CLEAN DEVELOPMENT MECHANISM
SMALL-SCALE PROGRAMME OF ACTIVITIES DESIGN DOCUMENT FORM
(CDM-SSC-PoA-DD) Version 01

CONTENTS

A. General description of small-scale programme of activities (SSC-PoA)

B. Duration of the small-scale programme of activities

C. Environmental Analysis

D. Stakeholder comments

E. Application of a baseline and monitoring methodology to a typical small-scale CDM Programme Activity (SSC-CPA)

Annexes

Annex 1: Contact information on Coordinating/managing entity and participants of SSC-PoA

Annex 2: Information regarding public funding

Annex 3: Baseline information

Annex 4: Monitoring plan

NOTE:

(i) This form is for the submission of a CDM PoA whose CPAs apply a small scale approved methodology.

(ii) At the time of requesting registration this form must be accompanied by a CDM-SSC-CPA-DD form that has been specified for the the proposed PoA, as well as by one completed CDM-SSC-CPA-DD (using a real case).

SECTION A. General description of small-scale programme of activities (PoA)

A.1 Title of the small-scale programme of activities (PoA):

Establishment of condensate recovery system in Tianjin Economic-Technological Development Area (TEDA), Tianjin, China

Version: 01
Date: 31/01/2008

A.2. Description of the small-scale programme of activities (PoA):

>> The following information shall be included here:

1. General operating and implementing framework of PoA
2. Policy/measure or stated goal of the PoA
3. Confirmation that the the proposed PoA is a voluntary action by the coordinating/managing entity.

This Programme of Activity; PoA is aimed to improve the energy efficiency and to reduce the GHG emission in the Tianjin Economic-Technological Development Area (TEDA), by returning the condensate which is generated by the steam consumers (such as factories, office buildings, etc.) to the local heat generation plant, and utilize the condensate as boiler water, which, is expected to reduce the consumption of coal used to generate steam. The proposed PoA, is intended to contribute to the achievement of the objectives 11th-5year plan of the PRC Government which is to reduce the GDP energy consumption ratio by 20% by 2010. Along with the Tianjin Economic-Technological Development Area Management Committee Ordinance No. 119, which was compiled to achieve the national energy-saving goal within TEDA, the proposed PoA shall be one of the important programs to promote the energy-savings in TEDA.

The coordinating/managing entity of the proposed PoA is the TEDA Environmental Management, designated by the TEDA Government. The TEDA Environmental Management organizes the committee based on the application by generator, distributor or consumer which wishes to participate in the proposed PoA, comprising from the stakeholders related with the formulation of the condensate collection system. It shall also give advices and coordinate different views for the realization of the condensate collection system. If the agreement is reached between the stakeholders and the project goes under implementation, the coordinating/managing entity pays cooperation fee to the generator/distributor/consumer according to the degree of contribution towards the 11th- 5 year plan. The proposed PoA aims to build and enlarge the condensate collection system through the aforementioned incentive to the steam generator/distributor/consumer. The proposed PoA is a voluntary action on the part of the coordinating/managing entity to comply with the goals mentioned in the 11th-5year plan and is not a legally enforced action.

A.3. Coordinating/managing entity and participants of SSC-POA:

>> The following information shall be included here:

1. Coordinating or managing entity of the PoA as the entity which communicates with the Board
2. Project participants being registered in relation to the PoA. Project participants may or may not be involved in one of the CPAs related to the PoA.

The coordinating/managing entity of the proposed PoA is TEDA Environmental Management, which is entrusted by the TEDA Government to promote the proposed PoA. TEDA Environmental Management is one of the affiliate company of the TEDA Holdings of which the main business objective is to construct and manage the infrastructures within the TEDA area.

Furthermore, the project participants of the proposed PoA are shown below. SSC-CPA (implemented under the proposed PoA) implementer cannot be a project participant.

