THE PROJECT

FOR

CAPACITY DEVELOPMENT OF

CDM PROMOTION IN SRI LANKA

OUTPUT OF THE PROJECT ACTIVITIES

OCTOBER 2011

EX RESEARCH INSTITUTE LTD.
JAPAN SMART ENERGY CO., LTD.

Contents

CAPACITY ASSESSMENT SHEET
(Self Assessment)

Prepared by: JICA Expert Team, May 2010

Name:

Position:

a)~d) in this sheet indicates the followings:

a) Understand very well
b) Understand
c) Do not understand so much
d) Never heard of the word / do not understand the meaning of the question

1. Basic knowledge on climate change

1.1. UNFCCC (the United Nations Framework Convention on Climate Change)

1) UNFCCC's objective and principle

Please select the option that expresses your understanding level of the following each topic in regard to UNFCCC.

▪ UNFCCC's ultimate objective	a) b) c) d)
▪ Principle: "Common but differentiated responsibilities"	a) b) c) d)
▪ Principle: "Consider special circumstances of developing country" (especially those that are particularly vulnerable to the adverse effects of climate change)	a) b) c) d)
▪ Principle: "Precautionary principle" (take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects)	a) b) c) d)

2) Sri Lanka and UNFCCC

Please select the option that expresses your understanding level of the following each topic in regard to your country and UNFCCC.

▪ The years of signature and ratification of the Convention (UNFCCC) by Gov't of Sri Lanka	a) b) c) d)
▪ The roles of Annex I Parties and Non-Annex I Parties to the UNFCCC	a) b) c) d)
▪ Approximate number of Parties to the UNFCCC	a) b) c) d)

1.2. Kyoto Protocol

1) Market-based mechanisms

Please select the option that expresses your understanding level of the following each topic in regard to Kyoto Protocol.

▪ Contents of three (3) market-based mechanisms	a) b) c) d)
▪ Difference among three (3) market-based mechanisms	a) b) c) d)

2) Current information of the COP and COP/MOP

Please select the option that expresses your understanding level of the following each topic in regard to COP and COP/MOP.

▪ Contents of the Nairobi Framework	a) b) c) d)
▪ Contents of the Marrakech Accord	a) b) c) d)
▪ Contents of the Bali Action Plan	a) b) c) d)
▪ Contents of the Copenhagen Accord	a) b) c) d)

1.3. Other worldwide trend of climate change topics

Please select the option that expresses your understanding level of the following each topic.

▪ The role of the Intergovernmental Panel on Climate Change (IPCC)	a) b) c) d)
▪ Brief information of the IPCC Fourth Assessment Report (AR4)	a) b) c) d)
▪ Activities by the Asia-Pacific Partnership on Clean Development and Climate (APP)	a) b) c) d)

2. Basic knowledge on CDM

2.1. Basic rules of CDM

1) CDM Eligibility

Please select the option that expresses your understanding level of the following each topic in regard to CDM eligibility.

▪ Eligibility of CDM project types	a) b) c) d)
▪ ODA utilization for CDM project implementation	a) b) c) d)
▪ Concept of "additionality"	a) b) c) d)

2) Rules regarding categories of CDM projects

Please select the option that expresses your understanding level of the following each topic in regard to categories of CDM projects.

[Difference between Large scale and SSC projects]

▪ Criteria for SSC projects	a) b) c) d)
▪ Advantages of small scale CDM project	a) b) c) d)
▪ Criteria for debundling	a) b) c) d)

[Difference between Emission reduction and Sink (AR) projects]

▪ Definition of A/R CDM project.	a) b) c) d)
▪ Eligibility of lands for A/R CDM project activities	a) b) c) d)
▪ Project period for AR CDM project.	a) b) c) d)
▪ Definition of tCER and lCER	a) b) c) d)

[Knowledge on Programme of Activities (PoA)]

▪ Definition of programmatic CDM (PoA, CPA)	a) b) c) d)
▪ Roles and responsibilities of coordinating managing entity	a) b) c) d)
▪ Project period of PoA	a) b) c) d)
▪ Difference in PDD forms from conventional CDM	a) b) c) d)
▪ Difference in registration process of programmatic CDM	a) b) c) d)
▪ Requirements for CPAs under PoA (in methodology and technology)	a) b) c) d)
▪ Erroneous inclusion of CPAs	a) b) c) d)

2.2. CDM Project Implementation Procedure

Please select the option that mostly expresses your understanding level of the following each steps in regard to CDM project implementation procedures.

1) Project planning/ PDD production

▪ Approved methodologies and methodological tools	a) b) c) d)
▪ Actions to be taken when applicable methodologies are not available for a proposed project	a) b) c) d)
▪ Contents of PDD	a) b) c) d)
▪ Concept of prior consideration	a) b) c) d)
▪ Concept of benchmark analysis	a) b) c) d)

2) Validation

▪ Steps to be involved in validation process	a) b) c) d)
▪ The source of list of validators	a) b) c) d)
▪ Approximate cost of validation	a) b) c) d)

3) Registration

▪ Completeness check	a) b) c) d)
▪ Request for registration	a) b) c) d)
▪ Request for review	a) b) c) d)

4) Verification/Issuance of CER

▪ Process of verification	a) b) c) d)
▪ Monitoring report	a) b) c) d)
▪ Procedures for review of issuance	a) b) c) d)
▪ Process of distribution of CERs	a) b) c) d)

2.3. Relevant tools and guidelines for PDD production

Please select the option that mostly expresses your understanding level of the following each topic in regard to the relevant tools and guidelines for PDD production.

1) Rules regarding additionality

▪ Contents of "Guidelines on the assessment of investment analysis"	a) b) c) d)
▪ Contents of "Tool for the demonstration and assessment of additionality" and/or "Combined tool to identify the baseline scenario and demonstrate additionality"	a) b) c) d)
▪ Contents of "Tool to determine the remaining lifetime of equipment"	a) b) c) d)

2) Rules regarding emission reduction calculation

▪ Contents of "Tool to calculate the emission factor for an electricity system"	a) b) c) d)

3. Roles and Responsibility of the Key Actors in CDM

3.1. CDM-EB

Please select the option that expresses your understanding level of the following each topic in regard to the CDM Executive Board (CDM-EB).

▪ Roles and responsibilities of the CDM-EB	a) b) c) d)
▪ Roles and activities of the Panels and Working Groups under the CDM-EB	a) b) c) d)
▪ Relationship between the CDM-EB and the COP/MOP	a) b) c) d)

3.2. DNA

Please select the option that expresses your understanding level of the following each topic in regard to the Designated National Authority (DNA).

▪ Roles and responsibilities of the DNA	a) b) c) d)
▪ Contents of Letter of Approval	a) b) c) d)

3.3. DOE

Please select the option that expresses your understanding level of the following each topic in regard to the Designated Operational Entity (DOE).

▪ Roles and responsibilities of the DOE	a) b) c) d)
▪ Validation report	a) b) c) d)
▪ Verification report	a) b) c) d)
▪ UNFCCC's evaluation system for DOE	a) b) c) d)

4. National approval process and policies related to CDM

4.1. National approval process

Please select the option that expresses your understanding level of the following each topic in regard to the National approval process.

▪ National approval process in Sri Lanka	a) b) c) d)
▪ National approval criteria (Sustainability criteria) of Sri Lanka	a) b) c) d)
▪ PIN form of Sri Lanka	a) b) c) d)

4.2. National development policy

Please select the option that expresses your understanding level of the following each topic in regard to the National development policy.

▪ National plan / policy related to climate change	a) b) c) d)
▪ National plan / policy related to CDM	a) b) c) d)

4.3. Laws and regulations

Please answer your understanding level laws and regulations in relation to the following sectors:

1) Laws and regulations by sector

▪ Energy	a) b) c) d)
▪ Agriculture	a) b) c) d)
▪ Forestry	a) b) c) d)
▪ Industry	a) b) c) d)
▪ Land use	a) b) c) d)
▪ Waste management	a) b) c) d)
▪ Environment	a) b) c) d)

2) Environmental Impact Assessment (EIA)

▪ Criteria of EIA in Sri Lanka	a) b) c) d)
▪ Process of EIA in Sri Lanka	a) b) c) d)

5. Current Status of CDM projects in Sri Lanka

Please select the option that expresses your understanding level of the following each topic in regard to current status of CDM projects in Sri Lanka.

▪ Do you know the detail information and current status of the registered Sri Lankan CDM projects?	a) b) c) d)
▪ Do you know the current status of projects that submitted PIN to DNA?	a) b) c) d)
▪ Do you think of any potential areas in CDM and approximately how much CERs can be generated from such sector?	a) b) c) d)
▪ Do you understand potential barriers and issues in developing CDM project in each sector?	a) b) c) d)
▪ Do you think of how to approach potential project developers to identify potential CDM projects in Sri Lanka?	a) b) c) d)

6. CERs and Registration System

6.1. Certified Emission Reductions (CERs)

Please select the option that expresses your understanding level of the following each topic in regard to CERs issuance.

▪ The Administration Share of Proceeds (SOP-Admin)	a) b) c) d)
▪ The Adaptation Share of Proceeds (SOP-Adaptation)	a) b) c) d)

6.2. Registry System

Please select the option that expresses your understanding level of the following each topic in regard to Registry System.

▪ National Registries (Annex I Parties only)	a) b) c) d)
▪ CDM Registry	a) b) c) d)
▪ International Transaction Log (ITL)	a) b) c) d)
▪ Other registry systems and carbon markets (EU-ETS, etc.)	a) b) c) d)

7. Communication with private sector & Public relation

7.1. Communication with private sectors

How many contacts do you have regarding the following items:

▪ Potential project owners	
▪ Investors	
▪ Local consultant	
▪ Validators	
▪ CER buyers	

7.2. Public relations

- Please describe the presence of PR activities in Sri Lanka on climate change issues to the general public.

- Please describe the presence of PR activities in Sri Lanka on CDM to the relevant stakeholders.

8. Sources of Useful Information

Please describe the useful information sources that you are using / aware of.

[ ] [ ]
[ ] [ ]
[ ] [ ]
[ ] [ ]
[ ] [ ]

9. Challenges and Obstacles

- Clarify major internal factors (at your division/in your responsibilities) of challenge and obstacle to proceed CDM

- Clarify major external factors (outside of your office) of challenge and obstacle to proceed CDM

10. Expectation of JICA project

- What are the problems that you are facing in promoting CDM project? Please describe using concrete examples.

- What types and areas of assistance you will need from this JICA project? Please describe using concrete examples.

CAPACITY ASSESSMENT SHEET
(CDM Questionnaire)

Prepared by: JICA Expert Team, May 2010

Name:

Position:

Please answer the following questions.
Some questions are required to check (✓) or circle to "Yes" or "No".
Also some questions are required to fill in your answer or opinion.
Don't be too much serious to answer! For preparation of our lectures to you, we would like to know your knowledge level. Let's keep study together later on!!

- UNFCCC's objective

[Q1] Which is correct sentence in regard to ultimate objective of the UNFCCC? (Please select the option from below sentences.)

[ ]	Reduce Greenhouse Gas (GHG) emission 5% against 1990 levels
[ ]	Achieve Sustainable Development and Greenhouse Gas (GHG) emission reduction
[ ]	Stabilization of Greenhouse Gas (GHG) concentrations in the atmosphere

- Kyoto Protocol

Kyoto Protocol sets binding targets for Annex I Parties for reducing Greenhouse Gas (GHG).

[Q2]	▪ How many percentage of the GHG reduction amount against 1990 levels over the 5 year period (2008-2012)?	a) 2% b) 3% c) 5% d) 10% e) 20%

Kyoto Protocol offers Annex I Parties an additional means of meeting their targets by way of three (3) market-based mechanisms.

[Q3] Please list up the name of the mechanisms:

[ ]
[ ]
[ ]

- Brief history of the COP and the COP/MOP

[Q4] Please describe lines to connect event name and each COP meeting.

<Event (Adopted document)>			<COP meeting>
Kyoto Protocol	●	●	COP1
Copenhagen Accord	●	●	COP3
Berlin Mandate	●	●	COP4
Marrakesh Accord	●	●	COP7
Bali Action Plan	●	●	COP12/CMP2
Buenos Aires Plan of Action	●	●	COP13/CMP3
Nairobi Framework	●	●	COP15/CMP5

- Copenhagen Accord

The Copenhagen Accord agrees Non-Annex I Parties would "implement mitigation actions (Nationally Appropriate Mitigation Actions; NAMAs)" to slow growth their carbon emissions, submitting these by 31 January 2010.

[Q5]	▪ Did Gov't of Sri Lanka submit their voluntary mitigation actions (NAMAs) based on the Copenhagen Accord yet?	Yes / No

- CDM Eligibility

Please choose yes or no about CDM eligibility for the current scheme (1st commitment period, 2008-2012)

[Q6]	▪ Land Use, Land-Use Change and Forestry (LULUCF)	Yes / No
[Q7]	▪ Reduced Emissions from Deforestation and forest Degradation (REDD)	Yes / No
[Q8]	▪ Nuclear Power Plant	Yes / No
[Q9]	▪ Carbon Capture and Storage (CCS)	Yes / No

- DNA

[Q10]	▪ Does DNA need to confirm the CDM project activity assists it in achieving sustainable development?	Yes / No
[Q11]	▪ Who can request for issuance of Letter of Approval by DNA?	[ ]

- DOE

[Q12] Please list up the main two roles of DOE:

[ ]
[ ]

Please choose yes or no about description of DOE

	Roles of DOE	
[Q13]	▪ DOE has the responsibility to register the project for project participants once they made contract with PP.	Yes / No
[Q14]	▪ For Small Scale CDM project, one DOE can do validation and verification process.	Yes / No
[Q15]	▪ DOE is responsible for communicating with DNAs on behalf of the project participants.	Yes / No
[Q16]	▪ DOE is responsible for communicating with CDM Executive Board on behalf of the project participants.	Yes / No
[Q17]	▪ DOE is responsible for compensating the issued CERs by erroneous inclusion of CPAs under PoA.	Yes / No

- Implementation process

	PDD production/Validation/Registration	
[Q18]	▪ There are many kinds of PDD forms depending on the types of the CDM projects.	Yes / No
[Q19]	▪ When the applied methodology was revised by CDM-EB, the methodology can be used if the project was requested for registration within 8 months after the revision.	Yes / No
[Q20]	▪ If project participants have already submitted PDD to DOE for its validation, they can start construction at anytime (that will not affect CDM registration).	Yes / No
[Q21]	▪ The national approval process for CDM project activities is standardized (same process) in all Non-Annex I country.	Yes / No
[Q22]	▪ Additionality should be basically established based on the information as of the time when the CDM was firstly considered by the project participants.	Yes / No

[Q23]	▪ If there is official data published by DNA such as grid emission factor or benchmark for investment analysis, project participants do not need to calculate the data by themselves.	Yes / No
[Q24]	▪ Sensitivity analysis must be made in the PDD to show investment barrier.	Yes / No
[Q25]	▪ Prior consideration is an important factor in establishing additionality.	Yes / No
[Q26]	▪ Emission calculation sheet must be attached in the PDD for its validation.	Yes / No
[Q27]	▪ The starting day of the CDM project is the day that validation started.	Yes / No
[Q28]	▪ National approval letters from related parties are necessary to be obtained before the PDD is validated by a DOE.	Yes / No
[Q29]	▪ The completeness check of a "request for registration" submitted to UNFCCC will be done immediately by UNFCCC.	Yes / No
[Q30]	▪ Once the DOE submitted a "request for registration" to UNFCCC, the project is automatically registered four weeks after its submission.	Yes / No

	Implementation/CER issuance/CER distribution	
[Q31]	▪ If there are obvious differences between specifications of actual implementation and the descriptions in the PDD, CERs cannot be issued by any means.	Yes / No
[Q32]	▪ Even if there are critical changes in the actual situations from description in the PDD, once the project is registered, no specific assessment regarding the changes are unnecessary.	Yes / No
[Q33]	▪ All the issued CERs are to be distributed among PPs.	Yes / No
[Q34]	▪ The CER distribution rate is to be decided by both DNAs of Annex I and Non-Annex I.	Yes / No
[Q35]	▪ Once the CERs are issued by CDM-EB, no claim can be made by anybody.	Yes / No

	Programme of Activities (PoA)	
[Q36]	▪ Local/regional/national policy or standard can be considered as a CDM.	Yes / No
[Q37]	▪ The physical boundary of PoA may extend more than one country.	Yes / No
[Q38]	▪ The duration of the PoA does not exceed [ ] years. (Emission reduction project)	
[Q39]	▪ The crediting period of a CPA will be a maximum of [ ] years. (Emission reduction project)	

- Environmental Impact Assessment (EIA)

  [Q40] Please list up the name of laws and the department in charge of EIA process in Sri Lanka:

  Name of law: [ ]
  Agency in charge: [ ]

- Number of CDM projects

[Q41]	▪ How many Sri Lanka's CDM projects are registered at CDM-EB?	[ ]
[Q42]	▪ How many CDM project proposals have obtained national approval of Gov't of Sri Lanka (DNA)?	[ ]

- CDM project types

  [Q43] Please check the most 2 or 3 potential project types in Sri Lanka from the table below:

[ ] Energy Efficiency	[ ] Renewable Energy
[ ] Manufacturing industries	[ ] Chemical industries
[ ] Transport	[ ] Mining/mineral production
[ ] Fugitive emissions from fuels	[ ] Waste handling/disposal
[ ] Afforestation/Reforestation	[ ] Agriculture
[ ] etc. ( )	

[Q44] Do you think what technologies and/or project ideas have big potential to be developed in Sri Lanka? Please describe it as follows:

- Certified Emission Reductions (CERs)

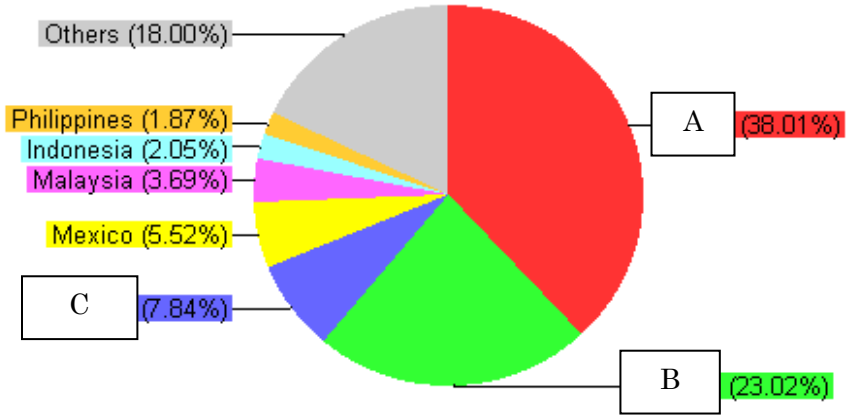
[Q45]	▪ How many percentage of issuance CERs will be deducted for SOP-Adaptation?	a) 1% b) 2% c) 3% d) 5% e) 10%

- Current CDM status

  Please refer the graph and answer the following questions.

