



R&D DIVISION

NH/R&D/149/803

17/10/05

Sub: Task Force on Clean Development Mechanism under Kyoto-protocol for obtaining Tradable Certificates of Emission Reductions

The United Nations Environment Programme (UNEP) and the World Meteorological Organizations (WMO) established the Intergovernmental Panel on climate change (IPCC) to provide policy makers with authoritative scientific information in 1988. In its first report in 1990, IPCC concluded that the green house gases in the atmosphere would "enhance the green house effect, resulting in additional warming of the Earth's Surface" by the next century unless measures were adopted to limit emissions.

The UN general assembly based on this report launched negotiations to formulate an International treaty on global climate protection, which resulted in completion of the United Nations Framework Convention on Climate Change (UNFCCC) in May 1992. The convention was opened for signatures at Earth Summit, when it was signed by 154 states and European Community. India signed UNFCCC on 10th June 1992 and ratified that in 1993.

Kyoto-Protocol convention established the Conference of Parties (COP) as its supreme Body. COP3 held in Kyoto, Japan the parties (38 industrialized countries and 11 countries in Central and Eastern Europe) agreed to a legally binding set of obligations to return their emissions of GHG an average of approx. 5.2% below their 1990 levels over the commitment period 2008-2012.

The clean development mechanism was instituted in 2001 under Kyoto-Protocol to enable developed countries to meet their green house gas reduction targets at lower cost through projects in developing countries. This came into force in Feb'2005 after Russia and European Community ratified it but the major non-participants were USA and Australia.

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The certified emission reductions (CERs) are expressed in tons of carbon dioxide equivalent. Any project resulting in net GHG reduction through efficiency improvement or through power generation from renewable energy can avail of CDM benefits.

As regards its applicability to hydroelectric projects, small hydroelectric projects 15 MW coming on renewable energy projects and some of the medium sized hydroelectric projects which can exhibit the additionality criteria are eligible for participation. The process of participation requires following stages:

CDM PROJECT CYCLE

Workstep	Responsibility
Project Idea	Project Owner
Project Design Document, PDD	Project Owner
Host Country Approval	Designated National Authority, DNA
Approval Baseline Methodology (if new)	CDM Executive Board(EB)
Validation	Operational Entity
Registration	CDM Executive Board
Monitoring of Emission Reductions	Project Owner
Verification & Certification of Emission Reductions	Operational Entity
CER Issuance	CDM Executive Board

As of Sept.'2005, Indian National CDM Authority has approved 107 potential CDM projects. The port-folio of 107 projects approved by (NCDMA) has potential to generate approx. 132 millions CERs up to end of 2012. In recent CDM host countries ratings, Point Carbon has ranked India at the top. Till Sep '2005, 19 projects have been registered world wide by CDM executive Board which includes one small hydroelectric project 5 MW namely Dehar(H.P.)





R&D had been exploring the possibility of utilizing clean development mechanism process to make the projects more viable by contribution of revenue earned by CERs. We have been in contact with leading consultants namely M/s Mitcon, M/s Earnest Young, M/s Tehri and GRF, M/s Mitsui, M/s Factor, Switzerland and M/s Perspective Climate Change, Germany. Four projects which have potential for considerations of CDM benefits identified by us are namely:

- a) **Sippi HEP** (2X2MW = 4 MW)
- b) **Kambang HEP** (2X3MW = 6 MW)
- c) **Nimmo Bazgo HEP** (3X15MW = 45 MW)
- d) **Chutak HEP** (4X11MW = 44 MW)

The determination of additionality criteria is the most important aspect for any hydro projects to qualify as CDM project. These projects are located generally in remote areas where there is power shortage. The power is the basic need of the people in that area both for domestic and commercial concerns. Presently, the requirement of power is being fulfilled through diesel generators connected with the local grid of transmission. With the construction of these projects, diesel generating units can be replaced with the environmental friendly hydro power. The revenue earned through CERs could make the project proposition more viable with the generation of additional revenue being eligible towards CDM benefits. All the consultants have communicated that these 4 projects have great potential for qualifying for CDM benefits. Another important issue which has come up during these discussions is that at the time of preparation of PFR's/ DPR's or even at a subsequent stage, the project developer should demonstrate and keep on record that the project is likely to become more viable because of the CDM benefits. Due to documentation there is improved chance of getting such projects eligible for CDM. Consultants have advised that it is preferable that all the DPR's should contain a separate chapter on CDM benefits. We have already obtained proposal from different reputed vendors. Some of the vendors have agreed to incur the expenditure on the processing of CDM proposal without any initial financial burden on NHPC for their consultancy, which shall be recovered after commissioning of the project and subsequent revenue generation through CERs.

This being a very specialized field requires thorough knowledge in the field of environment and green house gas reduction areas to interact with





various consultants. So, the involvement of environmental group of Planning Division and Consultancy Division for appropriate MOU's etc. is considered essential for proceeding further. The case file had already been sent to Planning Division for their views on CDM chapter in DPR who endorsed our views but asked for more detailed study. The matter is further being explored with MNES and MOEF, with whom the meetings have to take place. One CER of 1 tons equivalent of carbon dioxide is available roughly for every kw hr of generation which has an existing value of around Euro 10/ CER. Revenue streams after approval is limited to either 10 years or 3X7 years (if in this option after every 7 years the project has to demonstrate that it is still having the additionality aspect) or after 7 years it can be got converted to 10 years revenue stream in case there is less likelihood to further clearance towards CDM benefits.

We can derive a great benefit by processing the small and medium sized hydro projects for CDM benefits. At a later date attempts can even be made for big size hydro projects for deriving similar benefits in respects of run-of-the-river schemes with small sized reservoir. It is in the fitness of the things that either a task force or rather a new dedicated group could be formulated for proceeding ahead for seeking CDM benefits in respects of these hydro projects in the beginning and subsequently for other medium and large run-of-the river schemes which could qualify the criteria of additionality.

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Submitted please.

(Signature)
(A.K.Sachdeva) 14/10/05
Executive Director(R&D)

~~D(T)~~
pl. discuss
24/10.
~~ED(R&D)~~

Discussed with D(T) on 25/10/05. D(T) has decided that R&D should equip itself with sound knowledge about CDM, its applicability to hydro & make a presentation on 18/11/05 & to deal with CDM.

~~GM(R&D)~~ (M)
CE-3 3K.

(Signature)
25/10