Table A.3-1 Project Participants

Name of Party involved (*) ((host) indicates a host Party)	Private and/or public entity(ies) project participants (*) (as applicable)	Kindly indicate if the Party involved wishes to be considered as project participant (Yes/No)
People's Republic of China (host)	TEDA Environmental Management	No
Japan	Energy Initiative Japan Inc.	No
(*) In accordance with the CDM modalities and procedures, at the time of making the CDM-PDD public at the stage of validation, a Party involved may or may not have provided its approval. At the time of requesting registration, the approval by the Party (ies) involved is required.		

The details of the project participants are shown in Annex 1.

A.4. Technical description of the small-scale programme of activities:

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A.4.1. Location of the programme of activities:

A.4.1.1. Host Party(ies):

People's Republic of China

A.4.1.2. Physical/ Geographical boundary:

>> Definition of the boundary for the PoA in terms of a geographical area (e.g., municipality, region within a country, country or several countries) within which all small-scale CDM programme activities (SSC-CPAs) included in the PoA will be implemented, taking into consideration the requirement that all applicable national and/or sectoral policies and regulations of each host country within that chosen boundary;

The physical/geographical boundary of the proposed PoA is TEDA. TEDA is situated 45km south-east of the central Tianjin City, and the whole area is approximately 78.1km2. TEDA is consisted of 6 Districts, namely: The Main District (approx. 38º 57' 19" - 39º 05' 13" N; 117 º 35' 59" - 117 º 46' 15" E）, The West District (approx. 39º 02' 48" - 39º 05' 46" N; 117 º 27' 28" - 117 º 35' 50" E), Chemical Industrial Complex (approx. 39º 13' 03" - 39º 14' 00" N; 117 º 46' 53" - 117 º 48' 27" E), Electronic Industrial Complex (approx. 39º 01' 40" - 39º 02' 26" N; 117 º 17' 31" - 117 º 18' 32" E), Chemical Industrial Complex (approx. 39º 13' 03" - 39º 14' 00" N; 117 º 46' 53" - 117 º 48' 27" E), Export Fabrication Complex (approx. 38º 57' 19" - 39º 05' 13" N; 117 º 35' 59" - 117 º 46' 15" E). The below figure shows the physical/geographical boundary of the PoA.

