHA representative in control of the CERs within the CDM registry;

(b) The mechanism registry is responsible for establishing appropriate account controls for the recreation of units which are backed by a one-to-one relationship with cancelled eligible CERs in the CDM registry;

(c) The mechanism registry is able to maintain appropriate custody when recreating the CERs;

(d) The CDM registry operates as a live registry supporting the cancellation and communication of eligible CERs into the mechanism registry.

44. Other considerations in relation to the proposed process include:

(a) The process elaborated in this technical paper anticipates and supports delayed and separate timelines for CDM registry modifications and operations, mechanism registry development, requests for cancellations, and updates to endpoint accounts for eligible CERs;

(b) The CDM registry can be updated soon after formal direction is provided;

(c) The CDM registry can be maintained for years at low cost to support the management of eligible CERs and system-to-system communication. This is required for the data volumes and accuracy expected;

(d) While it is preferable to move all CERs to their endpoint accounts before the end of ITL operations, this is not required. The CDM registry can operate independent of the ITL, as was the case in the prompt start of the CDM. The CDM registry has appropriate accounting controls to conduct transfers and reporting as a stand-alone system;

(e) Once interoperability is achieved between the two registries, cancelled eligible CER recreation can occur over a short or a longer period of time;

(f) Auditing can occur at any time to review which cancelled CERs have been reanimated in the mechanism registry and to confirm there is no double-counting of CERs.

45. The ultimate endpoint for this transfer process is determined by the completion of four milestones. Once completed, reconciliation reports between the two systems would reflect a 100 per cent agreement on eligible CERs:

(a) All requests to transfer eligible CERs to the mechanism registry are received by the secretariat. This may require a process with set deadlines;

(b) All cancellations of eligible CERs to the dedicated administrative cancellation account are completed;

(c) Cancelled eligible CERs have endpoint accounts in the mechanism registry; and

(d) All cancelled eligible CERs are re-created in the mechanism registry.

#### **IV. Information on eligible certified emission reductions held in the CDM registry, aggregated by Party**

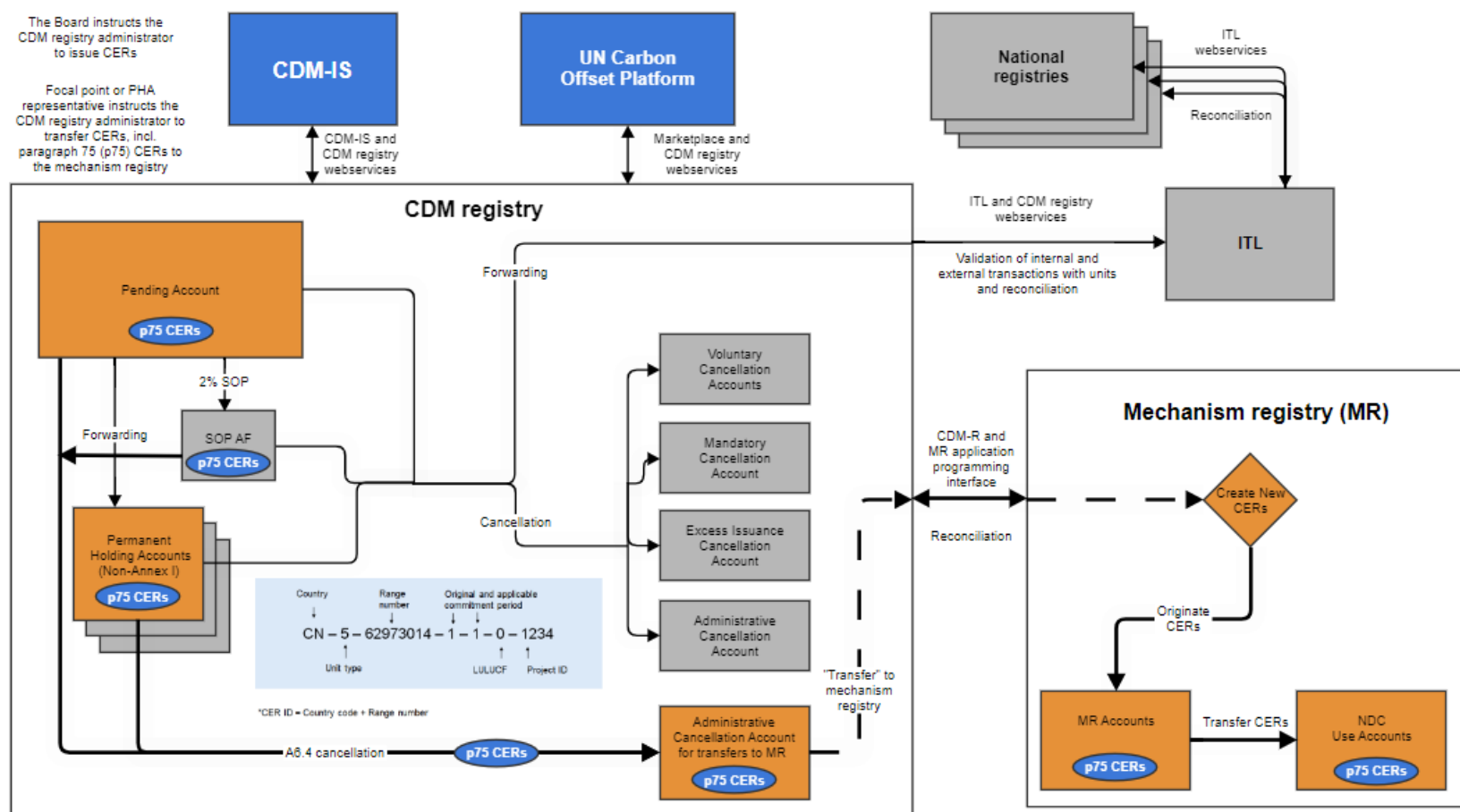
46. Information on eligible CERs held in the CDM registry, aggregated by Party, is contained in annex II to this paper.