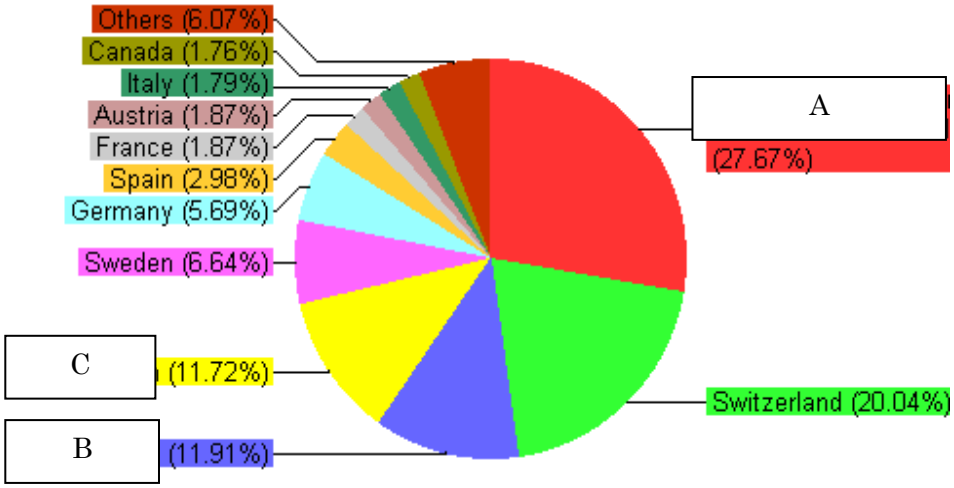
  (All data graphs quoted from the UNFCCC-CDM website (http://cdm.unfccc.int/index.html))

▪ Registered projects by Host Party



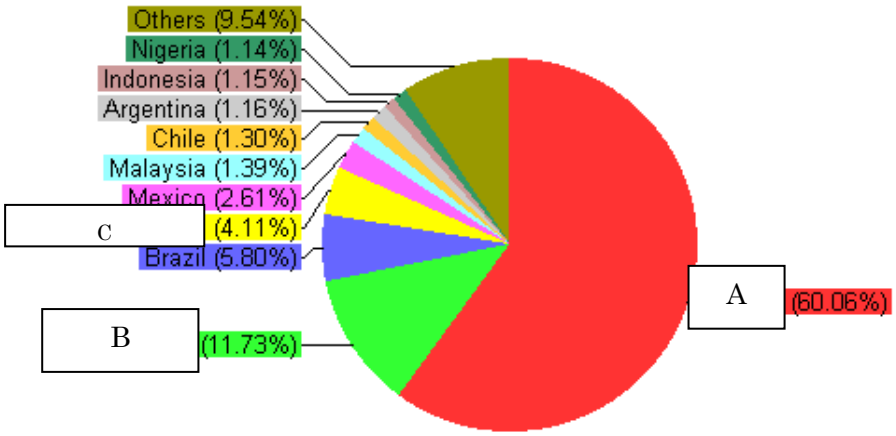
[Q46]	▪ Country name A is:	[ ]
[Q47]	▪ Country name B is:	[ ]
[Q48]	▪ Country name C is:	[ ]

▪ Registered projects by Annex-I Party



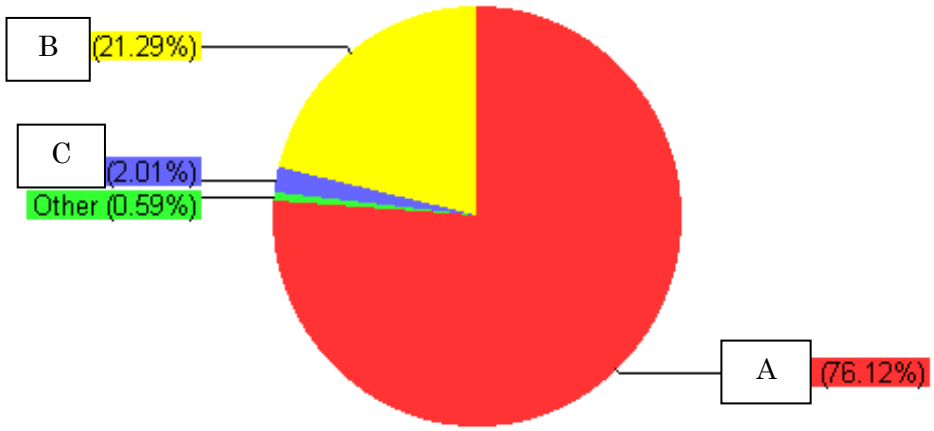
[Q49]	▪ Country name A is:	[ ]
[Q50]	▪ Country name B is:	[ ]
[Q51]	▪ Country name C is:	[ ]

▪ Expected average annual CERs from registered projects by host party



[Q52]	▪ Country name A is:	[ ]
[Q53]	▪ Country name B is:	[ ]
[Q54]	▪ Country name C is:	[ ]

▪ Registered projects by region



Please choose correct region name from a) to c).

[Q55]	▪ Region name A is:	a) Asia and the Pacific, b) Latin America, c) Africa
[Q56]	▪ Region name B is:	a) Asia and the Pacific, b) Latin America, c) Africa
[Q57]	▪ Region name C is:	a) Asia and the Pacific, b) Latin America, c) Africa

CAPACITY ASSESSMENT SHEET
(CDM Questionnaire)

Prepared by: JICA Expert Team, May 2010

Name: (JICA Experts)

Position:

Please answer the following questions.
Some questions are required to check (✓) or circle to "Yes" or "No".
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[✓]	Stabilization of Greenhouse Gas (GHG) concentrations in the atmosphere

- Kyoto Protocol

Kyoto Protocol sets binding targets for Annex I Parties for reducing GHG.

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Kyoto Protocol offers Annex I Parties an additional means of meeting their targets by way of three (3) market-based mechanisms.

[Q3] Please list up the name of the mechanisms:

[Clean Development Mechanisms (CDM)]
[Joint Implementation (JI)]
[(International) Emission Trading]

- Brief history of the COP and the COP/MOP

  [Q4] Please describe lines to connect event name and each COP meeting.

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[Q5]	▪ Did Gov't of Sri Lanka submit their voluntary mitigation actions (NAMAs) based on the Copenhagen Accord yet?	Yes / ✓No

- CDM Eligibility

  Please choose yes or no about CDM eligibility for the current scheme (1st commitment period, 2008-2012)

[Q6]	▪ Land Use, Land-Use Change and Forestry (LULUCF)	✓Yes / No
[Q7]	▪ Reduced Emissions from Deforestation and forest Degradation (REDD)	Yes / ✓No
[Q8]	▪ Nuclear Power Plant	Yes / ✓No
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- DNA

[Q10]	▪ Does DNA need to confirm the CDM project activity assists it in achieving sustainable development?	✓Yes / No
[Q11]	▪ Who can request for issuance of Letter of Approval by DNA?	[Project Participants]

- DOE

[Q12] Please list up the main two roles of DOE:

[Validation]
[Verification (Verification/Certification)]

Please choose yes or no about description of DOE

	Roles of DOE	
[Q13]	▪ DOE has responsibility to register the project for project participants once they made contract with PP.	Yes / ✓No
[Q14]	▪ For any project one DOE cannot do validation and verification process.	✓Yes / No
[Q15]	▪ DOE is responsible for communicating with DNAs on behalf of the project participants.	Yes / ✓No
[Q16]	▪ DOE is responsible for communicating with CDM Executive Board on behalf of the project participants.	✓Yes / No
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[Q22]	▪ Additionality should be basically established based on the information as of the time when the CDM was firstly considered by the project participants.	✓Yes / No

[Q23]	▪ If there is official data published by DNA such as grid emission factor or benchmark for investment analysis, project participants do not need to calculate the data by themselves.	✓Yes / No
[Q24]	▪ Sensitivity analysis must be made in the PDD to show investment barrier.	✓Yes / No
[Q25]	▪ Prior consideration is an important factor in establishing additionality.	✓Yes / No
[Q26]	▪ Emission calculation sheet must be attached in the PDD for its validation.	✓Yes / No
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[Q28]	▪ National approval letters from related parties are necessary to be obtained before the PDD is validated by a DOE.	Yes / ✓No
[Q29]	▪ The completeness check of a "request for registration" submitted to UNFCCC will be done immediately by UNFCCC.	Yes / ✓No
[Q30]	▪ Once the DOE submitted a "request for registration" to UNFCCC, the project is automatically registered four weeks after its submission.	Yes / ✓No

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	Programme of Activities (PoA)	
[Q36]	▪ Local/regional/national policy or standard can be considered as a CDM.	Yes / ✓No
[Q37]	▪ The physical boundary of PoA may extend more than one country.	✓Yes / No
[Q38]	▪ The duration of the PoA not exceed [28] years. (Emission reduction project)	
[Q39]	▪ The crediting period of a CPA will be a maximum of [7] years. (Emission reduction project)	

- Environmental Impact Assessment (EIA)

  [Q40] Please list up the name of laws and the department in charge of EIA process in Sri Lanka:

  Name of law: [?]
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- Number of CDM projects

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[Q44] Do you think what technologies and/or project ideas have big potential to be developed in Sri Lanka? Please describe it as follows:

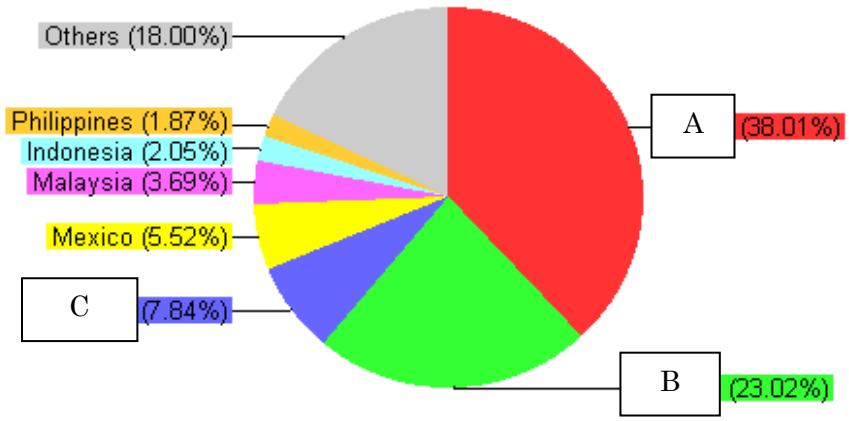
- Certified Emission Reductions (CERs)

[Q45]	▪ How many percentage of issuance CERs will be deducted for SOP-Adaptation?	a) 1% ✓b) 2% c) 3% d) 5% e) 10%

- Current CDM status

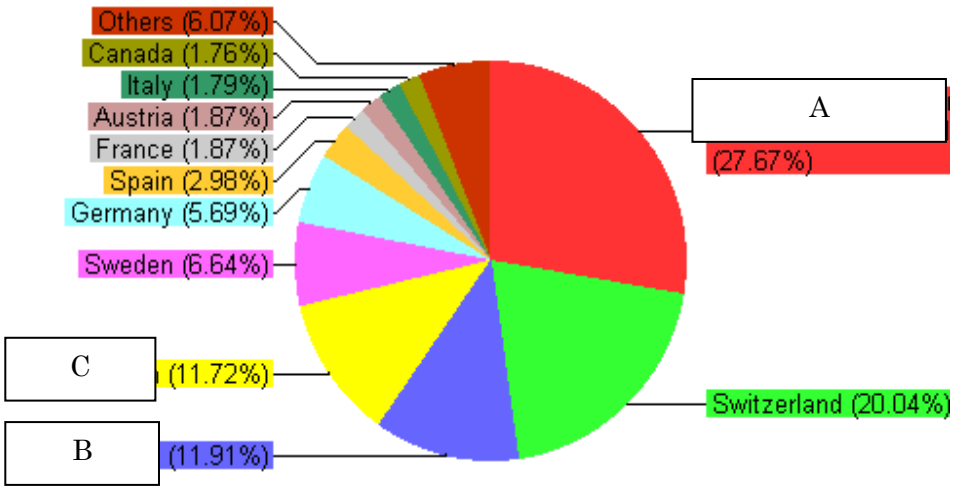
  Please refer the graph and answer the following questions.

▪ Registered projects by Host Party



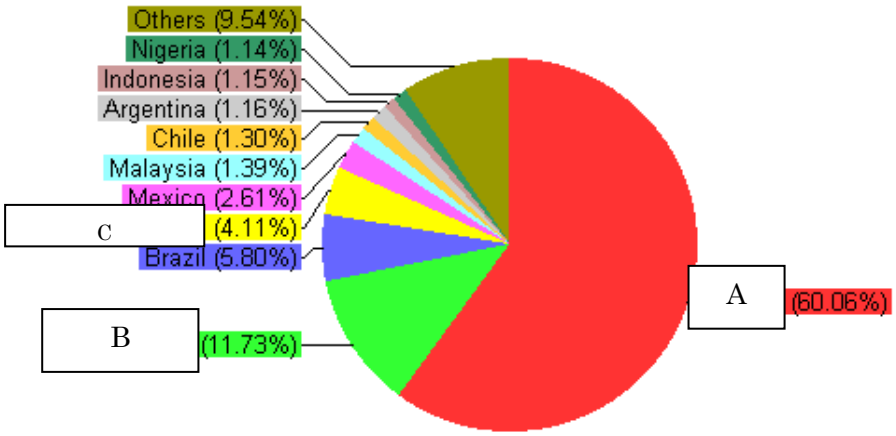
[Q46]	▪ Country name A is:	[China]
[Q47]	▪ Country name B is:	[India]
[Q48]	▪ Country name C is:	[Brazil]

▪ Registered projects by Annex-I Party



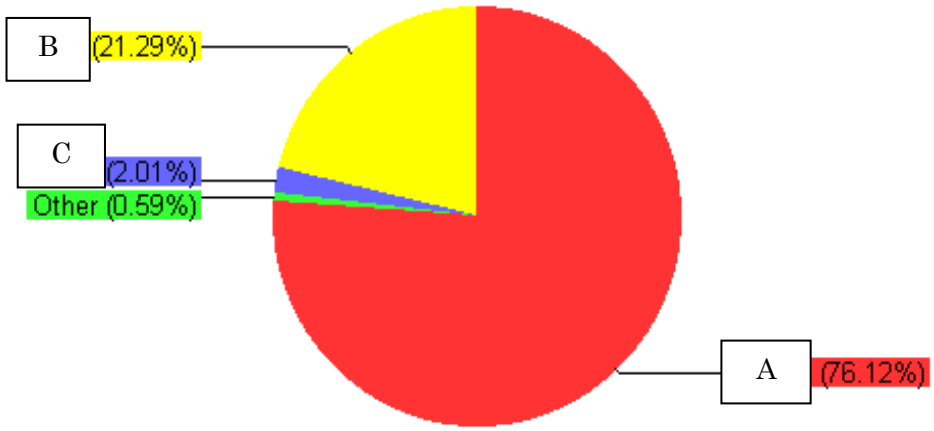
[Q49]	▪ Country name A is:	[UK]
[Q50]	▪ Country name B is:	[Netherlands]
[Q51]	▪ Country name C is:	[Japan]

▪ Expected average annual CERs from registered projects by host party



[Q52]	▪ Country name A is:	[China]
[Q53]	▪ Country name B is:	[India]
[Q54]	▪ Country name C is:	[Republic of Korea]

▪ Registered projects by region



Please choose correct region name from (1) to (3).

[Q55]	▪ Region name A is:	✓(1) Asia and the Pacific, (2) Latin America, (3) Africa
[Q56]	▪ Region name B is:	(1) Asia and the Pacific, ✓(2) Latin America, (3) Africa
[Q57]	▪ Region name C is:	(1) Asia and the Pacific, (2) Latin America, ✓(3) Africa

CAPACITY ASSESSMENT SHEET
(CDM Questionnaire)

Prepared by: JICA Expert Team, May 2011

Name:

Position:

Answer the questions below.

- UNFCCC's objective

[Q1] Which of the sentences below correctly describes the ultimate objective of the UNFCCC?

[ ]	Reduce Greenhouse Gas (GHG) emission 5% against 1990 levels
[ ]	Achieve Sustainable Development and Greenhouse Gas (GHG) emission reduction
[ ]	Stabilization of Greenhouse Gas (GHG) concentrations in the atmosphere

- Kyoto Protocol

[Q2]	▪ Choose the correct GHGs emission reduction target set against 1990 level for ANNEX I Parties to be achieved during the 5-year period from 2008 to 2012.	a) 2% b) 3% c) 5% d) 10% e) 20%

[Q3] Describe the 3 (three) names of flexibility mechanisms introduced in the Kyoto Protocol, that partially allow ANNEX I Parties to reduce GHGs emission reduction outside their countries

[ ]
[ ]
[ ]

- Brief history of the COP and the COP/MOP

[Q4] Connect each adopted document in the left column with the appropriate COP meetings in the right column.

<Event (Adopted document>			<COP meeting>
Copenhagen Accord	●	●	COP3
Marrakesh Accord	●	●	COP4
Kyoto Protocol	●	●	COP7
Bali Action Plan	●	●	COP12/CMP2
Buenos Aires Plan of Action	●	●	COP13/CMP3
Nairobi Framework	●	●	COP15/CMP5

- Copenhagen Accord

[Q5]	▪ Has the Government of Sri Lanka already submitted its voluntary mitigation actions based on the Copenhagen Accord?	Yes / No

- CDM Eligibility

  Answer by "yes" or "no" about whether the activities/projects in the following sectors/areas are eligible as CDM.

