**Additional file 4. Proposed implementation framework of SDM**

Qualified third-party audit agency

Evaluate project submitted by enterprises according to specific requirements of SDM projects in the Paris Agreement and current industry status.

Issue compliance reports:

-Not meet requirements: terminate the project;

-Meet requirements: issue feasibility report as submission material delivered to domestic governments.

The COP

-Formulate compliance development requirements for SDM, verify the mitigation results, work as a third-party who monitors, reviews and verifies the standards;

--Formulate trading rules at the international level to guide the work of Executive Committee;

-Revise and improve SDM, summarize the contribution of SDM to the achievement of INDCs’ goals.

Qualified third-party audit agency

Measure emission reduction results of enterprises according to the sustainable development verification method for emission reduction results of SDM in the Paris Agreement.

Issue emission reduction results measurement reports:

-Based on the actual emission reduction prepare a report faithfully as an important basis for the Executive Committee to issue emission reduction units.

SDM information acquisition:

-Forums, meetings;

-Data, information;

-Consultation, advisory.

Stakeholders

Own the right to challenge the project to the host country and get a reply at the stage of project application, submission, review and implementation.

Industry associations

Inform third-party agencies and international-level Executive Committees of the industry's development status and technology level to ensure that they understand the industry's emission reduction potential in time.

Qualified third-party audit agency

Regularly measure emission reduction results of enterprises according to the sustainable development verification method for emission reduction results of SDM in the Paris Agreement.

Issue measurement reports on emission reduction results:

-Record actual emission reduction results of the project and submit to the entrusted enterprise.

-Report project monitoring materials to the host government and the Executive Committee.

**Project Development**

Enterprises:

-Investment companies shall satisfy requirements of the industry level to determine content of investment project and submit it to a third party who then delivers a feasibility report;

-Enterprises from the host country make an application to the host country.

**Submission and review**

The government:

-Review projects based on domestic management rules, submit qualified projects to international-level Executive Committee for review and registration;

-Domestic publication of transaction information and receive opinions from stakeholders;

-Executive Committee: review and project registration.

**Implementation and monitoring**

Enterprises: regularly appoint a third-party agency to monitor mitigation results and deliver monitoring report to the host country as well as Executive Committee;

Host country and Executive Committee: record monitoring results and promptly indicate any problems.

**Acceptance and transfer**

Executive Committee: calculate mitigation results for the entire cycle of the project based on the third-party’s reports and award corresponding emission reduction unit to the government of investment country;

The government: register on INDCs and deduct/ increase corresponding emission reduction units from independent contributions;

Enterprises: obtain/ deduct corresponding emission reduction units.