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CIRCULAR

Subject: -CDM Benefits (by reduction of Methane emission) from Solid Waste Management & Wastewater Treatment Projects

There is an opportunity for all ULBs to earn additional revenue from their ongoing and upcoming projects, which avoid emission of Methane gas. Methane, a Greenhouse Gas is produced during decomposition of organic matter under anaerobic conditions. The ULBs in Rajasthan are already executing variety of projects such as installation of composting plant to treat organic solid waste, treatment of municipal sewage in STPs under UIDSSMT, or on their own with the help of State share or through any other funding sources. These projects could potentially be eligible for Clean Development Mechanism (CDM) registration under the United Nations Framework Convention on Climate Change (UNFCCC).

The CDM is a mechanism under the Kyoto Protocol (1997) through which public or private entities of developed countries may finance greenhouse-gas emission reduction or removal projects in developing countries. CDM projects registered with the CDM Executive Board (EB) generate Carbon Credits or Certified Emission Reductions (CERs) every year.

RUIDP has already started developing a CDM Program of Activities(CDM PoA) called "Rajasthan Urban Solid Waste Composting Program" with the guidance of Asian Development Bank in 15 towns so far to help them register their projects and earn CDM revenue. This benefit will directly go to the concerned ULB during O&M period.

If a project is developed with prior consideration of CDM then it would bring additional revenues from sale of Certified Emission Reductions (CERs) every year.

This will reduce financial burden of the ULBs for operating such projects. The close monitoring is necessary under the CDM monitoring procedure, which will ensure that the projects are being operated as per the design. Each CER is equal to reduction of one ton CO_2 equivalent., Sale price of one CER is approximately 10-12 Euro. One ton Methane (CH_4) is equal to 21 ton CO_2 equivalent, therefore, quantity of CERs in case of methane reduction is 21 times more than the quantity of CERs from CO_2 reduction. Fundamentals and methodologies of CDM and procedure to register a project are available on MoEF & UNFCCC websites. An overview of this information is also provided in enclosed Annex-A.

It is expected from all ULBs that goal of CDM registration shall be considered at the planning stage and a Chapter on Clean Mechanism Development (CDM) shall be introduced at the initial stage of preparation of Detailed Project Reports of all such projects in which CDM can be applied. In addition, CDM shall also be considered and included in the bid documents of such relevant projects.

All ULB's are directed to start following the procedures to get their projects registered under CDM at the level of MoEF, Govt. of India and UNFCCC. For more detail, please visit **http://cdm.unfccc.int or www.cd4cdm.org**. You may also contact Mr. D.R. Jangid Assistant Project Officer (Mobile no. 9414345118) RUIDP CDM Cell Jaipur.

Encl. As above

Principal Secretary
UDH& LSGD, GoR, Jaipur

Copy to following for information & necessary action:-

No. F3(106)(41)/IPMU-CDM/2011/ 9589-9639 Date: 11/07/2011

1. PS to Principal Secretary ULB &LSGD
2. Secretary LSGD
3. Project Director RUIDP
4. Executive Director, RUIFDCO, Jaipur
5. CEO Jaipur/Kota/Bikaner/Ajmer/Jodhpur
6. Directorate Local Bodies, Jaipur to circulate this to all ULB's from your level.
7. Project Director, DLB, Jaipur
8. Team Leader, RUIFDCO, Jaipur
9. SE DLB, Jaipur
10. D.R Jangid APO, CDM Cell, RUIDP Jaipur
11. All Municipal Councils/ Executive Officers ----------

Project Director
RUIDP, Jaipur

Annex-A

AN OVERVIEW OF CDM & PROCEDURE TO REGISTER A PROJECT

CDM is intended as a "win-win" solution for reducing global GHG emissions. It : (i) allows industrialized countries to invest in developing country projects and acquire GHG emission reduction (ER) credits that they can use to meet their GHG reduction targets under the Protocol and (ii) mobilize additional financial resources for developing countries to implement projects that reduce GHGs and promote sustainable development. Under Kyoto Protocol, the developed nations have been given a GHG reduction targets while the developing countries have no targets. Therefore, the developed countries need to purchase the shortfall of Emission Reductions from the developing countries. India approved the establishment of the National Clean Development Mechanism Authority (NCDMA) on 2nd December 2003. The NCDMA is chaired by the Secretary, Ministry of Environment and Forests (MOEF), Govt. of India.