[Q6]	▪ Land Use, Land-Use Change and Forestry (LULUCF)	Yes / No
[Q7]	▪ Reduced Emissions from Deforestation and forest Degradation (REDD)	Yes / No
[Q8]	▪ Nuclear Power Plant	Yes / No
[Q9]	▪ Carbon Capture and Storage (CCS)	Yes / No

- DNA's roles and responsibilities

  Answer by "right" or "wrong" about the following sentences that describe DNA.

[Q10]	▪ DNA is required to check if the proposed CDM project activities comply with the nationally determined sustainability criteria.	Right /Wrong
[Q11]	▪ CDM project proponents can request DNA for issuance of host country approval only after their PDD has been validated by DOE.	Right /Wrong

- DOE's roles and responsibilities

  Answer by "right" or "wrong" about the following sentences that describe DOE.

[Q12]	▪ DOE has a responsibility to register the project for project participants once they contract with PP.	Right /Wrong
[Q13]	▪ For small-scale CDM projects, the same DOE can perform both validation and verification for the same project.	Right /Wrong
[Q14]	▪ DOE has a responsibility to communicate with DNAs on behalf of the project participants.	Right /Wrong
[Q15]	▪ DOE has a responsibility to communicate with the CDM Executive Board on behalf of the project participants.	Right /Wrong
[Q16]	▪ DOE has a responsibility to supplement the shortage of issued CERs by erroneous inclusion of CPAs under PoA.	Right /Wrong

- CDM Project Registration Process (PDD Development/Validation/Registration)

  Answer by "right" or "wrong" about the following sentences that discusses about CDM project registration process and requirement.

[Q17]	▪ There are various kinds of PDD forms depending on the types of the CDM projects.	Right /Wrong
[Q18]	▪ If the approved methodology that you utilize in the PDD of your CDM project is revised by the decision of CDM-EB, you also have to revise it accordingly unless making a registration request of your CDM project within 8 months after the date of the above CDM-EB decision.	Right /Wrong
[Q19]	▪ If project participants have already submitted PDD to DOE for validation, project participants can start project's construction at anytime (that will not affect CDM registration).	Right /Wrong
[Q20]	▪ The national approval process for CDM project activities is uniformed (same process) in all Non-Annex I country.	Right /Wrong
[Q21]	▪ Additionality should be principally established based on the information at the time of CDM project incepted by the project participants.	Right /Wrong
[Q22]	▪ If the official data sets, such as grid emission factor or investment benchmark, are available in the country, project participants do not need to calculate them by themselves.	Right /Wrong
[Q23]	▪ Sensitivity analysis is required in the PDD to demonstrate investment barrier of the proposed CDM project.	Right /Wrong
[Q24]	▪ For project activities with a starting date on or after 02 August 2008, the project participant must inform a Host Party DNA and/or the UNFCCC secretariat in writing of the commencement period of the project activity and of their intention to seek CDM status within 6 months of the project activity start date.	Right /Wrong
[Q25]	▪ Emission calculation sheet must be attached in the PDD for its validation.	Right /Wrong
[Q26]	▪ The starting day of the CDM project is the day that the validation starts.	Right /Wrong
[Q27]	▪ Once the DOE submitted a "request for registration" to UNFCCC, the project is automatically registered four weeks after DOE made a submission.	Right /Wrong

	Implementation/CER issuance/CER distribution	
[Q28]	▪ If there are obvious differences between specifications of actual implementation and the descriptions in the PDD, CERs cannot be issued by any means.	Right/Wrong

[Q29]	▪ Even if there are deviations in the actual situations from original PDD, once the project is registered, no assessment regarding deviations are required.	Right/Wrong
[Q30]	▪ The proportion of CER distribution is decided by both DNAs of Annex I and Non-Annex I countries.	Right/Wrong

	Programme of Activities (PoA)	
[Q31]	▪ Local/regional/national policies or standards can be considered as Programmatic CDM projects.	Right/Wrong
[Q32]	▪ The physical boundary of PoA may extend more than one country.	Right/Wrong

Complete the sentences below by filling the blank with the correct numbers

[Q33]	▪ The duration of the PoA does not exceed [ ] years. (Emission reduction project)
[Q34]	▪ The crediting period of a CPA will be a maximum of [ ] years. (Emission reduction project)

- Environmental Impact Assessment (EIA)

  Specify the name of laws and the government agency in charge of EIA process in Sri Lanka:

  [Q35] Name of law: [ ]
  [Q36] Agency in charge: [ ]

- Number of CDM projects

  Answer the questions below.

[Q37]	▪ How many Sri Lanka's CDM projects are registered at CDM-EB as of May 2011?	[ ]

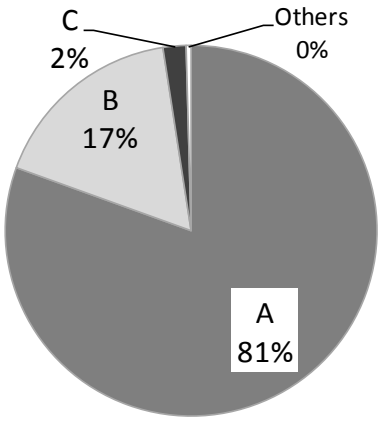
- Certified Emission Reductions (CERs)

  Choose the correct answer to the question below.

[Q38]	▪ How many percentage of issuance CERs will be deducted for SOP-Adaptation?	a) 1% b) 2% c) 3% d) 5% e) 10%

- Current CDM status (All data graphs quoted from the UNFCCC-CDM website (http://cdm.unfccc.int/index.html) (as of 5 May 2011))

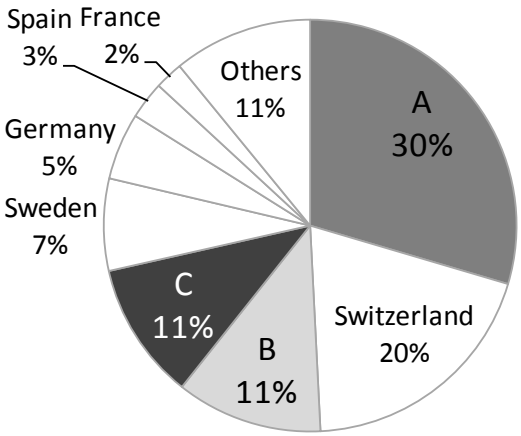
▪ Registered projects by region



[Q39] Choose the correct combination of regions for A, B and C in the pie chart above.

	A) Asia and the Pacific,	B) Latin America,	C) Africa
	A) Asia and the Pacific,	B) Africa	C) Latin America,
	A) Latin America,	B) Asia and the Pacific,	C) Africa
	A) Africa	B) Asia and the Pacific,	C) Latin America,

- Registered projects by Annex-I Party



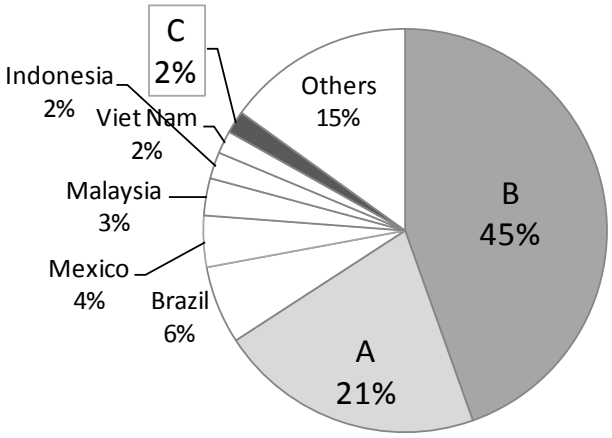
Answer the country names of A, B, and C in the pie chart above.

[Q40]	▪ Country name A is:	[ ]
[Q41]	▪ Country name B is:	[ ]
[Q42]	▪ Country name C is:	[ ]

- Registered projects and CER issuance by Host Party

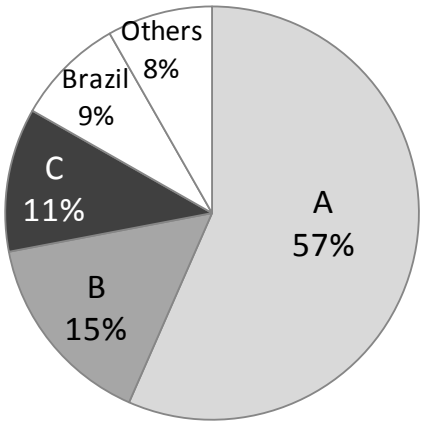
Registered Project Activities by Host Party

(Total: 3,055 projects)



CER Issuance by Host Party

(Total: 609 million tCO2)



Answer the country names of A, B, and C in the pie chart above.

[Q43]	▪ Country name A is:	[ ]
[Q44]	▪ Country name B is:	[ ]
[Q45]	▪ Country name C is:	[ ]

- NAMA

Choose which of the titles below represents NAMA		
[Q46]	▪ Nairobi Action for Mitigation Activities	[ ]
	▪ Nationally Appropriate Mitigation Actions	[ ]
	▪ National Adaptation Measurement Activities	[ ]

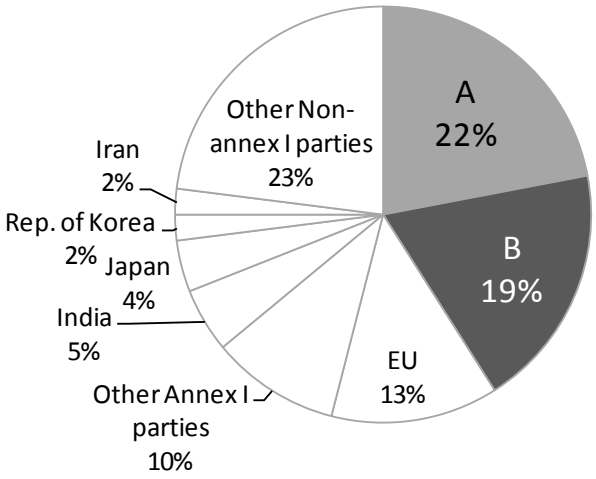
- Outcomes of recent negotiation at the UNFCCC meetings

Answer by "right or wrong to the following explanations about the outcomes of the COP16 and the COP/MOP6 (at Cancun, Mexico, December 2010)		
[Q47]	▪ "Copenhagen Accord" failed to be adopted at COP15, but "Cancun Agreement" was adopted at the COP16.	Right/Wrong
[Q48]	▪ "Cancun Agreement" is based on the "Copenhagen Accord" (COP15).	Right/Wrong
[Q49]	▪ "Cancun Agreement" contained "Quantified Emission Limitation and Reduction Objectives (QELROs)" of Annex I Parties. (e.g. EU: -20/30%, Japan: -25%, US: -17%, etc.)	Right/Wrong
[Q50]	▪ Non-Annex I Parties agreed to their mandatory actions for mitigation at COP16.	Right/Wrong
[Q51]	▪ Non-Annex I Parties claimed that post-2012 negotiation of climate change should be based on the "Bali Action Plan".	Right/Wrong
[Q52]	▪ Ad-hoc Working Group (AWG) meetings terminated their mission after adoption of "Cancun Agreement".	Right/Wrong

- Country's position over the recent negotiation at the UNFCCC meetings

Please answer by "right or wrong" about the sentences below that discuss each country's view and position on the current UNFCCC negotiation below.		
[Q53]	▪ China agreed to accept its commitment of GHG emission reduction in next commitment period/framework.	Right/Wrong
[Q54]	▪ Cook Islands and other small island countries (AOSIS) claimed that not only Annex I Parties but also major GHG emitters, including Non-Annex I Parties, have to commit reduce GHG emission mandatory.	Right/Wrong
[Q55]	▪ Japan disagreed to accept 2nd commitment period of Kyoto Protocol after 2013. Japan claimed to establish a new legally-binding framework impartiality and effectiveness with participation of all major economies.	Right/Wrong
[Q56]	▪ EU's GHG emission reduction commitment for 2020 (in 2nd Commitment period) is "-30%" based on 2005 level without any conditions.	Right/Wrong

▪ Estimation of share of GHG emission in the world (in 2nd commitment period, 2013-2020)



Answer the country names of A, B in the pie chart above.

[Q57]	▪ Country name A (22%) is:	[ ]
[Q58]	▪ Country name B (19%) is:	[ ]

CAPACITY ASSESSMENT SHEET
(CDM Questionnaire)

Prepared by: JICA Expert Team, May 2011

Name:

Position:

Answer the questions below.

- UNFCCC's objective

[Q1] Which of the sentences below correctly describes the ultimate objective of the UNFCCC?

[ ]	Reduce Greenhouse Gas (GHG) emission 5% against 1990 levels
[ ]	Achieve Sustainable Development and Greenhouse Gas (GHG) emission reduction
[○]	Stabilization of Greenhouse Gas (GHG) concentrations in the atmosphere

- Kyoto Protocol

[Q2]	▪ Choose the correct GHGs emission reduction target set against 1990 level for ANNEX I Parties to be achieved during the 5-year period from 2008 to 2012.	a) 2% b) 3% (c) 5% d) 10% e) 20%

[Q3] Describe the 3 (three) names of flexibility mechanisms introduced in the Kyoto Protocol, that partially allow ANNEX I Parties to reduce GHGs emission reduction outside their countries

[Clean Development Mechanism (CDM)]
[Joint Implementation (JI)]
[(International) Emission Trading (ET)]

- Brief history of the COP and the COP/MOP

[Q4] Connect each adopted document in the left column with the appropriate COP meetings in the right column.

<Event (Adopted document>	<COP meeting>
Copenhagen Accord	COP3
Marrakesh Accord	COP4
Kyoto Protocol	COP7
Bali Action Plan	COP12/CMP2
Buenos Aires Plan of Action	COP13/CMP3
Nairobi Framework	COP15/CMP5

- Copenhagen Accord

[Q5]	▪ Has the Government of Sri Lanka already submitted its voluntary mitigation actions based on the Copenhagen Accord?	Yes / (No)

- CDM Eligibility

  Answer by "yes" or "no" about whether the activities/projects in the following sectors/areas are eligible as CDM.

[Q6]	▪ Land Use, Land-Use Change and Forestry (LULUCF)	(Yes) / No
[Q7]	▪ Reduced Emissions from Deforestation and forest Degradation (REDD)	Yes / (No)
[Q8]	▪ Nuclear Power Plant	Yes / (No)
[Q9]	▪ Carbon Capture and Storage (CCS)	Yes / (No)

- DNA's roles and responsibilities

  Answer by "right" or "wrong" about the following sentences that describe DNA.

[Q10]	▪ DNA is required to check if the proposed CDM project activities comply with the nationally determined sustainability criteria.	(Right)/Wrong
[Q11]	▪ CDM project proponents can request DNA for issuance of host country approval only after their PDD has been validated by DOE.	Right /(Wrong)

- DOE's roles and responsibilities

  Answer by "right" or "wrong" about the following sentences that describe DOE.

[Q12]	▪ DOE has a responsibility to register the project for project participants once they contract with PP.	Right /(Wrong)
[Q13]	▪ For small-scale CDM projects, the same DOE can perform both validation and verification for the same project.	(Right)/Wrong
[Q14]	▪ DOE has a responsibility to communicate with DNAs on behalf of the project participants.	Right /(Wrong)
[Q15]	▪ DOE has a responsibility to communicate with the CDM Executive Board on behalf of the project participants.	(Right)/Wrong
[Q16]	▪ DOE has a responsibility to supplement the shortage of issued CERs by erroneous inclusion of CPAs under PoA.	(Right)/Wrong

- CDM Project Registration Process (PDD Development/Validation/Registration)

  Answer by "right" or "wrong" about the following sentences that discusses about CDM project registration process and requirement.

[Q17]	▪ There are various kinds of PDD forms depending on the types of the CDM projects.	(Right)/Wrong
[Q18]	▪ If the approved methodology that you utilize in the PDD of your CDM project is revised by the decision of CDM-EB, you also have to revise it accordingly unless making a registration request of your CDM project within 8 months after the date of the above CDM-EB decision.	(Right)/Wrong
[Q19]	▪ If project participants have already submitted PDD to DOE for validation, project participants can start project's construction at anytime (that will not affect CDM registration).	Right /(Wrong)
[Q20]	▪ The national approval process for CDM project activities is uniformed (same process) in all Non-Annex I country.	Right /(Wrong)
[Q21]	▪ Additionality should be principally established based on the information at the time of CDM project incepted by the project participants.	(Right)/Wrong
[Q22]	▪ If the official data sets, such as grid emission factor or investment benchmark, are available in the country, project participants do not need to calculate them by themselves.	(Right)/Wrong
[Q23]	▪ Sensitivity analysis is required in the PDD to demonstrate investment barrier of the proposed CDM project.	(Right)/Wrong
[Q24]	▪ For project activities with a starting date on or after 02 August 2008, the project participant must inform a Host Party DNA and/or the UNFCCC secretariat in writing of the commencement period of the project activity and of their intention to seek CDM status within 6 months of the project activity start date.	Right /(Wrong)
[Q25]	▪ Emission calculation sheet must be attached in the PDD for its validation.	(Right)/Wrong
[Q26]	▪ The starting day of the CDM project is the day that the validation starts.	Right /(Wrong)
[Q27]	▪ Once the DOE submitted a "request for registration" to UNFCCC, the project is automatically registered four weeks after DOE made a submission.	Right /(Wrong)

	Implementation/CER issuance/CER distribution	
[Q28]	▪ If there are obvious differences between specifications of actual implementation and the descriptions in the PDD, CERs cannot be issued by any means.	Right/(Wrong)

[Q29]	▪ Even if there are deviations in the actual situations from original PDD, once the project is registered, no assessment regarding deviations are required.	Right/(Wrong)
[Q30]	▪ The proportion of CER distribution is decided by both DNAs of Annex I and Non-Annex I countries.	Right/(Wrong)

	Programme of Activities (PoA)	
[Q31]	▪ Local/regional/national policies or standards can be considered as Programmatic CDM projects.	(Right)/Wrong
[Q32]	▪ The physical boundary of PoA may extend more than one country.	(Right)/Wrong

Complete the sentences below by filling the blank with the correct numbers

[Q33]	▪ The duration of the PoA does not exceed [28] years. (Emission reduction project)
[Q34]	▪ The crediting period of a CPA will be a maximum of [7] years. (Emission reduction project)

- Environmental Impact Assessment (EIA)

  Specify the name of laws and the government agency in charge of EIA process in Sri Lanka:

  [Q35] Name of law: [National Environment Act of 1988]
  [Q36] Agency in charge: [Central Environment Authority (CEA)]

- Number of CDM projects

  Answer the questions below.