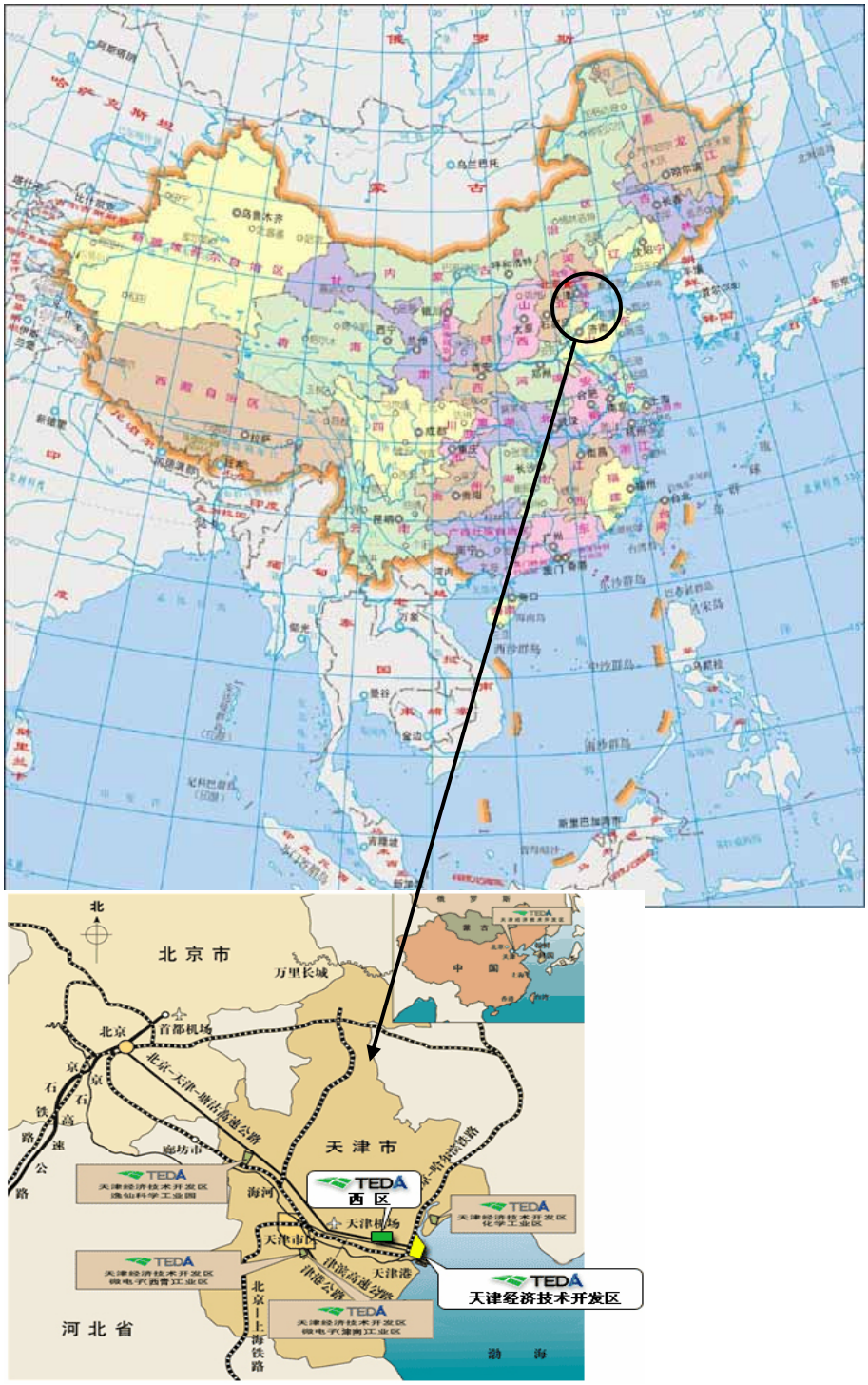

Figure Physical/geographical boundary of the proposed PoA

A.4.2. Description of a typical small-scale CDM programme activity (CPA):

A.4.2.1. Technology or measures to be employed by the SSC-CPA:

The objective of the SSC-CPA under the proposed PoA, is to form the condensate collection system between the local heat generation plant and steam consumers. The below shows the objectives of the measures which the local heat generation plants, the steam distributors and the steam consumers which are the SSC-CPA implementers to realize the condensate collection should take, together with the necessary technologies and facilities.

(1) Local heat generation plant (Steam generators)
The measures which the local heat generation plant should take is mainly the water quality control measures to prevent corrosion of the boiler or pipes by the utilization of the collected condensate. The following are some specific examples:

- Addition of corrosion inhibitor to the collected condensate
- Removal of the iron from the condensate by setting condensate filter (prevention of corrosion)
- Periodical sampling and analysis of the condensate water and comparison with the boiler feed water standard etc.

(2) Steam distributor
The measures which the steam distributors should take are the maintenance and management of the condensate collection pipe. Below should be some specific examples:

- Construction of the condensate pipeline from the steam consumers to the district heat plant
- Prevention measures from the corrosion of the external side of the condensate pipe (such as lining: as TEDA is located on the landfill on the seashore, there is a possibility of exterior corrosion caused by the salinity in the soil)
- Prevention of stagnation of the condensate water (The oxidization of the condensate causes the corrosion of the pipe) etc.

(3) Steam consumer
The measures which the steam consumers should take is centered on collection of the condensate produced by the steam consumers, and returning the water to the steam generators taking care to maintain the water quality so that the water can be reused as boiler water. Below are some specific examples:

- Installation of condensate collection facilities (Such as condensate collection pipe inside the area, hot well tank, etc.)
- Measures to prevent mixing of other waters to the condensate
- Measures to prevent contamination of oil and fat to the condensate
- Installation of deaerator to prevent oxidization of the condensate
- Periodical sampling and analysis of the condensate water and confirmation of the water quality etc.

Upon the formation of the condensate collection system, the most appropriate measures and technologies should be introduced according to the specification of the SSC-CPA implementers.

