

Annex

DEVELOPMENT OF THE CLEAN DEVELOPMENT MECHANISM REGISTRY

I. INTRODUCTION

1. In accordance with decision 17/CP.7, the Executive Board shall establish and maintain a CDM registry to ensure the accurate accounting of the issuance, holding, transfer and acquisition of certified emission reductions (CERs) by Parties not included in Annex I. The Board shall also identify a registry administrator to maintain the registry under its authority.
2. The CDM registry is to be an electronic database of accounts in which CERs are held. It is to be similar in structure and functions to national registries to be maintained by Annex I Parties. The validity of transactions, including CER issuance and cancellation in the CDM registry and transfers of CERs to national registries of Annex I Parties, is to be verified by the transaction log established and maintained by the secretariat. In order to enact transactions, the CDM registry is to conform to the technical specification of the data exchange standards between registries and the transaction log.
3. The Board agreed, at its ninth meeting, to issue a public call to Parties and organizations for inputs to the development of the CDM registry. At the same meeting, the Board requested the secretariat to begin development work on the CDM registry, subject to the availability of resources, in particular through preparing a draft functional specification for the CDM registry, and report back to the Board on progress and a timeline for continuing work at its meeting held in conjunction with COP9.
4. This note proposes modalities for the development of the CDM registry and provides information on the responses to the public call for input. The functional specification, setting out the requirements to be met by the CDM registry, is under preparation. The secretariat will report on the status of work on the functional specification at the twelfth meeting of the Board.
5. It is anticipated, at this stage, that the first requests for issuance of CERs may be made during the second or third quarter of 2004. This will depend, in particular, on progress with the accreditation process and the registration of project activities.

II. REQUIREMENTS OF THE CDM REGISTRY

6. In accordance with decision 17/CP.7, the functions of the CDM registry include:
 - (a) Maintenance of accounts, each with a unique account number, including the pending account of the Board, holding accounts for non-Annex I Parties hosting CDM project activities, holding accounts for the management of the share of proceeds, and cancellation accounts;
 - (b) Issuance of CERs into the pending account of the Board and allocation of a unique serial number to each CER identifying, inter alia, the commitment period, host Party for the CDM project activity and the CDM project activity itself;
 - (c) Forwarding of CERs, corresponding to the share of proceeds, to appropriate accounts in the CDM registry for the management of the share of proceeds for adaptation and administration;
 - (d) Forwarding of CERs to the accounts of Annex I and non-Annex I Parties and project participants in the CDM registry and national registries, in accordance with their request;
 - (e) Cancelling ERUs, CERs, AAUs and RMUs to compensate excess CERs issued, where the accreditation of a designated operational entity has been withdrawn or suspended;

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- (f) Termination of all transactions found to be invalid by the transaction log.
7. To ensure that the CDM registry can communicate with national registries and the transaction log in an accurate, transparent and efficient manner, the structure and data formats of the CDM registry are to conform to the technical standards adopted by decision 24/CP.8 in the form of the general design requirements. These standards, known as the data exchange standards, are currently being elaborated into detailed specifications to ensure their compatible implementation across all registry systems.
8. In order to conform to the data exchange standards, additional functions to be fulfilled by the CDM registry include:
- (a) Transmission, reception and processing of standardized electronic messages, using a common language protocol and data formats, to facilitate the transfer of CERs to national registries of Annex I Parties and the verification of transactions by the transaction log;
 - (b) Common formats for serial numbers, account numbers and transaction numbers;
 - (c) Application of security measures and measures to ensure accurate recording and transmission of data, including the reconciliation of data with the transaction log.
9. The CDM registry is foreseen to be web-based, such that individual account holders may log in through the Internet to manage their accounts and initiate transactions. It is envisaged that private and public entities participating in CDM project activities may hold accounts in the CDM registry. The CDM registry will need to be integrated with elements of the information management system established for the CDM to manage information on, inter alia, project activities, public inputs and the roster of experts.
10. In accordance with the request of the Board at its ninth meeting, the secretariat has been identifying the requirements which the CDM registry needs to meet in order to fulfil the above functions. Registry specifications received through the public call for input have helped greatly in this process. The secretariat will report on the status of this work at the twelfth meeting of the Board.

III. ANALYSIS OF PUBLIC INPUT

11. In accordance with the agreement by the Board at its ninth meeting, a public call to Parties and organizations for inputs to the development of the CDM registry was issued. This sought contributions, by 30 September 2003, in the form of functional and technical specifications, other documentation or programming code for systems or system components. Of the 17 responses received:
- (a) Six responses related to specifications and software which may be provided on a no-cost basis. Two of these related to generic registry software which may be adapted to meet the needs of the CDM registry; two related to software systems which have similar functions to the CDM registry; and two related to specifications of registries being developed in Annex I Parties;
 - (b) Four responses expressed interest in developing the CDM registry with the secretariat on a commercial basis;
 - (c) Seven responses contained views or questions on the development of the CDM registry. Most expressed support for establishing an interim CDM registry within which CERs may be issued before the transaction log begins operation. Some expressed support for the establishment of temporary accounts in the CDM registry, prior to the implementation of national registries of Annex I Parties, for

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Annex I Parties or their entities participating in CDM project activities. One response did not support establishing an interim CDM registry or temporary accounts for Annex I Parties or their entities.