[Q37]	▪ How many Sri Lanka's CDM projects are registered at CDM-EB as of May 2011?	[7]

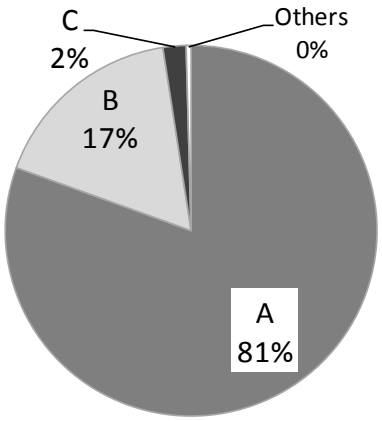
- Certified Emission Reductions (CERs)

  Choose the correct answer to the question below.

[Q38]	▪ How many percentage of issuance CERs will be deducted for SOP-Adaptation?	a) 1% (b) 2% c) 3% d) 5% e) 10%

- Current CDM status (All data graphs quoted from the UNFCCC-CDM website (http://cdm.unfccc.int/index.html) (as of 5 May 2011))

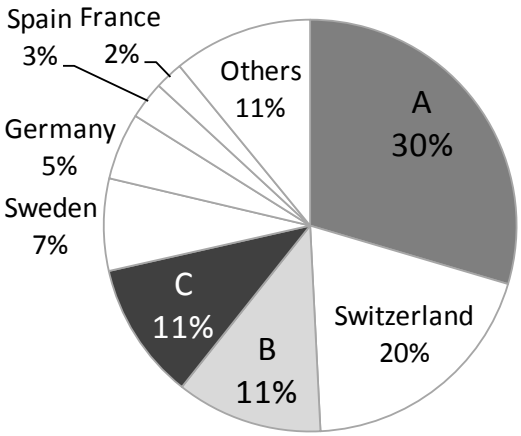
▪ Registered projects by region



[Q39] Choose the correct combination of regions for A, B and C in the pie chart above.

○	A) Asia and the Pacific,	B) Latin America,	C) Africa
	A) Asia and the Pacific,	B) Africa	C) Latin America,
	A) Latin America,	B) Asia and the Pacific,	C) Africa
	A) Africa	B) Asia and the Pacific,	C) Latin America,

▪ Registered projects by Annex-I Party



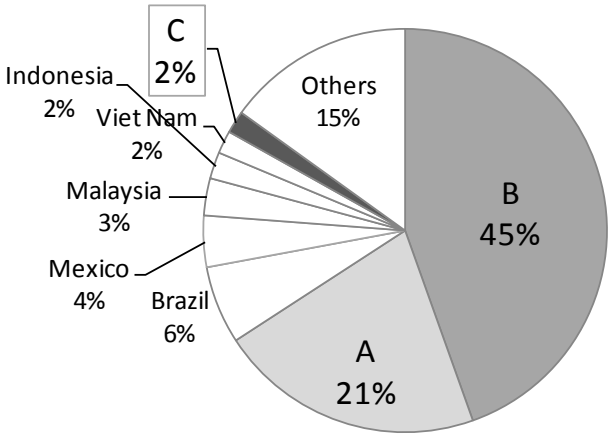
Answer the country names of A, B, and C in the pie chart above.

[Q40]	▪ Country name A is:	[United Kingdom (UK)]
[Q41]	▪ Country name B is:	[Japan]
[Q42]	▪ Country name C is:	[Netherlands]

▪ Registered projects and CER issuance by Host Party

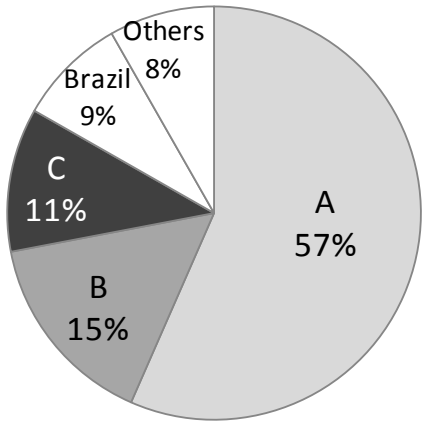
Registered Project Activities by Host Party

(Total: 3,055 projects)



CER Issuance by Host Party

(Total: 609 million tCO2)



Answer the country names of A, B, and C in the pie chart above.

[Q43]	▪ Country name A is:	[China]
[Q44]	▪ Country name B is:	[India]
[Q45]	▪ Country name C is:	[Republic of Korea]

- NAMA

Choose which of the titles below represents NAMA		
[Q46]	▪ Nairobi Action for Mitigation Activities	[ ]
	▪ Nationally Appropriate Mitigation Actions	[○]
	▪ National Adaptation Measurement Activities	[ ]

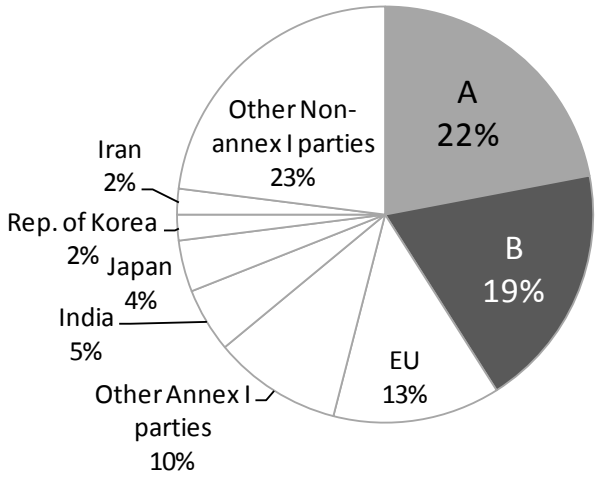
- Outcomes of recent negotiation at the UNFCCC meetings

Answer by "right or wrong to the following explanations about the outcomes of the COP16 and the COP/MOP6 (at Cancun, Mexico, December 2010)		
[Q47]	▪ "Copenhagen Accord" failed to be adopted at COP15, but "Cancun Agreement" was adopted at the COP16.	(Right)/Wrong
[Q48]	▪ "Cancun Agreement" is based on the "Copenhagen Accord" (COP15).	(Right)/Wrong
[Q49]	▪ "Cancun Agreement" contained "Quantified Emission Limitation and Reduction Objectives (QELROs)" of Annex I Parties. (e.g. EU: -20/30%, Japan: -25%, US: -17%, etc.)	Right/(Wrong)
[Q50]	▪ Non-Annex I Parties agreed to their mandatory actions for mitigation at COP16.	Right/(Wrong)
[Q51]	▪ Non-Annex I Parties claimed that post-2012 negotiation of climate change should be based on the "Bali Action Plan".	(Right)/Wrong
[Q52]	▪ Ad-hoc Working Group (AWG) meetings terminated their mission after adoption of "Cancun Agreement".	(Right)/Wrong

- Country's position over the recent negotiation at the UNFCCC meetings

Please answer by "right or wrong" about the sentences below that discuss each country's view and position on the current UNFCCC negotiation below.		
[Q53]	▪ China agreed to accept its commitment of GHG emission reduction in next commitment period/framework.	Right/(Wrong)
[Q54]	▪ Cook Islands and other small island countries (AOSIS) claimed that not only Annex I Parties but also major GHG emitters, including Non-Annex I Parties, have to commit reduce GHG emission mandatory.	(Right)/Wrong
[Q55]	▪ Japan disagreed to accept 2nd commitment period of Kyoto Protocol after 2013. Japan claimed to establish a new legally-binding framework impartiality and effectiveness with participation of all major economies.	(Right)/Wrong
[Q56]	▪ EU's GHG emission reduction commitment for 2020 (in 2nd Commitment period) is "-30%" based on 2005 level without any conditions.	Right/(Wrong)

▪ Estimation of share of GHG emission in the world (in 2nd commitment period, 2013-2020)



Answer the country names of A, B in the pie chart above.

[Q57]	▪ Country name A (22%) is:	[China]
[Q58]	▪ Country name B (19%) is:	[USA]

Functional Background Of CDM

24 JUN 2010, Ai Kawamura JICA Expert Team

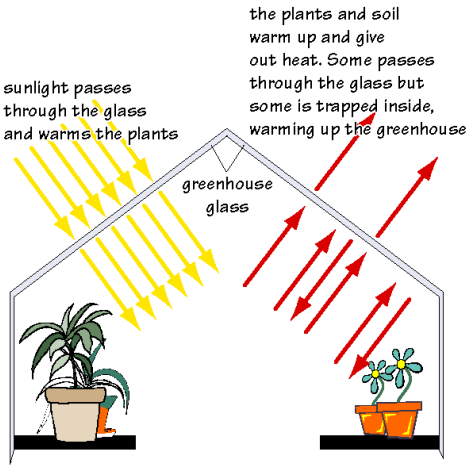
CONTENTS

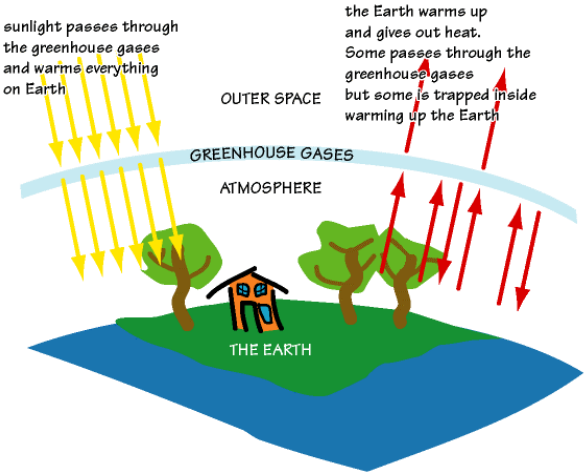
1. KYOTO PROTOCOL & CDM

1-1. CLIMATE CHANGE & GHGS(1)

- **Greenhouse Gases (GHGs) and Global Warming**

Temperature on the earth is determined as the result of a balance between the radiation from the Sun and infrared radiation from the earth. GHGs, by behaving like the glass in greenhouse, play the role of controlling this balance as shown in the figure below.





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1-1. Climate Change & GHGs(2)

Increased GHGs in atmosphere trap more heat that should have given out back to the outer space.

Global temperature is increasing (Global Warming).

If it further continues

-Average global temperature will increase by 1.4 to 5.8 degree centigrade in the next 100 years.

- Sea level may rise by about 1 meter by 2100.

- **Melting of glaciers (e.g., Himalaya, East Nepal)**
- **More frequent and serious floods**
- **Expansion tropical epidemic/disease**

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1-2. Kyoto Protocol & CDM(1)

IMPORTANT TERMS

Annex I Parties	**Developed countries** and economies-in-transition countries that commit themselves to achieve certain quantified emission limitation and reduction objectives. By ratifying the KP, they can participate in CDM projects as **investing countries**.
Non-Annex I Parties	Countries to the Kyoto Protocol but are not listed in Annex I to the UNFCCC, generally **developing countries** that are eligible to be **host countries for CDM projects**. ***(Sri Lanka is included in this category)***
Certified Emission Reduction (CER)	The **tradable units of the CDM** in one tonne of carbon dioxide-equivalent (CO2-e).
UNFCCC (The United Nations Framework Convention on Climate Change)	A multilateral convention **aiming at stabilising GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system** (UNFCCC, Article2).

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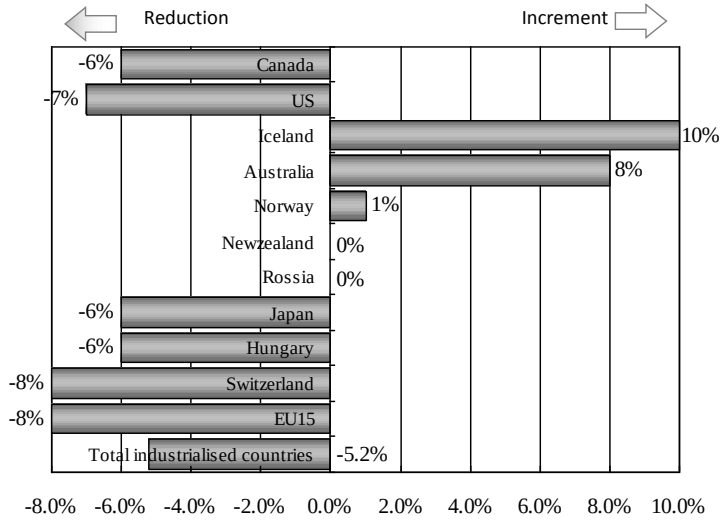
1-2.KYOTO PROTOCOL & CDM(2)

• KYOTO PROTOCOL

The Kyoto Protocol (KP) was adopted at COP3 in Dec. 1997 (KP entered into force on 16 Feb. 2005)

GHGs emission reduction commitment of Annex I countries



GHGs
CO2
CH4
N2O
HFCs
PFCs
SF6

8

1-2.KYOTO PROTOCOL & CDM(3)

• FLEXIBILITY MECHANISM UNDER KYOTO PROTOCOL

KP introduces flexibility market mechanisms (“Kyoto Mechanisms”)

There are mechanisms designed to help Annex 1 Parties reduce the costs of meeting their emission targets by achieving emission reductions at lower costs in other countries than they could domestically such as:

- Clean Development Mechanism (CDM)<Art.12 of the KP>
- Joint Implementation (JI) <Art.6 of the KP>
- Emissions Trading (ET) <Art.17 of the KP>

2. What is CDM?

p. 1 ~3 of

CDM/JI Manual

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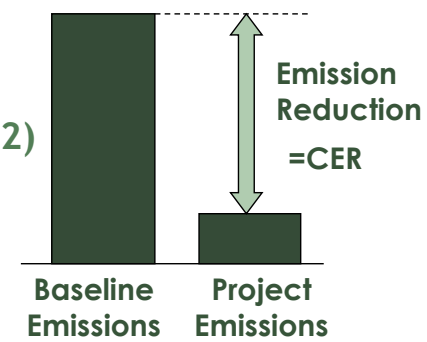
2-1. What Is CDM(1)

- The only mechanism applicable to both Annex I & non-Annex I parties **(Sri Lanka is included in non-Annex I parties)**
- The reduced amount of GHGs certified by CDM Executive Board (UNFCCC) becomes carbon credits called “Certified Emission Reductions (CERs)” which can be transferred/traded to Annex I parties
- The reduced amount of GHGs resulting from a CDM project can be used as part of quantified emission reduction targets for Annex I parties
- The unit of CER is ton of carbon dioxide (tCO_2)
- CER can be dealt at market

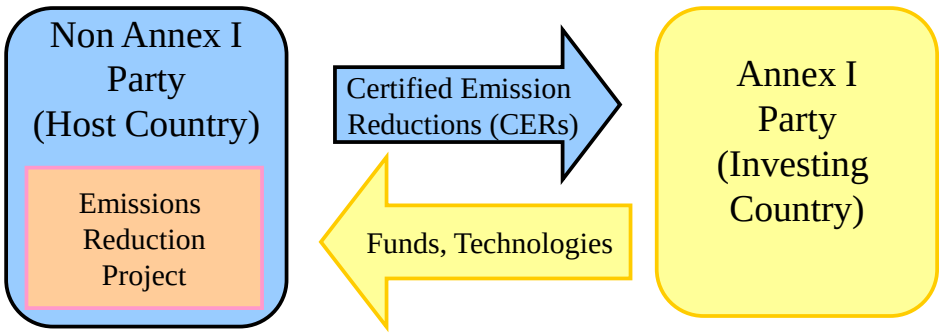


11

2-1. What Is CDM(2)

Purpose of the Mechanism:

- To assist Non-Annex I parties (developing countries)
  - in achieving sustainable development and
  - in contributing to the ultimate objective of the Convention
- To assist Annex I parties (developed & economies-in-transition countries)
  - in achieving compliance with their commitments.