A.4.2.2. Eligibility criteria for inclusion of a SSC-CPA in the PoA:

>> Here only a description of criteria for enrolling the CPA shall be described, the criteria for demonstrating additionality of CPA shall be described in section E.5

The eligibility criteria of the SSC-PCA to be included in the proposed PoA, includes the following:

- Part or all of the condensate collected by the SSC-CPA shall be used as boiler water of the local heat generation plant.
- The boiler efficiency in the SSC-CPA should be improved through the utilization of the waste heat of the condensate. (Does not include projects which use condensate simply as water resource)
- All of the facilities of the steam generators, distributors, consumers which implement the SSC-CPA is situated within TEDA.

A.4.3. Description of how the anthropogenic emissions of GHG by sources are reduced by a SSC-CPA below those that would have occurred in the absence of the registered PoA (assessment and demonstration of additionality):

>> The following shall be demonstrated here:

(i) The the proposed PoA is a voluntary coordinated action;
(ii) If the PoA is implementing a voluntary coordinated action, it would not be implemented in the absence of the PoA;
(iii) If the PoA is implementing a mandatory policy/regulation, this would/is not enforced;
(iv) If mandatory a policy/regulation is enforced, the PoA will lead to a greater level of enforcement of the existing mandatory policy/regulation.

The information presented here shall constitute the demonstration of additionality of the PoA as a whole.

The proposed PoA is a voluntary coordinated action aimed to contribute to the energy saving goals of the 11^{th} – 5 year plan of the PRC Government. The proposed PoA does not neither fulfil any enforced policy or regulation which is not abided, nor exceed any enforced policy or regulation which is abided.

Tianjin Economic-Technological Development Area Management Committee Ordinance No. 119 "Temporal regulations for stimulation of energy savings and environmental conservation in the TEDA" (effective on Sept. 15^{th} 2007) stipulates the below support system to promote the condensate collection, but this is not enforced.

【Steam condensate collection project】is a steam condensate collection pipe loop system, which is constructed to collect steam condensate.
Requirement conditions: Steam collection rate is 60% or over, emitted water quality should meet the standards such as the "Industrial boiler water quality" (GB/T 1576-2001)
Subsidy standards and methodology: Based on the project investment amount, the implementing cooperation is subsidized 30%. The upper limit of the total subsidy is 500,000 yuan.

The objective of the proposed PoA, is to improve the energy efficiency upon steam production, through formation of the condensate collection system at TEDA and thus collect the waste heat of the condensate. The base-line scenario of the SSC-CPA under the proposed PoA is steam production without the collection of the condensate. The additionality of the PoA as a whole can be proved by the existence of the below shown barriers.

Investment Barrier

- In TEDA, the condensate collection pipe between the local heat generation plant and the steam generator is hardly being constructed, and even if the pipe is being laid, most of them need to be repaired or be renewed because of the corrosion. Also, many of the steam consumers and local heat generation plant have no experience on collection of the condensate, so there is need to install new equipment for collection and utilization of the condensate. To implement this measure, additional investment is needed. The above mentioned TEDA Management Committee Ordinance No. 119 shall be able to ease this investment barrier.
- To form the condensate collection system in TEDA, there is need to balance the conflicting interest among the generator/distributor/consumer. The only stakeholder, who receives the economic merit from the energy savings upon realization of the condensate collection, is the steam generators which have the boiler. Therefore, there is need of a system to give appropriate energy saving benefits to the steam distributors (Manager of the condensate collection pipe) and the steam consumer (factory/office buildings) upon formation of the condensate collection system.

Technological Barrier

- Although the TEDA has 20 years history as an industrial district, most of the local heat generation plant, steam supply companies and the steam consuming facilities have no experience on the condensate collection. Formation of the condensate collection system between these entities needs not only the installation of the above mentioned facilities, but employment of technicians who have the operation and maintenance technology or training of the employees. Unlike Japan, there are no systems in China such as designation of energy manager of large energy consumption facilities or qualification systems, nor there are educational institutions where the factory employees can obtain knowledge or be trained about the collection or management of the condensate collection. Therefore, all of the generators/distributors/consumers can only obtain the new technology or level up using their own expenses and information resources, and this bears much burden on them.
- If there is contamination into the condensate and the water quality of the boiler water deteriorates, many unwelcome effects such as scale interference, corrosion interference or carry-over interference to the boiler itself may rise. These interferences not only decreases the thermal efficiency of the boiler, but it would cause blockage or damage to the generating tube or pipes, and even it might cause burst accidents of the boiler.