12. The secretariat has reviewed the responses to the call for input and explored the options for the development of the CDM registry addressed in them. The following criteria were considered in this review:

- (a) Closeness to the requirements of the CDM registry;
- (b) Assistance with the development of the CDM registry;
- (c) Necessary involvement of the secretariat;
- (d) Consistency of the possible timeframe with the timing of CER issuance;
- (e) Possibility of CER issuance in an interim CDM registry;
- (f) Proprietary rights for the CDM registry;
- (g) Cost implications.

13. The secretariat has expressed its appreciation, on behalf of the Executive Board, to each respondent for their interest in the development of the CDM registry and their willingness to contribute to this process. The secretariat has further explored development options for the CDM registry with some of the respondents in the preparation of this proposal, with a view to developing the CDM registry in the most time and cost-efficient manner.

IV. DEVELOPMENT OPTIONS FOR THE CDM REGISTRY

14. The secretariat has identified two main options for developing and operating the CDM registry, taking into account the responses to the call for inputs. These are discussed below.

A. Adaptation of a generic registry to the CDM registry requirements

15. The first main option is to adapt a generic registry to the requirements of the CDM registry. A generic registry is a software system designed to be capable of performing the basic business, administrative and infrastructure functions of a registry. In deliberately excluding programme-specific characteristics from its design, a generic registry provides a base software package which can be adapted and added to as necessary.

16. The secretariat has been made aware of two generic registries which could be adapted in this manner. These are currently being developed on the basis of registries which are already in use in emissions trading programmes. Both of these generic registries are being developed on a modular basis. This makes it possible to install only those modules required for a particular policy application and allows modules to be installed at different times.

17. In the case of one of the identified generic registry options, sufficient modules to meet the requirements of an interim CDM registry are expected to be completed in November 2003. In the other case, sufficient modules are expected to be completed in February 2004. The adaptation to the requirements of the CDM registry could be undertaken after these dates. Communications modules for each generic registry option are expected to be completed in mid-2004 and would also need adaptation to the requirements of the CDM registry.

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18. Table 1 (a) below shows indicative tasks that would need to be undertaken in adapting a generic registry to the needs of the CDM registry and in operating and maintaining it. Precise tasks would depend on the exact specifications of the generic registry and the CDM registry. For the generic registry options considered here, these adaptation tasks could be carried out either by the donor of the system, a contractor to the secretariat, or by the secretariat itself. The latter two options would depend on the availability of resources to the secretariat.

Table 1 (a) Adaptation of a generic registry to the CDM registry requirements: Tasks and roles		
Issue	Tasks	Roles
Registry development	Define and implement database structure; ensure compatibility with the CDM information system	Undertaken by the secretariat *
	Establish internal checks	Undertaken by donor/contractor (involves reprogramming of registry)
	Develop "front-end" web interface for users; integration with CDM website	Undertaken by the secretariat *
	Add communication functionality and align to data exchange standards	Undertaken by donor/contractor (involves significant development work)
Upkeep	Operate the registry	Undertaken by the secretariat *
	Maintain and upgrade the registry	Undertaken by donor/contractor or by the secretariat *

* Subject to the availability of resources

Table 1 (b) Adaptation of a generic registry to the CDM registry requirements: Criteria assessment	
Criteria	Assessment
Meets the requirements of CDM registry	Final product would fully meet the specification of the CDM registry. Generic registries are purpose-built for accounting and tracking credit issuance and movement. As they are based on a modular structure, only the appropriate modules need to be applied. Both options considered are designed to facilitate their simple adaptation to specific applications. Both would require the addition of communication functionality in line with the data exchange standards.
Assistance with development	In the case of one generic registry option being considered, the donor involved has expressed willingness to contribute to the adaptation work and the ongoing maintenance and upgrading of the CDM registry. In the other case, such work would need to involve contractors.
Secretariat involvement	In both generic registry options, the CDM registry could be operated from within the secretariat. Certain aspects of the adaptation work would need to be undertaken by the secretariat to ensure alignment with the CDM info system.

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Timeframe	Both generic registry options allow a CDM registry, less communication functions, to begin operation in the second or third quarter of 2004 as an interim CDM registry. Implementation of a communications module may proceed thereafter in time for testing and implementation of the transaction log (to be completed by December 2004).
CER issuance before transaction log operation	CERs may be issued in an interim CDM registry prior to the operation of the transaction log. Such issuance may be confirmed later, in the full terms of decision 19/CP.7, by the transaction log.
Proprietary rights	The registry would be likely to remain under licence to the donor. Roles of the secretariat and donor could be established through bilateral agreements.
Cost implications	Supply of the generic registry would be at no cost. Depending on the agreement reached, the costs of work by the donor may be covered by the donor. Work undertaken by the secretariat would be covered under the CDM project budget.