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2-2. Requirements for CDM

- A CDM project activity must contribute "Sustainable Development" of host countries.
- To be registered as CDM, the project must comply with the following conditions< Para 5. Art.12 of the KP >:

- The Project must be implemented on the basis of voluntary participation approved by each Party involved;
- The Project must have real, measurable, and long-term benefits related to the mitigation of climate change; and
- **Emission reduction achieved by the Project must be additional to any that would occur in the absence of the certified project activity. (Additionality)**

⇒ Basically activities mandated by the law are not applicable

⇒ Monitoring work is required

⇒ Additionality establishment is required

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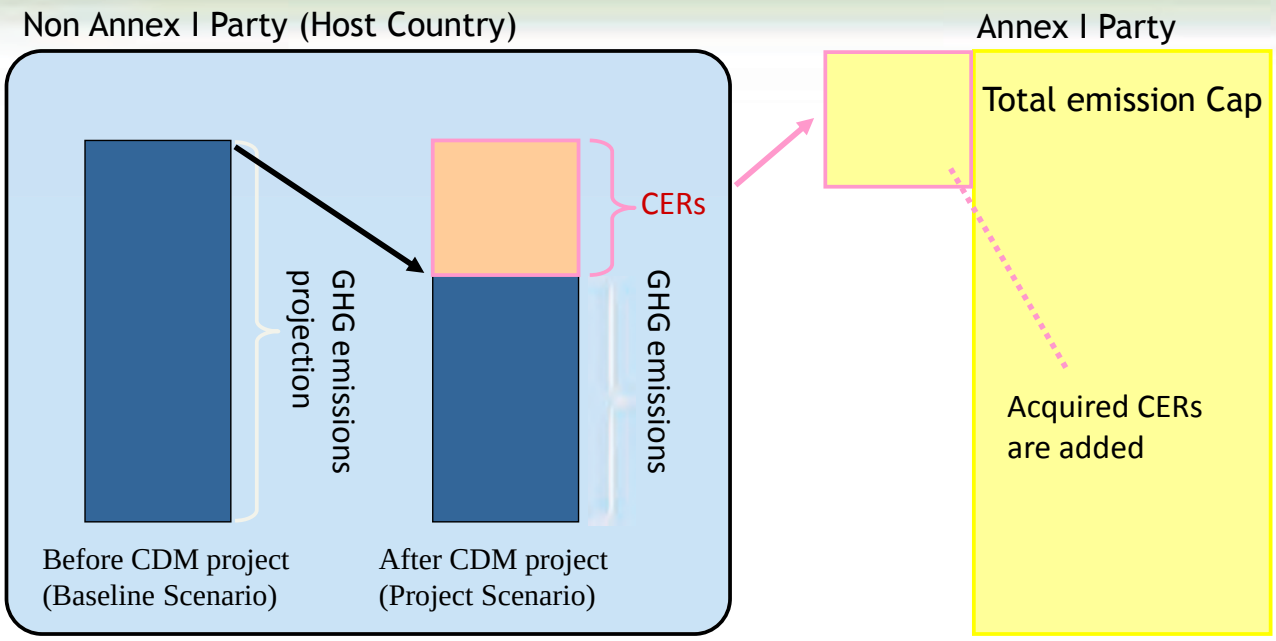
2-3. Mechanisms of CDM



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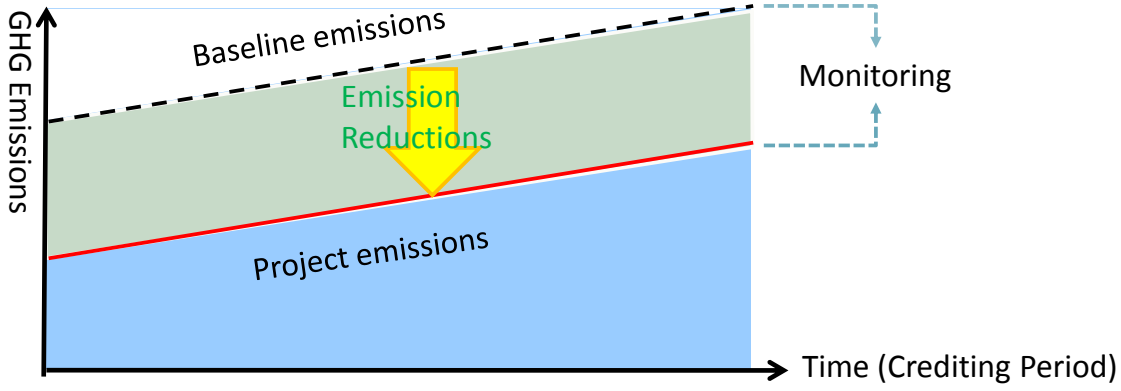
2-4. Baseline Scenario & Project Scenario

- Baseline Scenario: the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed project activity (3/CMP.1, Annex, para 44).
- Project Scenario: A proposed CDM project.



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2-4. Baseline Scenario & Project Scenario

- A baseline (scenario and emissions) shall be established:
  - through approved and new methodologies;
  - in a transparent and conservative manner regarding the choice of approaches, assumptions, methodologies, parameters, data sources, key factors and additionality, and taking into account uncertainty;
  - on a project-specific basis;
  - in the case of SSC CDM project activities, in accordance with simplified procedures developed for such activities;
  - taking into account relevant national and/or sectoral policies and circumstances (such as sectoral reform initiatives, local fuel availability, power sector expansion plans, and the economic situation in the project sector).

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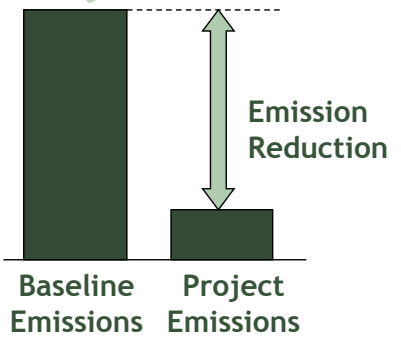
2-5. Additionality

- **Each project must satisfy the "additionality" criteria to be approved as a CDM project.**
  - **Investment barrier**
  - **Technological barrier**
  - **Barrier due to prevailing practice**
  - **Other barriers**
- **Guidelines for additionality demonstration.**
  - **"The tool for the demonstration and assessment of additionality"**
  - **"Conbined tool to identify the baseline scenario and demonstrate additionality"**

Additionality: A CDM project activity is additional if GHG emissions are reduced below those that would have occurred in the absence of the registered CDM project activity.

"Additionality" = This emission reduction would not have been achieved without CDM



3. Relevant Institutions & Their Functions

p. 6 ~10 of CDM/JI Manual

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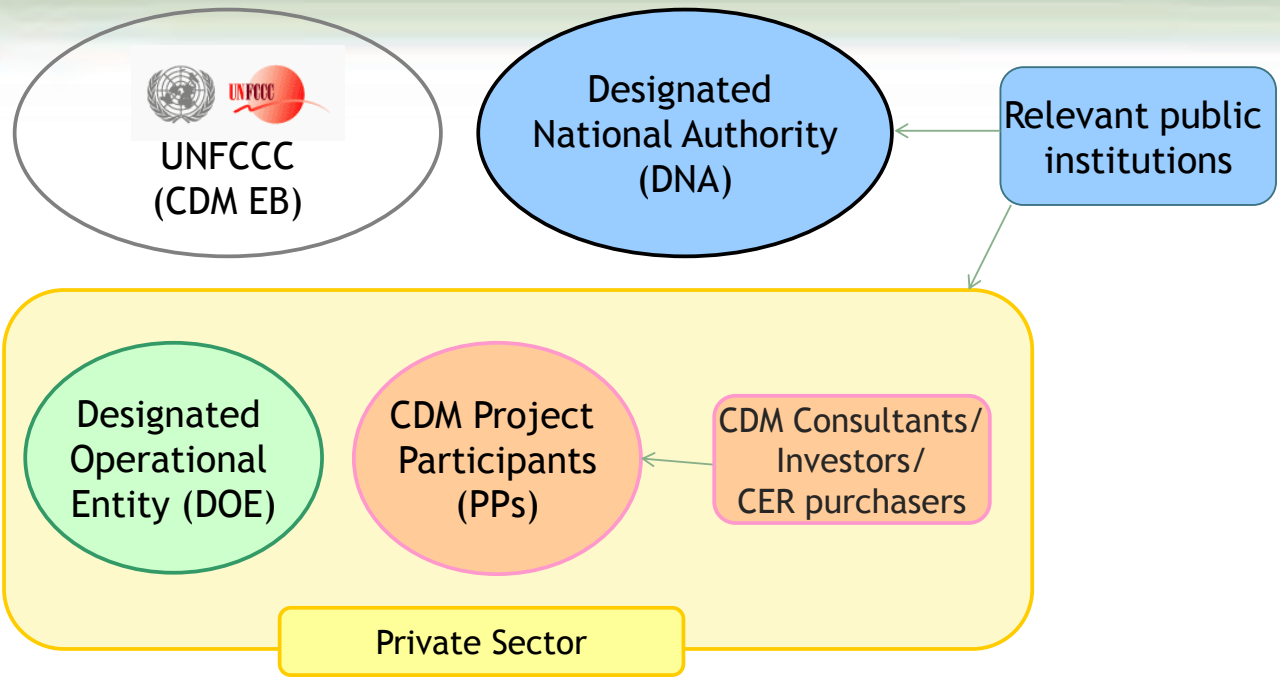
3.1. Relevant Institutions



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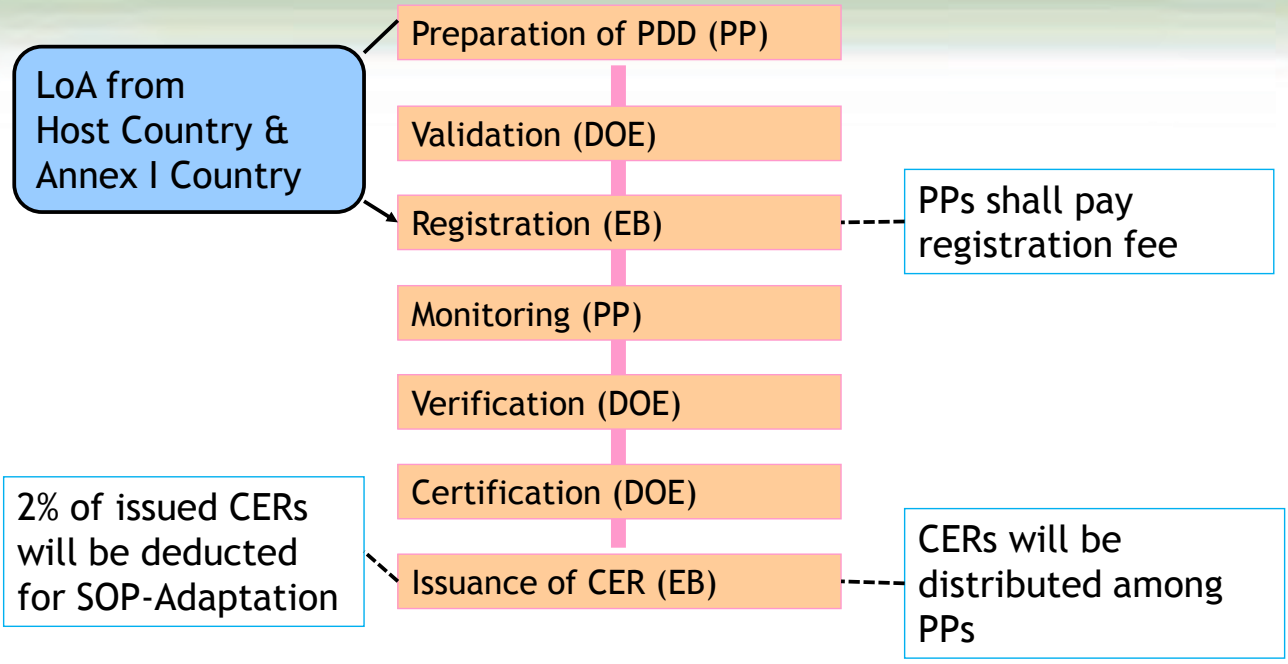
3.2. Functions of Each Institution



LoA: Letter of Approval, PDD: Project Design Documents, SOP: Share of Proceeds

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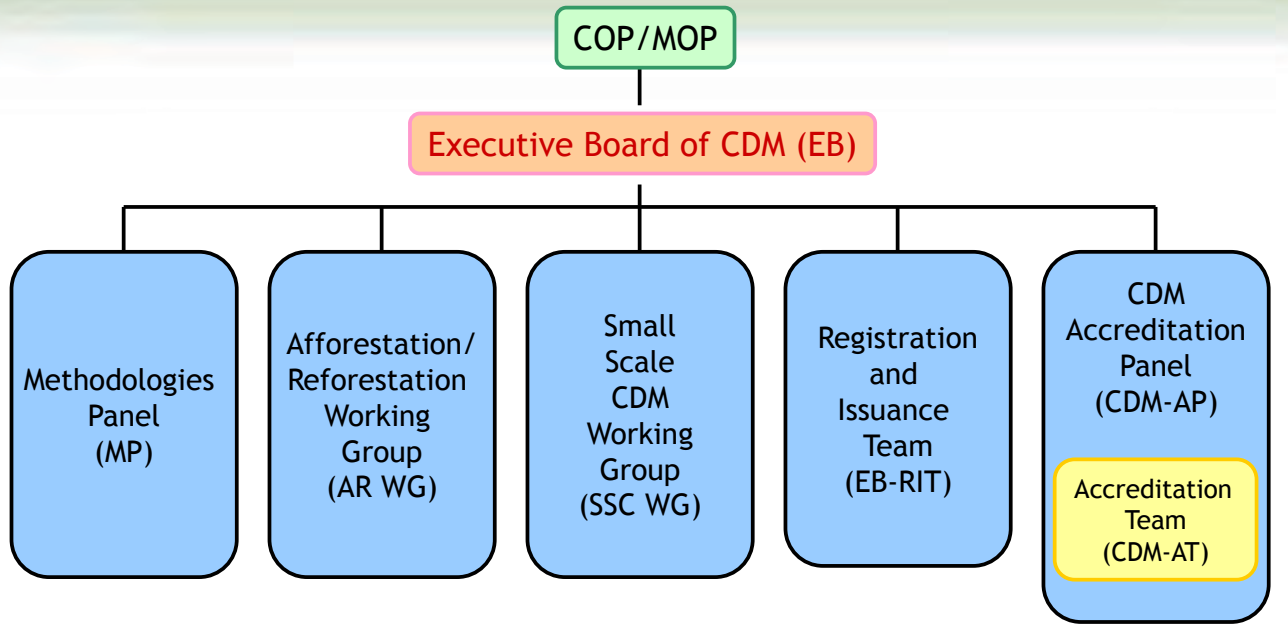
3.3.UNFCCC
(United Nations Framework Convention on Climate Change)



COP: Conference of the Parties (for United Nations Framework Convention on Climate Change)
MOP: Meeting of the Parties (for Kyoto Protocol)

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3.3.UNFCCC
MEMBERS OF CDM-EB (AS OF MAY. 2010)

	Member (10)	Alternate Member (10)
Africa	Mr. Djemouai (Algeria)	Mr. Adejuwon (Nigeria)
Asia	Mr. Kakakhel (Pakistan)	Mr. Sethi (India)
Eastern Europe	Ms. Harutyunyan (Armenia)	Ms. Bozanic (Serbia)
Latin America	Mr. Sealy (Barbados)	Mr. Miguez (Brazil)
Western Europe	Mr. Hession (UK)	Mr. Bernheim (EC)
Annex I	Mr. Barata (Portugal) *Vice chair	Mr. de Jonge (Netherlands)
	Mr. Stiansen (Norway)	Mr. Kuroki (Japan)
Non-Annex I	Mr. Gwage (Uganda)	Mr. Manso (Costa Rica)
	Mr. Duan (China)	Ms. Hughes (St.Kitts&Nevis)
AOSIS	Mr. Mahlung (Jamaica) * Chair	Mr. Takesy (Micronesia)

AOSIS: Alliance of Small Island States

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3.3.DNA
(DESIGNATED NATIONAL AUTHORITY)

- Countries participating in the CDM shall set up a DNA (designated national authority) for the CDM.
  - Annex I countries (incl. Japan) conducting capacity building activities for set-up/strengthening Host countries' DNA.
- CDM project participants shall receive written approval of voluntary participation from the DNA of each country involved.
- Other functions
  - Official country data such as emission factor of national grid or investment benchmark can be officially announced by DNA.
  - EB54 "Guidelines for Demonstrating additionality of Renewable Energy Projects (=<5 MW) & Energy Efficiency Projects (with Energy Saving <=20 GWh/y)". Appropriate technologies can be recommended by DNA and to be approved by CDM-EB.

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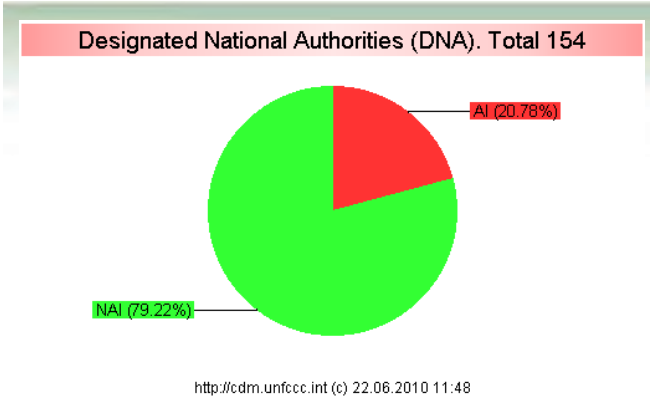
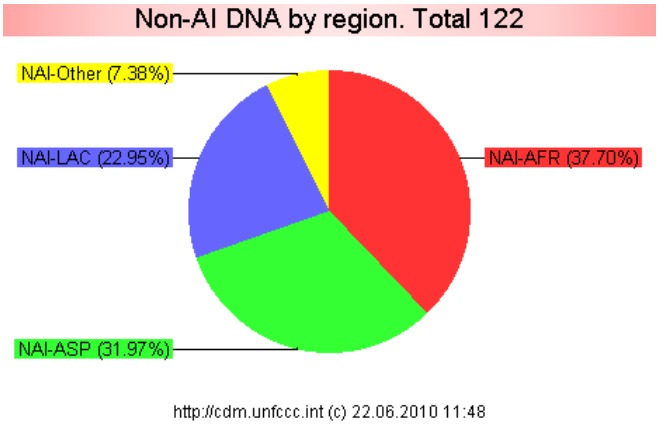
3.3.DNA (DESIGNATED NATIONAL AUTHORITY)



Annex I: 32
Non-Annex I: 122



NAI-Africa: 46
NAI-Asia and the Pacific: 39
NAI-Latin America and the Caribbean: 28
NAI-Other: 9

Source： UNFCCC-CDM website (http://cdm.unfccc.int) (as of 22 Jun. 2010)

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3.4.DOE (DESIGNATED OPERATION ENTITY)

- Entities accredited by the CDM-EB and designated by the COP/MOP
  - Validation: 30 entities
  - Verification/Certification: 30 entities
- Two functions
  - Validation: validates and subsequently requests registration of a proposed CDM project activity.
  - Verification & Certification: verifies emission reduction of a registered CDM project activity, certifies as appropriate and requests the CDM-EB to issue CERs accordingly.