Other Barriers

- In TEDA, the generators, distributors and consumers of the steam are different, so information exchange or formation of cooperation relationship is extremely difficult. For the realization of stable condensate collection, there is a need to create a system which each of the three parties can perform their own duties (collection of the condensate and water quality management) and each party can earn economical benefit according to their duties, and also need to form a binding system which shall secure their duties including introduction of .penalty. Also, when any malfunction occurs, the three parties need to work together quickly, so information exchange is a must. However, up until now there was no cooperation conducted between the three parties, and the information exchange practically hasn't been done at all. Also, there are cases where the local heat generation plant and the steam consumer have conflict on the rights of the condensate. Considering that this kind of situation has continued for more than 20 years,

it is almost impossible for the steam generator, distributor and the consumer to voluntarily form cooperative relationship and realize condensate collection, thus formation of the condensate collection system is extremely difficult unless there is assistance and cooperation from outside.

As there are aforementioned barriers, the condensate collection system is hardly possible without the existence of the proposed PoA. Therefore, the proposed PoA has additionality.

A.4.4. Operational, management and monitoring plan for the programme of activities (PoA):

A.4.4.1. Operational and management plan:

>> Description of the operational and management arrangements established by the coordinating/managing entity for the implementation of the PoA, including:

(i) A record keeping system for each CPA under the PoA,
(ii) A system/procedure to avoid double accounting e.g. to avoid the case of including a new CPA that has been already registered either as a CDM project activity or as a CPA of another PoA,
(iii) The SSC-CPA included in the PoA is not a de-bundled component of another CDM programme activity (CPA) or CDM project activity.
(iv) The provisions to ensure that those operating the CPA are aware of and have agreed that their activity is being subscribed to the PoA;

The management of the CPA based on the proposed PoA shall be wholly conducted by the TEDA Environmental management which is the coordinating/managing entity, with the assistance from the TEDA Government. The registration of the SSC-CPA by the TEDA Environmental Management to the proposed PoA is conducted through the following procedure:

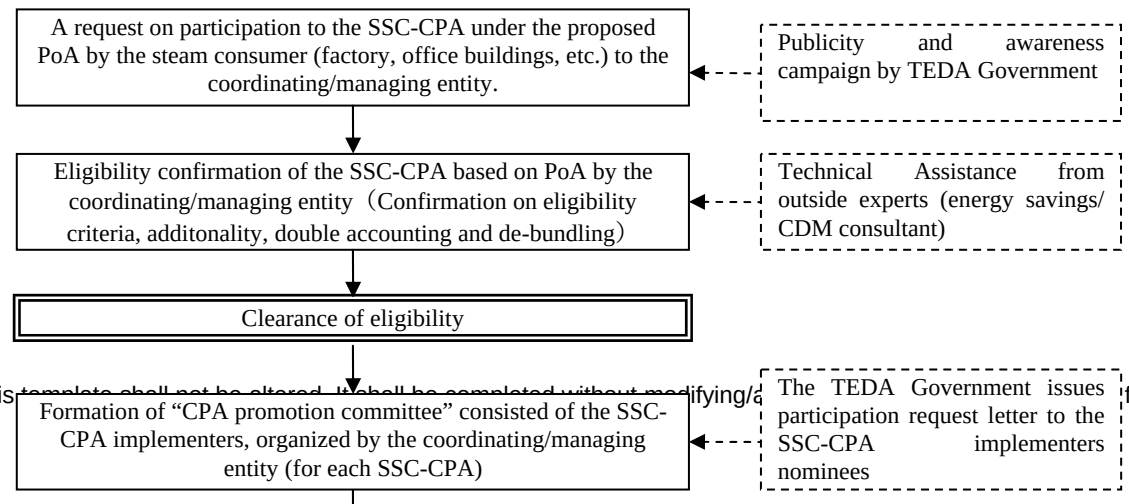

Fig CPA registration procedure based on the proposed PoA

After the coordinating/managing entity had received the request to participate in the CPA based on the proposed PoA, the coordinating/managing entity will firstly confirm of the items shown on the table below, and screen whether the submitted condensate collection project is appropriate as SSC-CPA under the proposed PoA. From this procedure, occurrence of double accounting and de-bundling can be avoided, and also eligibility criteria and addionality can be confirmed.

Table Checklist on the eligibility of the CPA based on the proposed PoA

Type	Contents	Confirmation items
Eligibility Criteria	Part or whole of the condensate collected by the CPA is used as boiler feed water at the local heat generation plant.	・ The present condensate treatment method and the utilization method to the SSC-CPA implementers ・ The condensate collection plan which the SSC-CPA implementers expect. ・ The technological assessment of the

Type	Contents	Confirmation items
		possibility of realization of the condensate collection plan which the SSC-CPA implementers expect (Utilizing outside experts)
	The efficiency of the boiler shall increase from the utilization of condensate waste heat.	• The condensate collection plan which the SSC-CPA implementers expect • The technological assessment of the possibility of realization of the condensate collection plan which the SSC-CPA implementers expect (Utilizing outside experts)
	The steam generators, distributors, and the consumers implementing the CPA have all of their facilities inside the TEDA area.	• Confirmation of the address of the facilities implementing the SSC-CPA • (If necessary) visit the actual facility and confirm the place.
Additionality	Refer to E.5.2	Refer to E.5.2
Occurrence of double accounting	If it is registered as CDM project activity	• Confirmation of whether or not the SSC-CPA implementers are participating in CPA based on other PoA or in other CDM. • Confirmation at UNFCCC CDM Website
	If it is registered as a CPA of another PoA	
Occurrence of de-bundling	if there is already an activity, which: a. Has the same activity implementer as the proposed small scale CPA or has a coordinating or managing entity, which also manages a large scale PoA of the same sectoral scope, and; b. The boundary is within 1 km of the boundary of the proposed small-scale CPA, at the closest point.	• Confirmation of whether or not the SSC-CPA implementers are participating in CPA based on other PoA or in other CDM. • Confirmation at UNFCCC CDM Website

For the contents of the monitoring on the amount of emission reduction, it shall be mentioned clearly in the "CPA implementing agreement", and the SSC-CPA implementers will in accordance with the regulations mentioned measure and record in appropriate frequency, and shall maintain, manage and calibrate the instrument. The monitoring data shall be submitted monthly to the coordinating/managing entity, and the contents shall be confirmed.

Through this procedure, the eligibility of the submitted condensate collection project as a CPA based on the proposed PoA shall be confirmed beforehand, and the collection of the data necessary for registration/validation/authentication shall be guaranteed.

A.4.4.2. Monitoring plan:

>> The following information shall be provided here:

(i) Description of the proposed statistically sound sampling method/procedure to be used by DOEs for verification of the amount of reductions of anthropogenic emissions by sources or removals by sinks of greenhouse gases achieved by CPAs under the PoA.

(ii) In case the coordinating/managing entity opts for a verification method that does not use sampling but verifies each CPA (whether in groups or not, with different or identical verification periods) a transparent system is to be defined and described that ensures that no double accounting occurs and that the status of verification can be determined anytime for each CPA;

The target area of the proposed PoA is the whole area of TEDA, and the proposed PoA is aimed to formulate the condensate collection system between the local heat generation plant and the steam consumers (factory, office buildings, etc.). Each of the steam consumers participating in the CPA have different factors which have effect on the amount of heat collected, such like the application of the steam, the amount of steam consumed, the seasonal variation of the heat consumption, the necessity of water treatment before returning the condensate and the distance from the local heat generation plant. Also, for the local heat generation plant, the supplied steam conditions or the boiler efficiency differs from each other. As such, verification through sampling would not be appropriate since the energy saving effect would be different according to each project. Therefore, the verification of the CPA under the proposed PoA shall be done for each CPA.