It is a legally binding international treaty that stipulates actions to be taken by nations to combat global climate change. It stipulates the limits of emissions of six greenhouse gases for 38 industrialized nations. CDM allows these nations to purchase carbon credits by assisting climate change mitigation projects (CCMP) in developing countries. Carbon credits or Certified Emission Reductions (CERs) are generated every year by CCMPs registered with the CDM Executive Board (EB). Each CER is equivalent to reduction of 1 ton of CO_2 equivalent. The CERs generated by a CDM project are calculated in accordance with monitoring plans developed as per approved baseline and monitoring methodologies. The CDM projects have to be validated by third party validators prior to the registration.

Types of projects eligible under CDM

The following types of projects are eligible under CDM. Projects involving:

- Use of Renewable energy sources (e.g. wind, small hydropower, biomass, solar energy)
- Energy efficiency improvement on supply side and demand side
- Switching to cleaner fuels e.g. coal or furnace oil to natural gas, LPG, biomass etc.
- Waste management- Methane avoidance through Aerobic Composting, Methane Capture through Anaerobic digestion followed by flaring or using the biogas for generation of heat and/or power, Landfill gas capture and use/flaring, Combustion of Refused Derived Fuel (RDF).
- Sewage treatment plant
- Industrial greenhouse gas capture and destruction (destruction of N_2O, Hydro fluorocarbons etc.)
- Afforestation and reforestation

- Water supply sector- by replacement of low efficiency water pumps by new state-of-the-art pumps with higher energy efficiency

Broad estimate of CDM benefits for projects involving solid waste treatment through composting projects

As per the baseline methodologies applicable for the solid waste composting sub-project in a city with a population of 100,000 that generates around 40 tons/day of MSW (@400 gm per capita per day) with 40% compostable waste (CPHEEO manual) could generate up to 5,000 tCO_2e emission reductions every year. This would translate in to Rs. 30 lakh annually (at conservative price of €10 per CER @ Rs. 60/€). This would be approximately 34% of the revenue from sale of the compost (assuming that 16 tons of compost is generated daily and sold @ Rs. 1500/ton).

Estimate of benefit from water pump rehabilitation / replacement projects

In case of the water pump replacement subproject, the saving of every one million units (Kilo watt hour) of power would result in reductions of around 800 tCO_2e.

Estimate of benefit from STP projects

The estimated quantity of methane gas generation from Activated Sludge Treatment Plant is calculated as follows (Ref. Book: Sewage Treatment by Karl Imhoff Page 204-205) Biogas Produced from digestion of mixed activated and primary sludge (conventional operation) = 1.5 cub. ft. per capita per day. Methane content in Biogas = 65 to 80 %. Dry weight Methane Gas = 0.0446 lb/ cub. ft. Methane generation for 100000 population = 0.0446 x 100000 x 0.65 x 1.5 = 4348.5 lb/day = 1978.57 Kg/day = 1.97857 x 365 = 722.2 Ton/ year. The CERs for one year will be 722*21=15162 CERs. The value of these CERs (one CER=10-12 Euro) would be about Rs. 909720 (Rs. 9.00 lacs per year per lac Population.

What needs to be done to avail CDM Benefits

In order to avail the CDM benefits, following must be done:

- The projects have to be registered as CDM projects. This will entail preparation of Project Design Document (PDD) and Project Concept Note (PCN) for the subprojects separately for the composting and energy efficiency projects. The PDD will then be validated by a Designated Operational Entity (DOE). In parallel, the PDD and PCN will be submitted to the Designated National Authority (DNA), which has been formed by Ministry of Environment and Forests (MOEF), Government of India. After its review the DNA will issue a Host Country Approval letter. The DOE will submit the PDD and other relevant documents for comments on the UNFCCC website for 30 days.
- In parallel, the DOE will conduct validation of the PDD and other documents and after taking due account of any comments received

both from UNFCCC website as well as from local stakeholders, will submit the request for registration to the EB.