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3.4.DOE (Designated Operation Entity)

	Sectoral Scopes
1.	Energy industries (renewable - / non-renewable sources)
2.	Energy distribution
3.	Energy demand
4.	Manufacturing industries
5.	Chemical industry
6.	Construction
7.	Transport
8.	Mining/Mineral production
9.	Metal production
10.	Fugitive emissions from fuels (solid, oil and gas)
11.	Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride
12.	Solvents use
13.	Waste handling and disposal
14.	Afforestation and reforestation
15.	Agriculture

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3.4.DOE (Designated Operation Entity)

Entity Name	Country	Sectoral Scope for Validation	Sectoral Scope for Verification/Certification
JQA	Japan	1-15	1-15
JACO	Japan	1-15	1-15
DNV	UK	1-15	1-15
TUV-SUD	Germany	1-15	1-15
TECO	Japan	1-3	1
JCI	Japan	1,2,4,5,10,13	1,2,13
KPMG AZSA	Japan	1-3, 10	1-3, 10
BVCH	UK	1-15	1-15
SGS	UK	1-15	1-15
KEMCO	Rep of Korea	1-15	1-15

UNFCCC Website: as of 22 June 2010

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3.4.DOE (Designated Operation Entity)

Entity Name	Country	Sectoral Scope for Validation	Sectoral Scope for Verification/Certification
TUV Rheinland	Germany	1-15	1-15
ERM CVS	UK	1-5, 8-10, 13	1-5, 8-10, 13
CRA	Canada	1,4,5,10,12,13	1,4,5,10,12,13
AENOR	Spain	1-15	1-15
TUV Nord	Germany	1-15	1-15
LRQA	UK	1-13	1-13
KFQ	Rep of Korea	1-5, 9-11, 13	1-5, 9-11, 13
SQS	Switzerland	1-15	1-15
Shin Nihon	Japan	1-3	1-3
NKKKQA	Japan	1, 3-5, 7, 12, 13	1, 3-5, 7, 12, 13

UNFCCC Website: as of 22 June 2010

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3.4.DOE (Designated Operation Entity)

Entity Name	Country	Sectoral Scope for Validation	Sectoral Scope for Verification/Certification
PJR CDM	Japan	1-3, 7,9,12,13,15	1-3, 7,9,12,13,15
CEC	China	1-3, 8,10	1-3, 8,10
RINA	Italy	1-8,10,11,13-15	1-8,10,11,13-15
SIRIM	Malaysia	1-4, 13	1-4, 13
KSA	Rep. of Korea	1-5, 13	1-5, 13
EMC	Rep. of Korea	1-8, 13-15	1-8, 13-15
JMA	Japan	1-4,6,8,9,14	1-4,6,8,9,14
GLC	Germany	1-3, 7, 10,13	1-3, 7, 10,13
CQC	China	1-13	1-13
EYG	France	14	14

UNFCCC Website: as of 22 June 2010

4. Advantages, Limitations & Issues of CDM

4-1. Advantages(Benefits) of CDM

(a) Additional Revenue from CERs (carbon credit)

- Acquisition of CER under CDM will improve the cash flow of the project that contributes to GHGs emission reduction.

(b) Transfer of Technology

- CDM will promote introduction and transfer of the state-of-art technologies that can contribute for GHG emission reduction to the participants

(c) Mitigation of Various Environmental Pollution

- Application of GHGs emission reduction technologies through CDM will also contribute to mitigation of various environment pollution issues, e.g. air pollution, water pollution, waste management, and so forth.

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4-1. Advantages(Benefits) of CDM

(d) Promotion of Renewable Energy

- CDM will contribute to promote renewable energy production and utilization to replace imported fossil fuel.

(e) Increase of Productivity

- Some of GHGs emission reduction technologies may increase productivity through achievement of energy and raw materials saving.

(f) Expansion of New Business Opportunities

- CDM will increase the opportunities of business partnership with foreign companies that may trigger business market expansion for the private sector in host countries.

Contribution to Sustainable Development of Sri Lanka

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4-2. Limitations and Issues of CDM

According to the current commitment period, the current CDM framework is guaranteed until 2012. ⇨ Uncertainty in CER market (ref. VER)

Administration cost and time for formulating a CDM project (Has been difficult to formulate small to medium projects) ⇨ Small Scale bundling & Programmatic CDM

Ongoing discussions at UNFCCC how to support host countries less than 10 registered projects.
- lower registration fee
- Giving priority in completeness check of request for registration etc

Thank You

CARBON MARKET

CDM training program
24th of June 2010
JICA expert team
Shiro Chikamatsu

OBJECTIVES

The main objectives of this lecture is for you to understand the basic idea of the market approach and have the "feel" of the carbon market, so that you will recognise its general trend, and be able to see CDM from carbon credit buyers' perspective.

Content:

I. ***BASIC IDEA OF THE MARKET APPROACH*:**
What is carbon market?
Why was it created in the first place?

II. ***PROFILE OF THE CARBON MARKET*:**
How does carbon market look like?

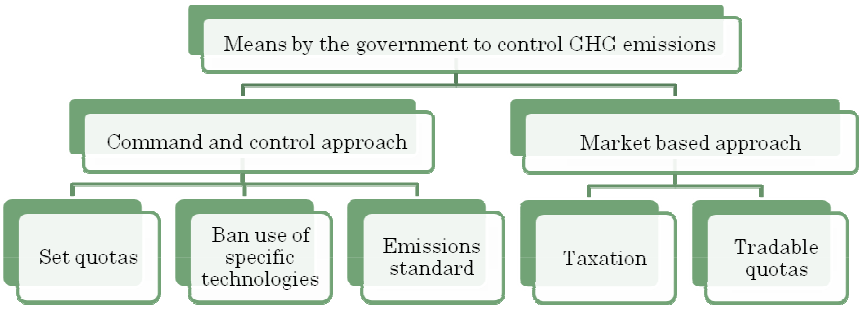
III. ***FACTORS INFLUENCING CARBON CREDIT PRICE:***
How is the price of the carbon credit affected?

Basic Idea of the Market Approach

What is carbon market?

- Carbon market is a (virtual) place to buy and sell the **rights** (permits) to emit Greenhouse Gas (GHG).
- Carbon market operates in a similar manner as other financial markets. It is bought and sold just like stocks, commodities, and other financial products.
- The price of the carbon credits change constantly according to changes in demand and supply

Market Approach



- There are many approaches to achieve GHG emissions reductions.
- Creation of carbon market was chosen by the governments (and the group of governments) as an instrument to reduce GHG emissions.
- Environmental economists believe that market approach, especially tradable quotas, creates incentive for the firms to **innovate**, since there is a potential to make money by inventing low carbon emission technologies.

Why carbon market?

- Carbon market was designed to reduce GHG emissions in the most **economically efficient** manner.
- Carbon credits are bough and sold due to gains of trade:
  - A company will buy the carbon credit from the market to achieve the emissions reduction target if it is cheaper than installing emissions reduction technology
  - A company will invest in a emissions reduction technology if it is cheaper than buying carbon credits to meet the emissions reduction target or they could make a profit from selling carbon credits.
- The price of the carbon credit is determined by the market ("the invisible hand")
- Price of the carbon credit (in theory) would settle where the supply meets the demand.

GAINS OF TRADE: LOGIC BEHIND TRADING

Company A

Address: Rainy Colombo
Current CO_2 emissions: 300,000 tons

- They need to reduce 100,000 tons of CO_2 by next year.
- They could install state of the art fuel cell power generator to reduce their CO_2 emissions
- To reduce 1 ton of CO_2 it will cost them $30
- They need to invest $3,000,000 to reduce 100,000 tons of CO_2

GAINS OF TRADE: LOGIC BEHIND TRADING

Company B

Address: Sunny Trincomalee
Current CO_2 emissions: 200,000 tons

- They have no obligation to reduce CO_2 emissions
- They could install cheap solar power generator to reduce their CO_2 emissions
- To reduce 1 ton of CO_2 it will cost them $10
- They could invest $1,000,000 to reduce 100,000 tons of CO_2 emissions, however there is no need for them to invest on such renewable energy project and it is rather expensive compared to buying electricity from the grid.

GAINS OF TRADE: LOGIC BEHIND TRADING

Scenario 1: No carbon credit market mechanism

Company A will invest in the $3 million fuel cell power generator to reduce 100,000 tons of CO_2 emissions

Emissions reduction cost: $30/ton of CO_2

Scenario 2: With carbon credit market mechanism

- Company B will invest in the $1 million solar power generator to reduce 100,000 tons of CO_2 emissions.
- This emissions reduction is sold to Company A at the price of $20/ ton of CO_2.
- The company B will make $900,000 profit ($2million (revenue) - $1million (solar power generator cost) – $100,000 (carbon credit administrative cost))
- Company A will save $3million – $2million = $1million by purchasing 100,000 tons CO_2 of carbon credit

Emissions reduction cost: 20$/tons of CO_2

SUMMARY OF THE BASIC IDEA OF THE MARKET APPROACH

What carbon market?

- Carbon market is the place where emissions rights (permits) are bought and sold, just like any other financial markets.

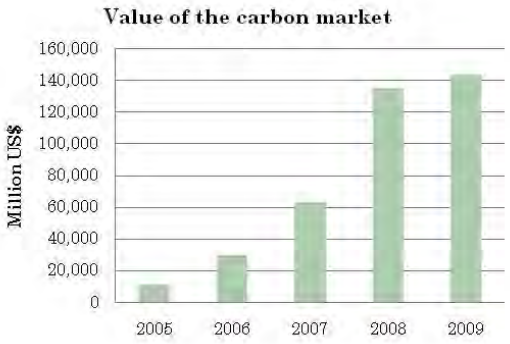
Why was it created in the first place?

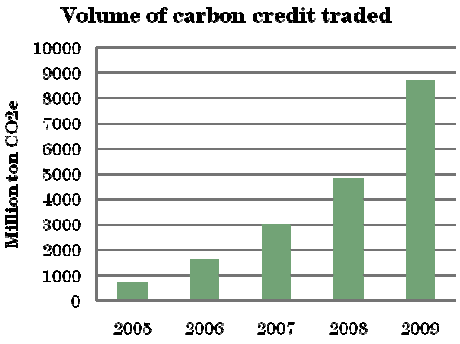
- It is a market base approach for regulating GHG emissions.
- There is an incentive to **innovate**
- Achieve GHG emission in the most economically **efficient** manner
- Prices of carbon credit are **flexible** and move where supply meets the demand

PROFILE OF THE CARBON MARKET

SIZE OF THE CARBON MARKET

The World Bank estimated the total value of the carbon market in year 2009 to be 144 billion US$ and the total volume of traded carbon credit in the same year to be 8.7 billion tons of CO2e.





Source: World Bank, States and Trends of the Carbon Market 2010

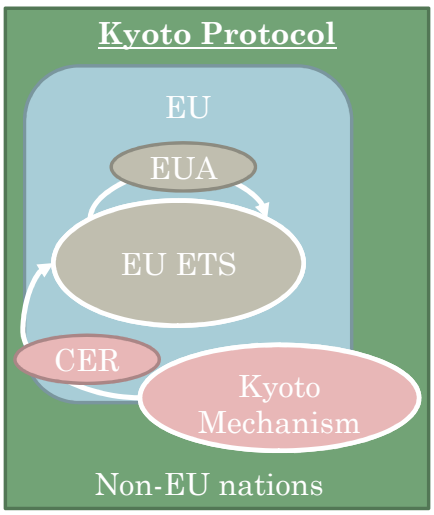
TYPES OF CARBON CREDITS

Name of the emissions trading scheme			Name of the carbon credit		Traded volume ($MtCO_2e$)	Market value (MUS$)
Regulatory Compliance	Kyoto Mechanism	Clean Development Mechanism (CDM)	Certified Emission Reduction (CER)	Primary CER	211	2,678
				Secondary CER	1,055	17,543
		Joint Implementation (JI)	Emission Reduction Units (ERU)		26	354
		Emissions Trading (ET)	Assigned Amount Units (AAU)		155	2,033
	European Union Green House Gas Emission Trading System (EU ETS)		EU Allowance (EUA)		6,326	118,474
	New South Wales Greenhouse Gas Reduction Scheme (NSW-GGAS)		NSW Greenhouse Abatement Certificates		34	117
	Regional Greenhouse Gas Initiative (RGGI)		RGGI Allowance		813	2,667
Voluntary	Over the Counter Voluntary Emission Reduction				51	326
	Chicago Climate Exchange		CCX Carbon Financial Instruments (CFI)		41	50
	Other Exchanges				2	12

- One unit of all carbon credits are $1tCO_2e$
- Source: Ecosystem Marketplace, Bloomberg New Energy Finance, World Bank

EU ETS MARKET

- By far the largest carbon credit market
- It is a Cap & Trade System
- Companies under the EU ETS has emissions reduction target that could be met either by reducing its own CO_2 emissions, or purchasing EUA or Kyoto Mechanism credits (such as CER) from the carbon market.
- Companies under the EU ETS buy and sell EUA with each other and import CER, which is emissions reduction outside of EU ETS

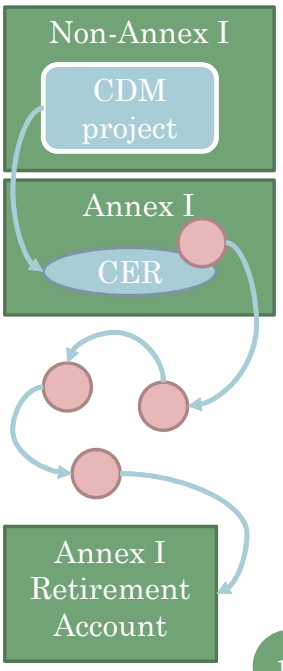


Some of the limitations to the use of CER in EU ETS

- CER from land use, land use change and forestry activities are not eligible
- Hydro power plants that exceeds 20MW need to follow protocols set by World Commissions on Dams
- CER import limits may be imposed in the future

CDM MARKET

- Second largest carbon credit market
- Primary CERs are the issued CERs
- When the primary CERs are sold to another party, it is called secondary CERs.
- Secondary CERs fetch higher price than primary CERs, because any amount of "issued" CERs could be obtained anytime, for example from a carbon credit exchange.
- CERs are issued from non-Annex I countries, but anyone could trade it.
- When the CER is transferred to the retirement account of a Annex I country, the CER is "used" by the country to meet its emission target.



WHO BUYS AND SELLS CARBON CREDIT?

Sellers
- East European Countries (AAU)
- Utility companies
- Independent Power Producers
- CDM project developers
- Carbon finance companies
- Carbon funds (project finance)

Buyers
- Annex I countries
- Utility companies
- Steel companies
- Government institutions
- Private companies (for CSR)
- Individuals (voluntary)

Brokers
- Exchange platforms
- Banks
- Hedge funds
- Carbon funds
- Carbon offset companies

Any companies , institutions or countries that have legally binding emissions reduction targets are potential carbon credit buyers

CER SELLERS AND BUYERS

Buyer countries	Number of projects
Austria	89
Belgium	29
Canada	77
Czech Republic	3
Denmark	87
Finland	42
France	81
Germany	238
Greece	
Hungary	
Iceland	
Ireland	13
Italy	90
Japan	532
Latvia	
Luxembourg	33
Netherlands	465
New Zealand	1
Norway	51
Portugal	7
Spain	159
Sweden	260
Switzerland	712
United K.	1328
CDCF	1
WBCF	1
NEFCO	1
IBRD	1
CCAC16	
n.a.	1713
Total	6014

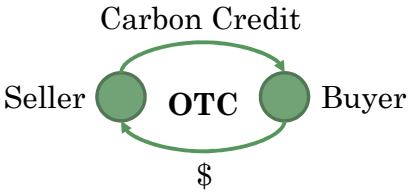
Top 20 buyers	Projects
EcoSecurities	292
Tricorona Carbon Asset Management Sweden	172
EDF Trading	111
Vitol	108
Mitsubishi	105
RWE	99
AgCert	96
Carbon Resource Management	88
CAMCO	71
Trading Emissions	71
Danish Ministry of Climate & Energy	65
MGM Carbon Portfolio	62
Cargill International	62
ENEL	62
Kommunalkredit	60
Marubeni	59
Agrinergy	55
Climate Change Capital	49
IBRD	46
Energy Systems International	45

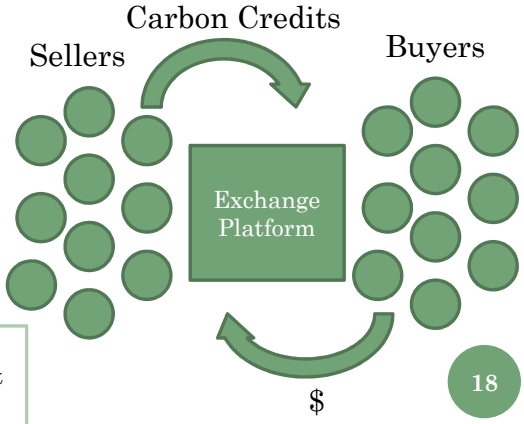
Source: CD4CDM

- EcoSecurities is a U.K. based company.
- However, U.K. has already achieved the 2012 Kyoto Target.
- Why is U.K. company still purchasing CERs?

TYPES OF TRANSACTIONS

- Over The Counter (OTC)
  - Individual sellers sell the carbon credit to an individual buyer in a direct manner.
  - Emissions Reductions Purchase Agreement could be concluded between the two parties
  - Basic form of credit transaction
- Exchange
  - Collective sellers trade with collective buyers using an exchange platform
  - Individual buyers does not meet with individual sellers face to face.
  - Example of exchange platform includes European Climate Exchange (ECX), Nord Pool, BlueNext, Climex and etc.
  - ECX trades largest volume of EUA and CER. ECX is a good price indicator just like New York Mercantile Exchange for international price of the crude oil (WTI)





Why use exchange platform?
- High credibility and reliability of the carbon credit
- Fast transaction
- Transparent pricing mechanism
- Handles futures as well as spot trading

SUMMARY OF THE PROFILE OF THE CARBON MARKET

How does carbon market look like?

- Carbon market traded 8.7 billion tons CO_2 of carbon credit worth 144 billion US$ in year 2009.
- There are many types of carbon market mechanisms, but **EU ETS is by far the largest one followed by CDM**.
- EU ETS trades EUA between the companies under the EU ETS with specified emissions reduction targets.
- EU ETS could import CER.
- Secondary CER could be traded by anybody, but eventually it will be placed in the retirement account upon its "use".

