

Implementation plan of small wind power in Mongolia



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Seung-Jae Moon (RCC Co.), Jambaa (ADB Consultant),
Ganbold (Energy Authority)

1. Project outline



- Project : Capacity building program on CDM in Mongolia
- Project period : 2010.7 ~ 2010.10
- Project purpose : Prepare the CDM component on small wind and its hybrid power systems
- Detailed tasks
 - . Suggest timeline for CDM considering work (planning ~ implementation stage, pilot projects, etc)
 - . Data collection and analysis
 - . Suggest the scope of consultation procedures for stakeholders to implement the small wind and its hybrid systems
 - . Determine the best approach (PoA or bundled CDM) and prepare PDD and guideline
 - . Highlight key CDM related issues

2. Selection of Pilot site for CDM project

- Condition of pilot site selection
 - . Remote area : soum center with off-grid
 - . Supply from existing small diesel power
 - . Good quality of renewable energy sources (specially wind)
 - . Experience of hybrid system (improvement of old hybrid system)
- Pilot site : Bayan-under soum, Khatanbulag soum



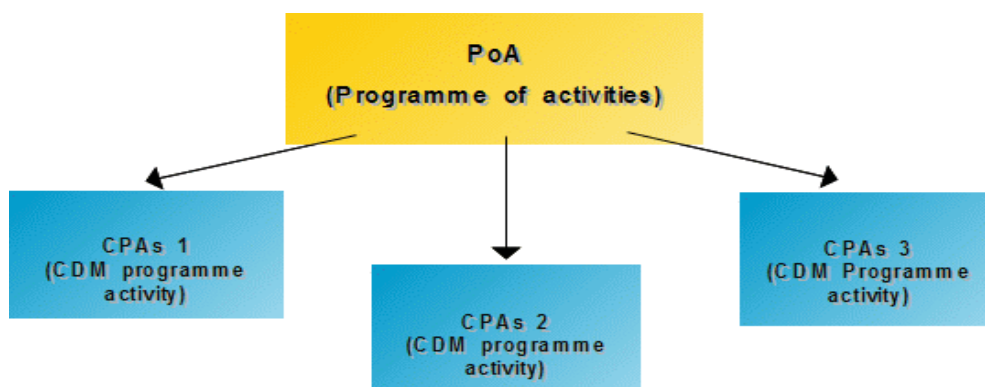
* Electricity demand : Bayanunder Ave 54kw (Max 90kw, Min 28kw)
Khatanbulag Ave 72kw (Max 110kw, Min 40kw)

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3. CDM project implementation plan

A. Bundling CDM & Program CDM project

- **Bundling CDM** : 1 Project Design Document (PDD) includes several small projects (within small scale capacity)
- **Program CDM** : PoA PDD + CPA PDD



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3. CDM project implementation plan



B. Feasibility of bundling CDM project

- **Methodology : AMS-I.A “Electricity generation by the user “**

This project electrifies the non-electrified rural soum, which has not been connected to the power grid and is not planning to connect to the power grid in the near future, by constructing hybrid (categorized under renewable energy) system.

- **GHG emission reduction : $BE_{CO_2,y} = EE_{BL,y} \times EF_{CO_2}$**

Since this newly built hybrid system does not emit GHGs in operating, GHGs would have been emitted by the assumingly set up diesel power generation without this project. Amount of GHGs emission from the diesel power generation is calculated with using a default value of CO₂ emission coefficient from diesel power generation units, 0.8kg-CO₂/kWh.

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4. CDM project implementation plan



- **Bundled reductions : 133 t-CO₂/year**

- Bayanundur soum : $54\text{kw} \times 4 \times 0.9 \times 365 \times 0.8\text{kg} = 57 \text{ t-CO}_2/\text{year}$

- Khatanbulag soum : $72\text{kw} \times 4 \times 0.9 \times 365 \times 0.8\text{kg} = 76 \text{ t-CO}_2/\text{year}$

- **Bundled CDM is not good**

- Project size and CERs are too small

- Transaction cost is not covered

- Many project are needed for a lot of CERs

- Monitoring problem

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4. CDM project implementation plan



C. Feasibility of program CDM project

- Methodology

Methodology

- AMS-I.A “Electricity generation by the user “
- AMS-I.C “Thermal energy production with or without electrical energy ”

CDM project

(unit : number of project)

| Methodology | CDM project | | PoA CDM project | | Similar P CDM | |
|-------------|-------------|------------|-----------------|------------|-------------------------|------------|
| | Total | Registered | Total | Registered | Total | Registered |
| AMS-I.A | 15 | 9 | 1 | 0 | 1 (Solar PV) | 0 |
| AMS-I.C | 265 | 59 | 10 | 0 | 6 (Solar Water Heating) | 0 |

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3. CDM project implementation plan



- Future work for program CDM project

Establish the PoA & CPA plan

PoA & CPA model

- PoA project plan : Programme of Activities
 - small hybrid system in Mongolia (year 2013~2030)
 - Additional hybrid implement policy in Mongolia
- CPA project plan : CDM Program Activity (CDM program project under PoA)
 - Pilot projects in rural area
 - Additional hybrid systems
 - Mongol renewable energy policy

Write PoA & CPA PDDs

PoA & CPA PDDs

- Selection of proper methodology and additionality analysis
- Write PoA & CPA PDDs
 - PoA PDDs : Hybrid systems & small renewable energy in Mongolia
 - CPA PDDs : 2 pilot sites

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Thank you for your attention!