- The registration will be considered final eight weeks (four weeks in case of small scale CDM projects) from receipt of the request for registration, unless a Party involved in the project activity or at least three members of the EB request a review of the proposed CDM project activity
- After registration of the project, a Monitoring report will be prepared according to the Monitoring plan stated in the registered PDD since it is a condition for Verification.
- Certification and Issuance of CERs- Upon receipt of the Monitoring report from the project participants, the DoE will verify and certify the emission reductions achieved during the period covered by the monitoring plan. The DoE will make a Request for Issuance of CERs by submitting the Certification report to the EB. The EB then instructs the CDM registry administrator to issue the specified quantity of CERs.

Procedure to proceed with CDM registration of solid waste composting projects

In case of solid waste composting project, the size of a project is expected to be small. Besides, each city would have an individual composting facility. The CDM EB has allowed registration of "Programme of Activities" (PoA). This allows registration of a single PoA Design Document (PoA-DD) for similar project activities that would be developed in a period of the programme. This facility would be most appropriate to programmes such as one RUIDP is developing. Once the PoA-DD is registered with PDD of a sample project, the PoA allows subsequent addition of sub projects in a period of 28 years. The PoA will be coordinated by a single agency such as RUIDP. It is, therefore suggested to follow the PoA approach for this sub sector.

Transaction costs of CDM registration and issuance of carbon credits

The CDM registration would involve expenses for development of PDD (approx. US $ 10,000), validation ($10,000), and registration fees (Nil for projects generating up to 15,000 CERs, $0.1 per CER between 15,000 to 100,000 and $0.2 per CER above 100,000 CERs with a cap of US $ 350,000) and issuance would involve expenses towards annual verification of the project performance.

Procedure for Submitting CDM Project Reports to the National CDM Authority (NCDMA).

The National CDM Authority (NCDMA) is a single window clearance for CDM projects in the country. The project proponents are required to apply to the administrator of National CDM Authority through the website by filling the User Registration form. Upon acceptance of the request, the project proponent shall fill in online the Project Concept Note (PCN) and also upload

the Project Design Document (PDD). The National CDM Authority examines the documents and if there are any preliminary queries the same are asked from the project proponents. The project proposals are then put up for consideration by the National CDM Authority. The project proponent and his consultants are normally given about 10-15 days notice to come to the Authority meeting and give a brief power point presentation regarding their CDM project proposals. Members seek clarifications during the presentation and in case the members feel that some additional clarifications or information is required from the project proponent, the same is informed to the presenter. Once the members of Authority are satisfied, the Host Country Approval (HCA) is issued by the Member-Secretary of the National CDM Authority.

Support in the process for registration

There are consulting firms in the country who are working for registration of CDM Projects in private sector as well as Government sector. The Details of such consultants can be obtained from National CDM Authority (Designated national authority (DNA), Ministry of Environment & Forests, New Delhi, Web site- ***www.cdmindia.nic.in.***

ADB has also set up the Carbon Market Initiative to assist the projects eligible under CDM funded by it under its three components:

- The Asia Pacific Carbon Fund (APCF) to provide upfront finance in lieu of 25-50% of carbon credits that would be generated after the project is implemented and operations are started. This helps in funding the projects as against the prevalent "pay on delivery" mechanism.
- Technical Support Facility (TSF) to provide technical support through National and International Consultants, in preparing documents like PDD, PCN, in arranging host country clearance, identifying and recommending the DOE for validation and facilitating registration for 15 project towns under ADB phase-II. CMI operates on purely voluntary basis and can be extended the above support if RUIDP agrees.
- The Carbon Market Facility (CMF) to assist in marketing of residual carbon credits (those which are not purchased by APCF) at best possible prices quoted in the market.

Overall time frame, the project cycle and CDM cycle

The preparation of the PoA-DD will require around a month and can be undertaken after the DPR of the subproject of one of the cities in Phase I is made available. The host country approval process would require 2 months (due to a long queue of projects applying for approvals) and around 2 months for validation. These two steps can be conducted simultaneously along with uploading of the PDD for comments on UNFCCC website. Registration would take another four weeks.