#### **V. Proposed solution**

47. In line with the analysis in this paper, small modifications to the CDM registry may be implemented to support the transfer of eligible CERs to the mechanism registry through a cancel-to-recreation process. The transfer of eligible CERs will require active engagement and direction from focal points and PHA representatives, including in relation to the initiation of the process and the communication of the details of the receiving accounts in the mechanism registry. The data exchange between the two registries in relation to transfers of cancelled eligible CERs should be automated and subject to a reconciliation procedure. The CDM registry can continue to operate at low cost, as long as necessary, to complete the relevant accounting operations and accurately transfer eligible CERs to the appropriate endpoint mechanism registry accounts.

# Annex I

## CDM registry transaction flow, including transfer of eligible certified emission reductions to the Article 6.4 mechanism registry<sup>23</sup>



<sup>23</sup> Abbreviations are as follows – EB: CDM Executive Board, CDM: Clean Development Mechanism; CERs: Certified Emissions Reductions, SOP AF: Share of Proceeds Adaptation Fund. CDM-IS: CDM Information System, MR: Article 6.4 mechanism Registry, NDC: Nationally Determined Contribution, ITL: International Transaction Log.

## Annex II

### Eligible certified emission reductions held in the CDM registry, aggregated by host Party

1. Certified emission reductions (CERs) from 208 project activities and programmes of activities registered or on after the 1 January 2013 are held in the CDM registry as at 30 September 2022 as follows:
  - (a) In the pending account of the CDM registry: 16.8 million;
  - (b) In permanent holding accounts: 0.02 million;
  - (c) In the share of proceeds for the Adaptation Fund account: 0.3 million.
2. The amounts by host Party are indicated in the following tables.

**Table 1. Certified emission reductions from projects registered on or after 1 January 2013 in the pending account of the CDM registry, aggregated by host Party**

Host Party	Amount
Argentina	1
Bangladesh	2,720,596
Burundi	82,295
Brazil	239,394
Cabo Verde	17,955
Chile	52,303
China	53,234
Colombia	1,047,103
Fiji	95,518
Georgia	10,963
Ghana	352,650
Honduras	458
Indonesia	459,763
India	4,471,008
Kenya	161,550
Cambodia	23,554
Republic of Korea	11,846
Lao People's Democratic Republic	19,049
Sri Lanka	63,241
Morocco	21,161
Madagascar	201,396
Mali	20,276
Myanmar	1,992,690
Malawi	824,812
Mexico	203,178
Mozambique	1,022,363
Nigeria	32
Nepal	11,233
Oman	113,650
Pakistan	58,266



---

Rwanda	209,746
Saudi Arabia	124,386
Togo	90,498
Thailand	24,525
Uganda	797,581
Viet Nam	97,462
Zambia	1,149,897

<b>TOTAL</b>	<b>16,789,410</b>
--------------	-------------------

**Table 2. Certified emission reductions from projects registered on or after 1 January 2013 in permanent holding accounts of the CDM registry, aggregated by host Party**

Host Party	Amount
Sri Lanka	16,447
<b>TOTAL</b>	<b>16,447</b>

**Table 3. Certified emission reductions from projects registered on or after 1 January 2013 in the share of proceeds for the Adaptation Fund account of the CDM registry, aggregated by host Party**

Host Party	Amount
Argentina	6,103
Brazil	16,124
Cabo Verde	5,663
Chile	773
China	1,086
Colombia	10,386
Fiji	2,540
Georgia	5,122
Ghana	8,235
Honduras	2,972
Indonesia	5,861
India	147,458
Kenya	17,728
Republic of Korea	1,227
Sri Lanka	4,581
Morocco	654
Mauritius	981
Mexico	4,147
Nigeria	17,289
Oman	5,161
Panama	12,539
Pakistan	2,006
Saudi Arabia	4,434
Thailand	2,492
Viet Nam	8,493
South Africa	4,830
<b>TOTAL</b>	<b>298,885</b>

---