FACTORS INFLUENCING CARBON CREDIT PRICE

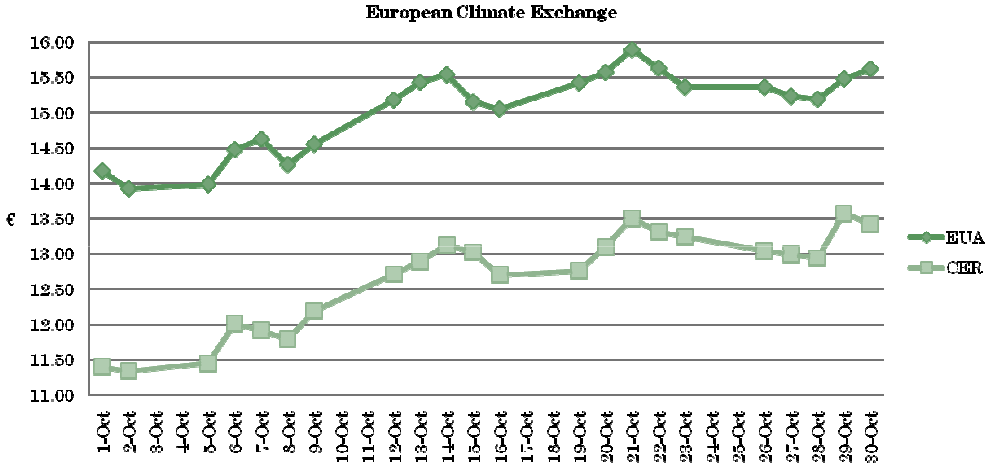
WHAT EFFECTS THE PRICE OF CARBON CREDITS?

- Price of dominant carbon credits
- Policies and regulations
- Price of the energy
- General economic trend
- Project type

and etc.

As with other commodities, it is very difficult to predict the future price of the carbon credit.

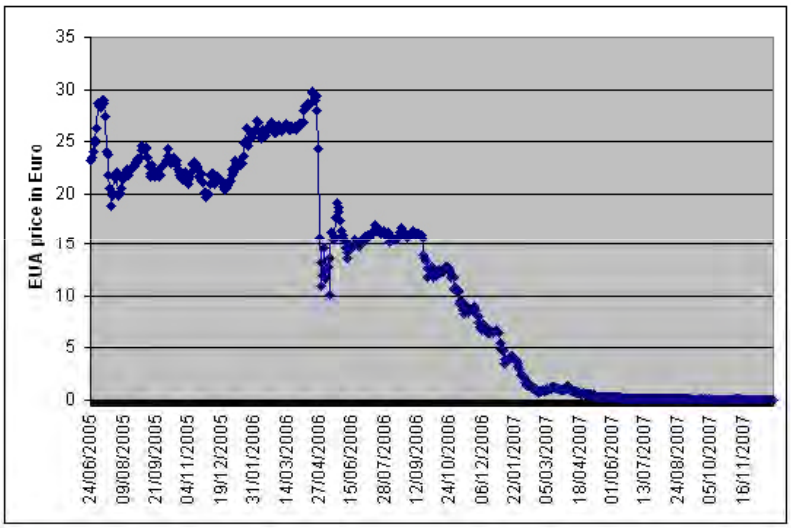
EUA & CER PRICES



Data source: European Climate Exchange

- EUA and CER follow similar patterns
- The price of the EUA is higher than CER
- EUA price is the dominant factor over CER

Effect of over allocation of allowances on the EUA price

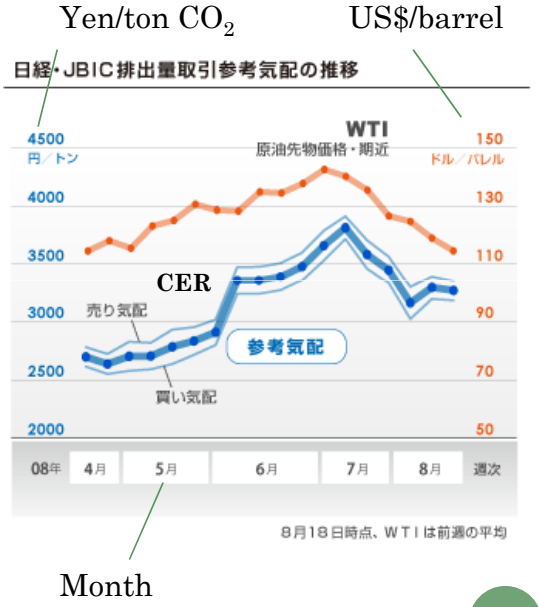


- Over allocation of EUA during the phase I of EUETS created a collapse in price
- The demand for carbon credit is artificially created by regulation

Source: IVM Institute for environmental studies

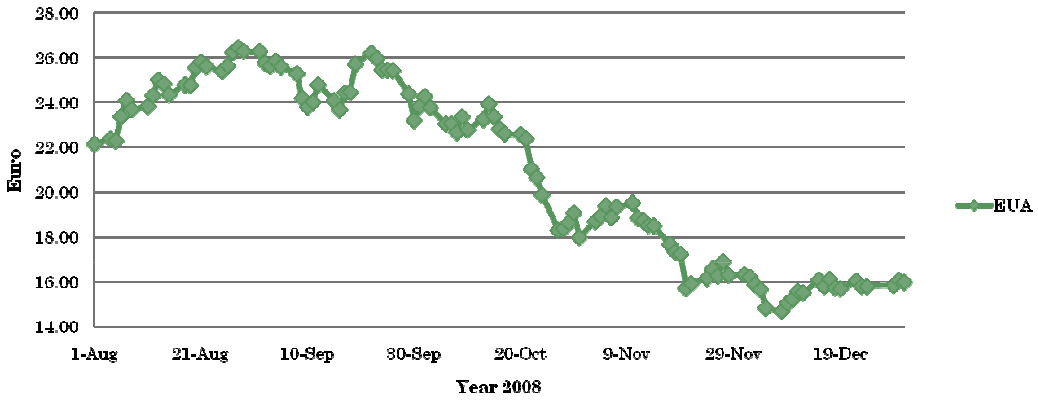
The effect of energy price on the carbon credit market

- The energy price does affect the carbon credit price.
- But there is no clear correlation
- General economic growth may increase the energy and the carbon credit price.
- Increase in petroleum and decrease in the natural gas prices may encourage fuel switch to less carbon intensive natural gas, but at the same time, if the coal price is low it will also promote development of coal fired power plants.



Source: Nikkei

General Economic Trend



Data source: European Climate Exchange

- Lehman shock in September 2008 caused the fall in EUA price.
- Manufacturing industries were hit hard and CO_2 emissions decreased. Therefore the emissions reduction target was met literally by "doing nothing".
- Therefore the demand for EUA decreased.
- The price of the EUA has not yet recovered to the pre-Lehman shock level (just like the global economy).

The Effect of Project Type

- CER issued from Gold Standard certified CDM projects fetch higher price in comparison to normal CDM projects.
- There are other standard such as Climate Community and Biodiversity Alliance(CCBA).
- Buyers that would use carbon credit for their Corporate Social Responsibility (CSR) may prefer CDM projects with "good image" such as wind power projects.
- CER from large scale hydro-dam projects may fetch lower than average price, since large scale hydro dam derived CER is difficult to import into the EU ETS.
- CER from HFC project generally fetch lower than average price as well.

The Gold Standard
Premium quality carbon credits

SUMMARY OF THE FACTORS INFLUENCING CARBON CREDIT PRICE

How is the price of the carbon credit affected?

- CER price follows the pattern of EUA price
- Over-allocation of EUA caused the collapse of the EU-ETS phase I
- Energy price does have influence over the carbon market, but it is difficult to estimate its effect
- Global economic crisis impacted the carbon credit price.
- CER Project type differentiates the CER price.

Regulation artificially generates demand in the carbon market

SOME USEFUL LINKS

- World bank carbon finance (http://www.worldbank.org/)
  - Publishes annual carbon market report
- European Climate Exchange (http://www.ecx.eu/)
  - Could obtain the latest price information for the CER and EUA traded in the exchange.
- Ecosystem Marketplace (http://www.ecosystemmarketplace.com/)
  - Has information on various environmental market schemes

CDM TYPOLOGY(1)

02 JUL 2010, Ai Kawamura JICA Expert Team

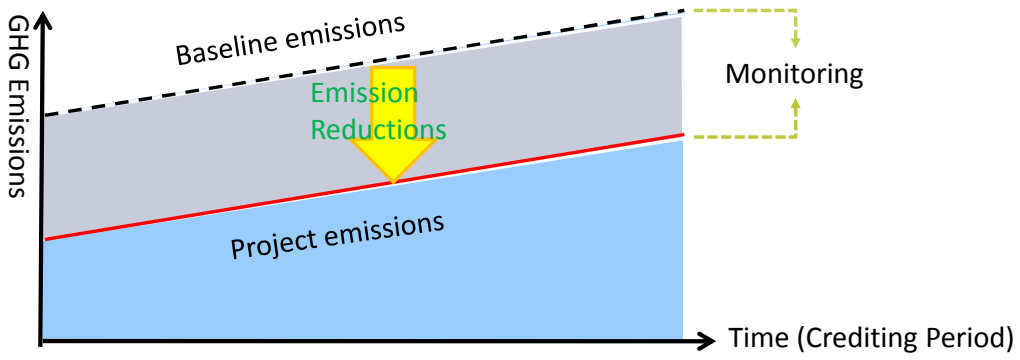
CONTENTS

0. Key Points of Functional Background of CDM

4

(1) Baseline Scenario & Project Scenario

- Baseline Scenario: the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed project activity (3/CMP.1, Annex, para 44).
- Project Scenario: A proposed CDM project.



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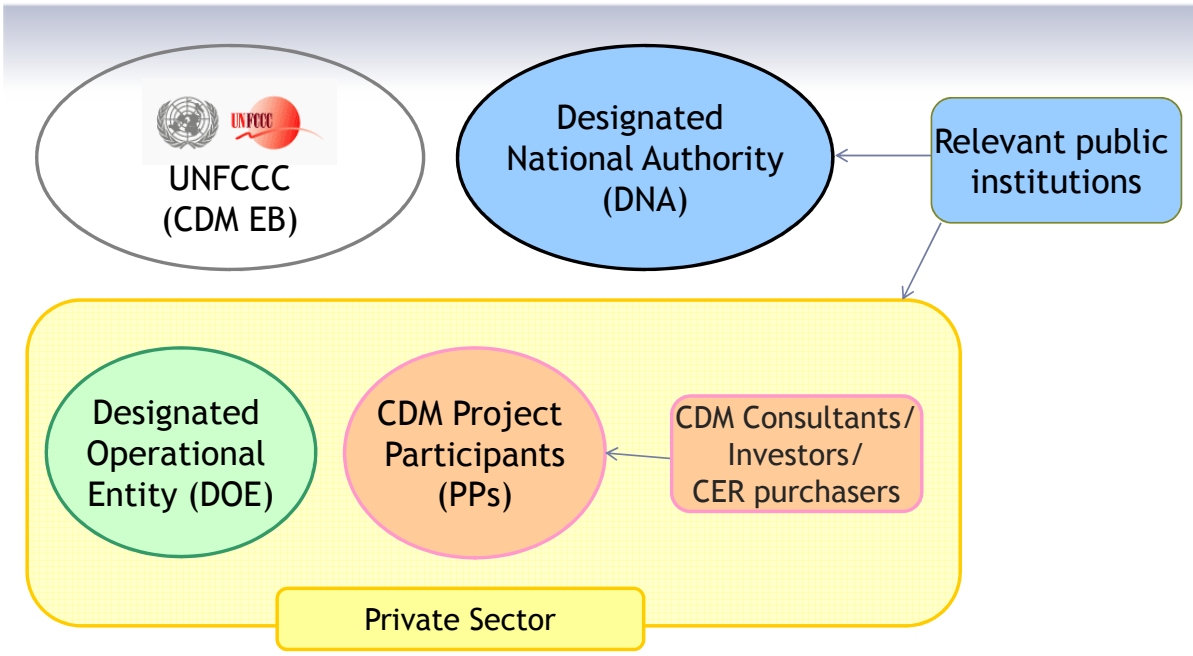
(2) Relevant Institutions



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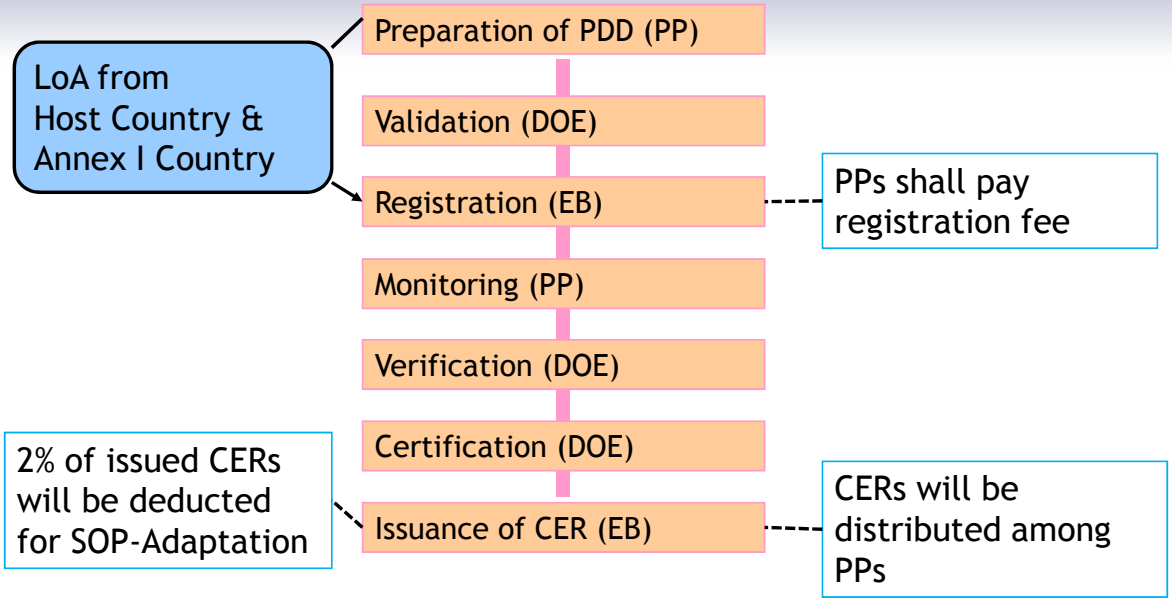
(3) Functions of Each Institution



LoA: Letter of Approval, PDD: Project Design Documents, SOP: Share of Proceeds

1. Outline of CDM Typology

p.11 of
CDM/JI Manual

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1-1.CDM Typology Outline

- **By Project Type**

Emission Reduction Project
- Renewable energy project
- Energy efficiency
- Biogas recovery
- Compost etc

Afforestation/Reforestation Project (sink/removal)

- **By Scheme**

Large Scale CDM | Small Scale CDM | Programmatic CDM

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1-2. METHODOLOGIES

- **Baseline and Monitoring Methodology:**

"Baseline methodology " :

- defines the method of identifying the baseline scenario (scenario without CDM),
- describes the calculation method of baseline emissions and project emissions.

"Monitoring methodology":

- is the means to gather the data required to calculate emission reductions from the proposed CDM project, &
- sets out how project proponents should develop and implement a monitoring plan.

	Emission Reduction CDM	A/R CDM
Large Scale	• Approved Large Scale Methodologies (70) • Approved Consolidated Methodologies (17)	• Approved Large Scale Methodologies (8)
Small Scale	• Small-scales Methodology Type I : Renewable energy project (6) Type II : Energy efficiency improvement project (11) Type III: Other project activities(36)	• Approved small scale A/R methodologies (6)

*Number of methodologies are as of 29 Jun. 2010

- **More than one methodologies can be combined for one project activity**

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1-3. PDD FORMS

- **Project Design Document (PDD):**

The document describing the following details of the proposed project:

- Project participants
- Crediting period of the project
- Selected baseline and monitoring methodology
- Emission reduction(removal) calculation
- Additionality establishment
- Monitoring plan
- Environmental impacts of the project
- Summary of stakeholder comments etc

PDD Forms of Conventional CDM

	Emission Reduction CDM	A/R CDM
Large	•CDM-PDD	• CDM-AR-PDD
Small	•CDM-SSC-PDD	• CDM-SSC-AR-PDD

PDD Forms of Programmatic CDM

	Emission Reduction CDM	A/R CDM
Large	• CDM-PoA-DD • CDM-CPA-DD	• CDM-PoA-DD-AR • CDM-CPA-DD-AR
Small	• CDM-SSC-PoA-DD • CDM-SSC-CPA-DD	• CDM-PoA-DD-SSC-AR • CDM-CPA-DD-SSC-AR

2. SMALL SCALE(SSC) CDM

p.12~19 of CDM/JI Manual (p.116~134 for Methodologies)

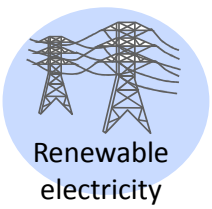
2-1. DEFINITION OF SSC PROJECTS (EMISSION REDUCTION)(1)

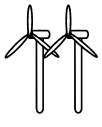
- **Type 1: Renewable energy project**

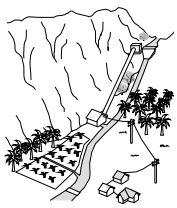
☐ Size limit:
Maximum output capacity of 15 MW for electricity, 45 MWth for thermal

☐ Definition of maximum "output":
Installed/rated capacity indicated by the manufacturer of the equipment/plant (not the actual load factor of the plant)

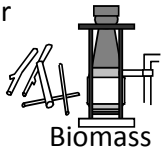
☐ Definition of "MW" (Mega watt):
MW is a unit of energy. CDM-EB defined "MW" as "MWe"(electric energy value) and agreed to use the calculation 1MWe=3MWth.

