SMALL SCALE RES MRV in Kazakhstan

MONITORING PLAN 06 NOVEMBER 2019

The Assignment

The 31 July 2019 a contract has been signed between **UNDP Kazakhstan** and **NIRAS** represented by **Morten Pedersen** from Denmark.

The title of the assignment **"Preparation and development an MRV system of international standard for regular measurement, reporting, and verification of relevant indicators for the small-scale renewable sector".**

The final output is to prepare a **monitoring plan for specific and selected RE technologies.**

The contract with NIRAS was successfully performed in the period **August – October 2019**.

Overall purpose

The overall purpose of having a small scale RES (Renewable Energy System) MRV is threefold

To be able to report the green development of Kazakhstan as part of the UNFCCC reporting requirement.

CO2

To have an option to have the CO2 emission as part of the national ETS system or under the Article 6 of the Paris Agreement

To have an overview of the implementation and impact of the measure in Kazakhstan

Key principles

1 Promoting UNFCCC priorities transparency, accuracy, completeness, consistency and comparability when implementing the RES MRV system

2 When developing the RES MRV system for the specific technical solution, the UNFCCC approved CDM methodologies will be used as a main source. The eligibility criteria and monitoring plan in these methodologies shall be adopted the Kazakhstan conditions.

3 The approved process and MRV of the national projects according to current legislation shall be taken into consideration.

4 Sustainable Development Co-Benefits shall be an integrated part of the RES MRV system and these benefits shall be carefully evaluated as cost-benefit shall be the focus.

5 RES MRV shall be developed so it can be covered by national funding and the RE MRV shall be as such be operational without donor funding.

Renewable Energy methodologies

Under **UNFCCC the Kyoto Protocol** a significant number of Renewable Energy methodologies have been developed and the ones relevant for this assignment are described in the below section.

Under the Japanese program - **Joint Crediting Mechanism** renewable energy methodology has been developed and solar PV has been used in many countries, but **it has not been developed for Kazakhstan yet**.

<5MW

Several voluntary programmes also cover renewable energy. Gold Standard is presented as they have developed microscale methodologies for **less than 5 MW**.

Small scale project types – CDM methodologies selected

	Off-grid	On-grid
Small scale Solar PV, wind and hydro projects	Included	Included
Solar Water heaters	Included	

	Off-grid	On-grid
Small scale Solar PV, wind and hydro projects	AMS 1.L Electrification of rural communities using renewable energy	AMS 1.D. Grid connected renewable electricity generation
Solar Water heaters	AMS 1.J Solar water heating systems	- N/A

Programmatic Approach

PV >15 MW PoA

- The classical structure of CDM uses a project-by-project process for registering and verifying projects. This approach involves very high transaction costs, a long time to market, and a high risk of non-registration. In order to reduce transaction costs in CDM and expand the mechanism's applicability to micro project activities, **the CDM Executive Board launched the Programme of Activities modality (PoA)**.

- Above approach shall also be considered by Kazakhstan. For now the situation is that only **small scale RE projects below 15 MW is eligible**.

- A project developer can for instance consider implementing a significant number of 1 MW solar PV in entire Kazakhstan and maybe the project developer would like to install 100 solar PV. In case the total installed capacity will be 100 MW after all the 1 MW solar PVs have been installed. Probably the project developer will also do it in a gradual process depending on demand and financing.

- **Kazakhstan should consider adjusting the rules for the domestic projects, so it will cope with above scenario**.

Monitoring plan for small scale RE projects

Instruction to monitoring plan for small scale RE projects	
Monitoring Plan Requirements	**Instruction to project developer**
Project description	Short description of the project approximately 1 page. It shall as minimum cover location, main idea of the project, stakeholders, technology, potential CO2 emission reductions, potential other SDG benefits, contact details project developer and what is expected to be achieved through the monitoring of the project.
Management of the monitoring plan	List the operational and management structure the project developer will put in place to implement the monitoring plan.
Data provisions	Explain the arrangements that are in place for your project that will ensure that all data monitored and required for verification and issuance is kept and archived for instance electronically Present the data and parameters to be monitored Data / Parameter: 1)Data Unit, 2) Description 3) Source of data, 4) Measurement procedure (if any), 5) Monitoring frequency, 6) Any comments
Definition of responsibilities for the data	Include a definition of responsibilities and institutional arrangements for sourcing data collection and archiving.
QA/QC procedures	Explain QA/QC procedures planned for the data, or why such procedures are not necessary.
Uncertainty levels, methods, and the associated accuracy level	State the uncertainty levels, methods, and associated accuracy level of measuring instruments to be used for various parameters and variables.
Specifications of the calibration frequency for the measuring equipment	Where there are no specifications in the selected methodology the project developer must ensure the equipment is calibrated in accordance with the Kazakhstan standards or as per the manufacturer's specifications. If Kazakhstan standards or the manufacturer's specifications are not available, international standards may be used.

Monitoring plan – Solar PV, wind and hydro projects connected to the grid (example)

This section includes supplementary instructions to the monitoring plan for Small scale Solar PV, wind and hydro projects connected to the grid.

- **Project description**

The project description the actual situation in relation to energy supply and consumption and size and number of Solar PVs, wind and hydro units to be installed.

- **Data provisions - GHG**

Data/Parameter	EF –emission factor for the grid
Data Unit	t CO_2e/kWh
Description	CO_2 emission factor of the grid electricity in year y
Source of data	-
Measurement procedure	As per the requirements in “Tool to calculate the emission factor for an electricity system” as per CDM or as proposed by the Agency of Statistics/ Zhasyl Danu JSC
Monitoring frequency	-
Any comments	-

Recommendations for the next steps

- ✓ The monitoring plan for small scale RE projects **shall be processed formally and shall be adapted and used accordingly.**

- ✓ For the monitoring plan it is important **to clarify whether Non-GHG shall be part of the documentation** when developing a project.

- ✓ **To prepare three suitable RE methodologies valid for Kazakhstan based on the international recognised methods**, for instance adjusting the CDM. The methodologies shall be adjusted by addressing the eligibility criteria and when options in a methodology select upfront what is suitable for Kazakhstan. The three RE methodologies shall cover: 1) Small scale Solar PV, wind and hydro projects – off-grid, 2) Small scale Solar PV, wind and hydro projects – on-grid and 3) Solar Water Heaters – off-grid.

- ✓ The monitoring plan with be an integrated part the development CO2 reducing projects and following issues related to the monitoring should have attention :
    1. The monitoring report format and verification report format should be developed for small scale RE to support a uniform and easy administration,
    2. Consider the programmatic approach for easier and less costly administration.