19. Table 1 (b) above summarizes the assessment of this development option by the secretariat. This indicates that both generic registries considered here provide a good basis for being adapted to the needs of the CDM registry in a timeframe that is compatible with an expected need to issue CERs in the second or third quarter of 2004. One of the two generic registries offers greater opportunity than the other for assistance by the donor in adapting and maintaining the CDM registry. Specific licence and bilateral agreement issues would require further consideration.

20. A close variant of this development option would be to adapt software systems that were originally developed for different purposes but possess functionality which is similar to that required for the CDM registry. Two systems, highlighted through the call for inputs, may offer potential to be adapted to the needs of the CDM registry. However, the effectiveness and timeframe associated with this development option would depend on the degree of functional and technical similarity of such systems with the CDM registry. The adaptation work would be at least that identified in table 1 (a) above for the generic registry development option. Further liaison with the potential providers of these systems would be required to clarify this development option. This would also involve clarifying the likely costs involved, as both systems would require work funded out of the CDM project budget.

B. Development of the CDM registry by the secretariat

21. Under the second main option, the secretariat would undertake all the tasks involved in the development and operation of the CDM registry. The development phase would involve contracting an IT developer and could be helped considerably by the use of specifications provided through the public call for input.

22. Table 2 (a) below shows indicative tasks that would need to be undertaken by the secretariat in developing the CDM registry. Table 2 (b) below summarizes the assessment of this option by the secretariat. This indicates that the secretariat could develop a CDM registry that meets all requirements. However, this development option would be considerably more costly to the CDM project budget and may not complete a CDM registry in time for CER issuance in the second or third quarter of 2004 (unless a separate and additional database is established).

<p>Table 2 (a) Development of the CDM registry by the secretariat: Tasks and roles</p>
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Issue	Tasks	Roles
Registry development	Develop the registry through preparing functional and technical specifications	Undertaken by secretariat *
	Construct and test the registry	Undertaken by secretariat *
Upkeep	Operate the registry	Undertaken by secretariat *
	Maintain and upgrade the registry	Undertaken by secretariat *

* Subject to the availability of resources

Table 2 (b) Development of the CDM registry by the secretariat: Criteria assessment	
Criteria	Assessment
Meets the requirements of CDM registry	Final product would fully meet the specification of the CDM registry.
Assistance with development	Technical assistance of a contractor would be required. The development work could be helped by the use of specifications provided through the call for input.
Secretariat involvement	The whole processes relating to the development and operation of the CDM registry would be undertaken by the secretariat.
Timeframe	It is expected that the CDM registry, including communications functions, could begin operation by the end of 2004 . If necessary, a separate and additional database could be established prior to this date as an interim registry to allow for the issuance of CERs.
CER issuance before transaction log operation	CERs may be issued in an interim CDM registry prior to the operation of the transaction log, though this would require a separate and additional database to be established for this purpose if issuance is required in the second or third quarter of 2004. Such issuance may be confirmed later by the transaction log.
Proprietary rights	The registry could be licensed to the UNFCCC secretariat. The secretariat would be able to upgrade the CDM registry as it considers necessary.
Cost implications	The full cost associated with the development and operation of the CDM registry would need to be covered by the CDM project budget. It is noted that the development of registries by some Parties has cost in the region of US \$1 million. An interim registry in the second or third quarter of 2004 would involve additional costs.

V. ISSUES TO BE CONSIDERED

23. A number of issues with implications for the development and operation of the CDM registry need to be considered. The Board may wish to provide guidance on such issues, including:

(a) Whether holding accounts for Annex I Parties and their entities may be established in the CDM registry. This has been suggested in order that such Parties and entities may hold CERs in accounts under their own names prior to the implementation of national registries and the transaction log.

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(b) Whether CERs held in holding accounts of non-Annex I Parties or their entities in the CDM registry may be carried over to a subsequent commitment period. This issue is not addressed in decisions 17/CP.7 or 19/CP.7.

(c) Whether CERs held in holding accounts of non-Annex I Parties or their entities can be transferred to:

- (i) Holding accounts in national registries of Annex I Parties;
- (ii) Other holding accounts in the CDM registry;

(d) Whether non-Annex I Parties or their entities can acquire CERs in their accounts in the CDM registry, other than receiving CERs forwarded from the pending account.

24. The Executive Board may further wish to:

(a) Express its gratitude to the Parties and organizations which responded to its public call for input to the development of the CDM registry;

(b) Provide guidance to the secretariat on the issues relating to the development and operation of the CDM registry referred to in paragraph 23 of this note.

(c) Note the requirements of the CDM registry, as identified by the secretariat;

(d) Request the secretariat, subject to the availability of resources, to develop the CDM registry by means of adapting a generic registry to the requirements of the CDM registry, in a timeframe consistent with expectations for the first issuance of CERs, and, where necessary, make arrangements for the confirmation of CER issuance in the full terms of decision 19/CP.7 upon establishment of the transaction log;

(e) Request the secretariat, at the fourteenth meeting of the Executive Board, to

- (i) Report on progress in developing and implementing the CDM registry;
- (ii) Elaborate the role of the registry administrator of the CDM registry, with a view to the Executive Board designating a CDM registry administrator at that meeting.