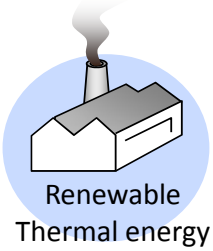

Renewable electricity


Wind


Mini-hydro


Solar


Biomass


Renewable Thermal energy

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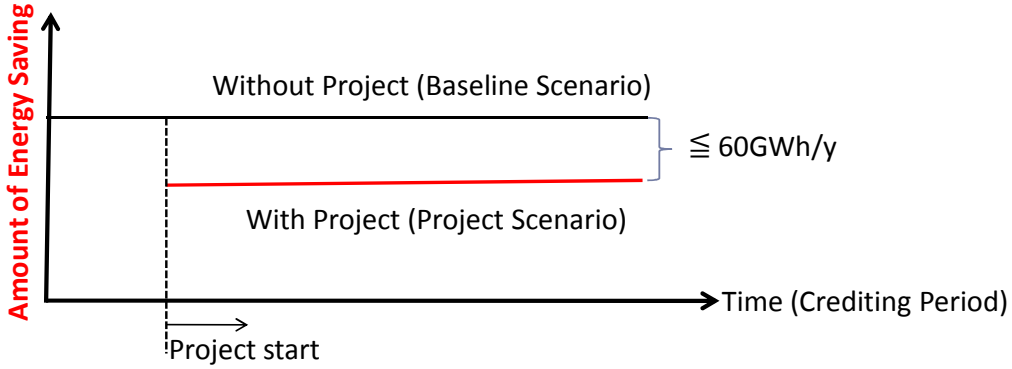
2-1. Definition of SSC Projects (Emission Reduction)(2)

- **Type 2: Improvements in energy efficiency**

☐ Size limit:
A maximum improvement of 60 GWh /year (or an appropriate equivalent)
(Example) 15MW*4,000 hour operation /year =60,000MWh (= 60GWh)
MWh = Capacity of the plant(MW) x Number of operation hours(h) , 1GWh=1,000MWh

☐ Site emission reduction to be in place: Demand side and/or supply side



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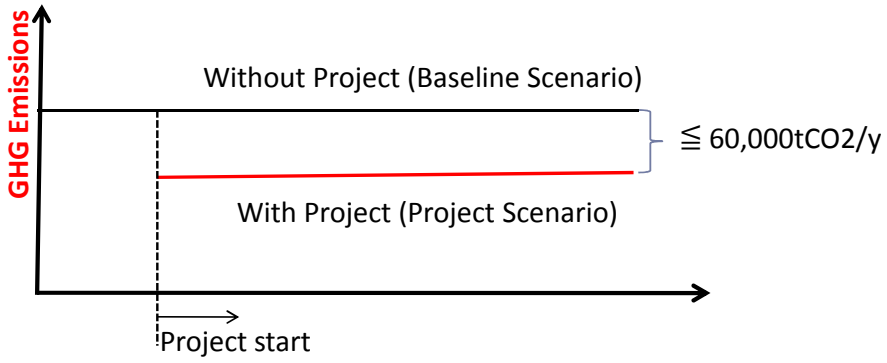
2-1. Definition of SSC Projects (Emission Reduction)(3)

- **Type3: Other activities**

☐ Size limit:
Resulting in emission reductions ≦ 60,000 tCO2/y

☐ Example of projects:
Biogas collection(solid waste, wastewater), composting, transport etc



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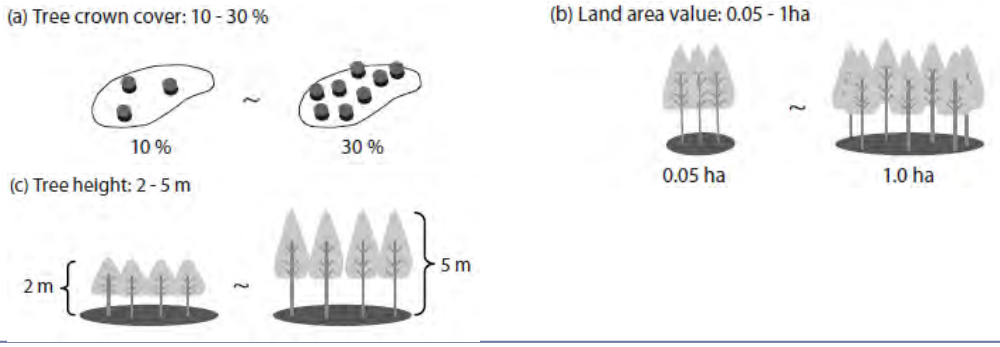
2-1. Definition of SSC Projects (A/R:Forestry Sector)

- Size limit:
  Resulting in net GHG removals by sinks < 16,000 tCO2/y
- Other applicability SSC A/R project:
  Developed or implemented by low-income communities and individuals as determined by the host Party
- Participation Requirement for A/R CDM project
  DNA needs to determine threshold of forest definition within the following range of each indicator.



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2-2. Benefits of SSC Projects (1)

- **"Simplified Modalities and Procedures for Small-scale CDM Project Activities"**

(1) Simplified documents and procedures:

Simplified PDD format	Simplified Baseline Methodologies	Simplified Monitoring Plans

(2) Additionality can be established by proving one of the following barriers
(There are cases, where only one barrier is not considered strong enough):

Investment barrier:	Other barriers: Institutional barriers, Limited information, Managerial resources, Organizational capacity, Financial resources, Capacity to absorb new technologies
Technological barrier:	
Barrier due to prevailing practice:	

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2-2. BENEFITS OF SSC PROJECTS (2)

- **"Simplified Modalities and Procedures for Small-scale CDM Project Activities"(continued)**

  (3) Project activities may be bundled at each step in the project cycle (PDD, validation, registration, monitoring, verification and certification)

  (4) The same DOE can undertake validation, verification and certification. (For Large scale CDM, one DOE cannot conduct)

- **Other benefits**

  Shortening of the period after the date of receipt of the request for registration (8weeks→4weeks), unless there is a request for review for the proposed CDM project activity. etc

"Time" and "Cost" are saved compared to Large-scale CDM Project

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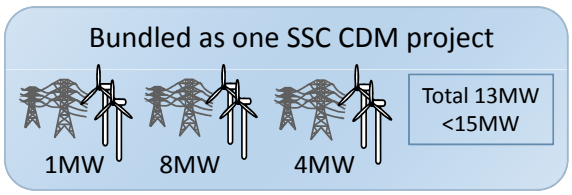
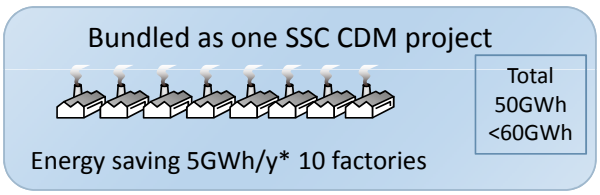
2-3. BUNDLING OF SSC PROJECTS(1)

- **The total size of the SSC CDM projects not exceeding the maximum size for the SSC CDM project, more than one SSC CDM projects can be bundled.**

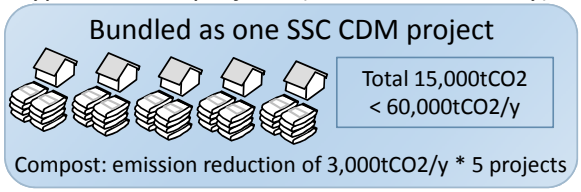
Type 1: Renewable Energy (Max 15MW)



Type 2: Energy Efficiency (Max 60GWh/y)



Type 3: Other projects (Max 60,000tCO2/y)



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2-3. BUNDLING OF SSC PROJECTS(2)

- **Advantage of bundling SSC CDM project**
  - **Validation, Registration procedures, Verification procedures can be done in a single submission to the CDM-EB**
  - **Pay only one registration fee depending on the expected amount of CER to be obtained.**
  - **Better chances for small scale project to identify CER buyers**

  Time & Cost Saving

- **Challenges of bundling SSC CDM project**
  - **Little flexibility after registration**
  - **Difficulty of project development timeframe adjustment (when project participants are different)**
  - **Failure of one project will affect all other bundled projects**

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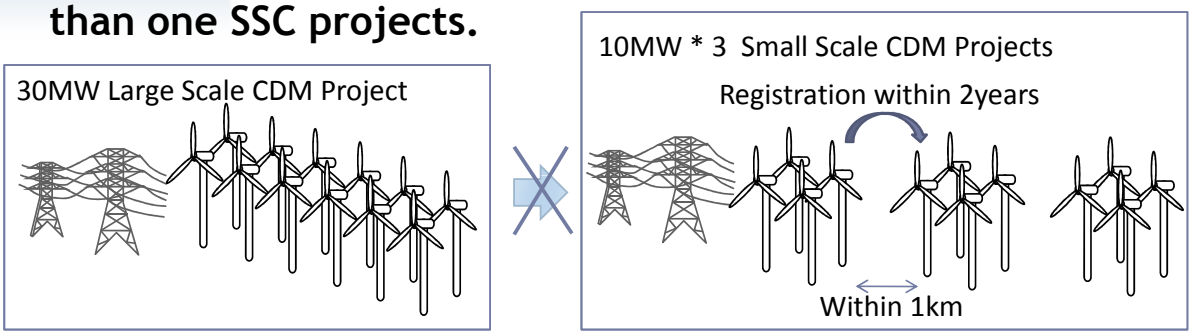
2-4. DE-BUNDLING OF LARGE SCALE PROJECTS

- **A large scale CDM project cannot be de-bundled into more than one SSC projects.**



[Conditions of De-bundling] If the following conditions are all met, the project will be regarded as "de-bundling" of large scale project.

- With the same project participants;
- In the same project category and technology/measure;
- Registered within the previous 2 years; and
- Project boundary is within 1 km of the project boundary of the proposed small-scale activity at the closest point.

3. PROGRAMMATIC CDM

p.19~23 of
CDM/JI Manual

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3-1. BACKGDOUND OF PROGRAMMATIC CDM(PCDM)

■ Background

Individual (conventional) CDM

- Project by project approach
  site, PDD, validation, verification …
  every step is single project base
- Huge administration cost and time for formulating a CDM project

Difficult to formulate small to medium projects

Bundle of small-scale projects

- Limit of the total size of the bundled projects:
  (15MW for renewable power(45MW for thermal), 60Gwh for energy efficiency, 60,000tCER/yr for other projects)
- A very strict implementation schedule

- Limit of expansion
- Challenges in bundling the projects conducted by different owners
- Project cannot be added after registration (little flexibility)

Many potential projects remain undeveloped (especially small projects)

Great expectations for Programmatic CDM to expand the opportunities of CDM

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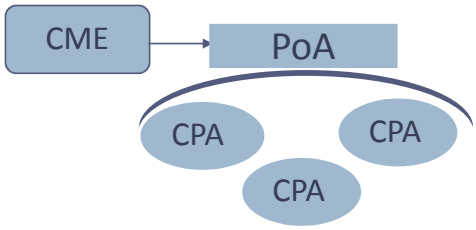
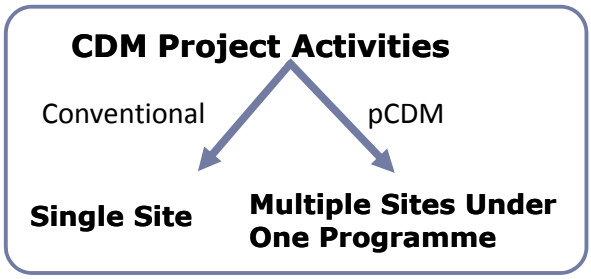
3-2. Important Terms of pCDM

•**Programme of Activity (PoA) :** [Framework level]
A framework to implement CDM project activities (CPA) under the PoA

•**CDM Project Activities (CPA)**: [Operational level]
Individual CDM projects implemented under the PoA

•**Coordinating/Managing Entity (CME):** A private or public entity in charge of:
- communication with CDM Executive Board
- coordinating of the PoA framework
- management of the monitored data
- Ensuring no double counting





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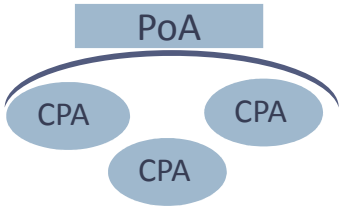
3-3. Features & Requirement of pCDM

■ Features of Programmatic CDM

•PoA can start with only one CPA
•Boundary can be beyond one country
•CPAs can be added:
- at any time during PoA period
- by anybody within the PoA boundary
- with no limit in number
- without project registration procedures (consistency/integrity)

•No limitation of the number of CPAs included in a PoA (28years)



■ Requirement for pCDM

A. PoA Level
- PoA is not applicable for "mandated policy/measure" unless the PoA leads to greater enforcement
- Determination of a coordinating entity

B. CPA Level
- Same Baseline Methodology
- Same Technology to reduce GHG emission

3-4. Comparison of Project Formulation Procedures

Conventional — Project by project

PJ → PDD → Validation → Registration → Implementation → Verification → CER

Bundling — By group

PJ, PJ, PJ → PDD → Validation → Registration → Implementation → Verification → CER

PoA — Framework for expansion

CPA, CPA, CPA, CPA, CPA, CPA, CPA, CPA, CPA → PDD → Validation → Registration → Implementation → Verification → CER

CPAs can be added:
at any time during PoA period
by anybody within the PoA boundary
with no limit in number
without project registration procedures

CDM development cost & registration risk for project participants is lowered

4. Case Study of Programmatic CDM

p.23~27 of CDM/JI Manual

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4-1. Potential Programmatic CDM by Type(1)

- 6 projects have been registered
- 82 projects are at validation stage (1 July 2010)

Title of Project	Country	Date of Registration	Project type	'000 CER/y
Methane capture and combustion from Animal Waste Management System (AWMS) of the 3S Program farms of the Sadia Institute	Brazil	29-Oct-09	Methane avoidance from Manure	
BRA/SC – 678228 S02 / 3SP – AWMS/SI	Brazil	29-Oct-09	Methane avoidance from Manure	0.1
CUIDEMOS Mexico (Campana De Uso Intelegente De Energia Mexico) – Smart Use of Energy Mexico	Mexico	31-Jul-09	Energy Efficiency at household (Lighting)	
CUIDEMOS Mexico (Campana De Uso Intelegente De Energia Mexico) – Puebla	Mexico	31-Jul-09	Energy Efficiency at household (Lighting)	24
CFL lighting scheme – "Bachat Lamp Yojana"	India	29-Apr-10	Energy Efficiency at household (Lighting)	
CPA 3223-0001 : CFL lighting scheme – "Bachat Lamp Yojana" in Ranga Reddy District, Ranga Reddy North Circle, Habsiguda Division, Central Power Distribution Company of Andhra Pradesh Limited, Andhra Pradesh, India Pradesh Limited, Andhra Pradesh	India	29-Apr-10	Energy Efficiency at household (Lighting)	34.9

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4-1. Potential Programmatic CDM by Type(2)

- Potential Characteristics/Sectors of pCDM

Community/Plant Base(small - medium)

- Hydro power
- Biomass electricity/ heat generation
- Biogas collection from:
  - organic industrial waste water
  - animal waste
  - municipal waste (landfill)
- Community compost etc

Product Base (very small)

- Energy efficient lamp
- Solar energy etc

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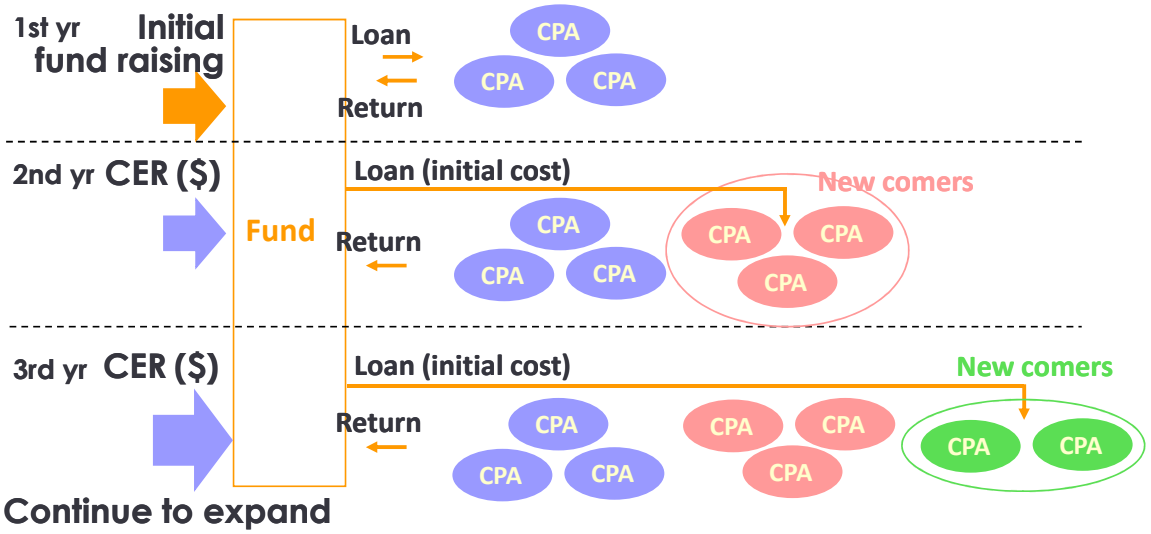
4-2. An Example of pCDM Utilizing "Fund Scheme"

Establishing the Fund (with initial investment) by CME to provide initial cost for the new CPAs with CER sales and return from each CPA, activities can be largely expanded.



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4-3. An Example of pCDM In Pipeline (Gliricidia Fire Wood Thermal Fuel Switch pCDM)

Wood supply side

Currently available unused wood

For future expansion, newly develop plantation

User side

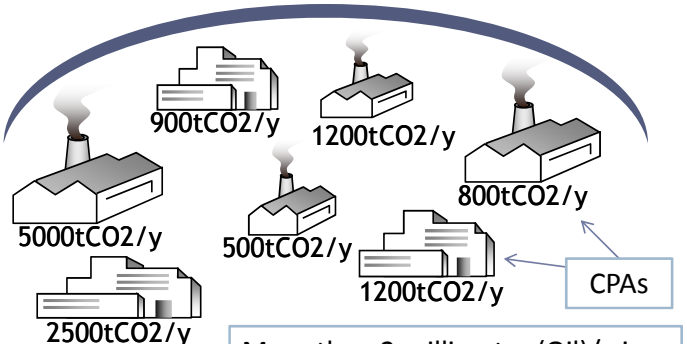
First phase

CPAs

Register the Program

CME: BEASL

Second phase



More than 2 million ton(Oil)/y is consumed by Industry in Sri Lanka

4-4. CHALLENGES OF PCDM

- High cost of project development (for registration)
- Longer time required to be registered compared to conventional CDM
- Structural formulation is very important:
  - Selection of CME
  - distribution method of CERs to CPAs etc
- Uncertainty regarding procedures such as validation, verification etc

Once the program is registered, it will benefit small scale projects in Sri Lanka very much.

THANK YOU