The verification of the CPA under the proposed PoA shall be conducted annually on a set time of year, for all of the CPA which has been operated for more than 6months. Since the collection, storage and verification of the monitoring data, the coordinating/managing entity shall wholly be in charge, double accounting shall be avoided. Also, the record of the verification of each CPA shall be wholly managed by the coordinating/managing entity.

For the proposed PoA, monitoring method defined in the applied methodology ”II. B. Supply side energy efficiency improvements – generation”, shown below.

6. Energy savings shall be measured after implementation of the efficiency measures, by calculating the energy content of the fuel used by the generating unit and the energy content of the electricity or steam produced by the unit. Thus both fuel use and output need to be metered.

7. A standard emission coefficient for the fuel used by the generating unit is also needed. IPCC default values for emission coefficients may be used. In the case of coal, the emission coefficient shall be based on test results for samples of the coal purchased if such tests are part of the normal practice for coal purchases.

8. In case the project activity involves the replacement of equipment, and the leakage effect of the use of the replaced equipment in another activity is neglected, because the replaced equipment is scrapped, an independent monitoring of scrapping of replaced equipment needs to be implemented. The monitoring should include a check if the number of project activity equipment distributed by the project and the number of scrapped equipment correspond with each other. For this purpose scrapped equipment should be stored until such correspondence has been checked. The scrapping of replaced equipment should be documented and independently verified.

Concerning the above 6, the baseline boiler efficiency shall be calculated based on the past measurements before the implementation of the SSC-CPA project under the proposed PoA, and afterwards the local heat generation plant shall measure the amount of collection of the condensate and its specific enthalpy together with the specific enthalpy of the boiler makeup water, to calculate the amount of energy saving. (See E.6.1 for detail)

Concerning the above 7, the sentence ”In the case of coal, the emission coefficient will be based on test results for samples of the coal purchased if such tests are part of the normal practice for coal purchases.” shall be applied. Coal is used but if this kind of measurement is not practised, or if fuel other than coal is used, the emission coefficient given in the latest “China Energy Statistical Yearbook” shall be applied.

Concerning the above 8, if the SSC-CPA is going to renew an equipment which consumes energy, the SSC-CPA implementer shall record the specification, serial number and the renewal date of the equipment which shall be discarded, and until the coordinating/managing entity finishes the verification by an on-site inspection, the implementer shall be obliged in accordance with the “CPA implementation agreement” not to discard the old equipment. The coordinating/managing entity shall keep the verification record.

A.4.5. Public funding of the programme of activities (PoA):

The proposed PoA shall not utilize public fund from the Annex I Party.

SECTION B. Duration of the programme of activities (PoA)

B.1. Starting date of the programme of activities (PoA):

01/06/2008 or date of registration, whichever occurs later

B.2. Length of the programme of activities (PoA):

28 years

SECTION C. Environmental Analysis

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C.1. Please indicate the level at which environmental analysis as per requirements of the CDM modalities and procedures is undertaken. Justify the choice of level at which the environmental analysis is undertaken:

Environmental Analysis for the proposed PoA will be done at PoA level. Because the SSC-CPA under the proposed PoA shall be conducted using common technology within the industrial or commercial district in TEDA, the environmental analysis at PoA level can be applied.

C.2. Documentation on the analysis of the environmental impacts, including transboundary impacts:

Upon the formation of the condensate collection system in the SSC-CPA under the proposed PoA, there are possibilities that the below shown equipments shall be constructed or installed.

- Steam generator: Condensate filter, condensate collection pipe inside the premises
- Steam distributor: Condensate collection line between the steam consumer and the steam generator
- Steam consumer: Condensate tank, condensate collection pipe inside the premises, condensate returning pump

Of these, the condensate collection pipe and condensate tank is constructed within the industrial or commercial districts inside TEDA, and because there is no need for engines for the power, the environmental impact shall be negligible. For the condensate filter and condensate returning pump, there is a possibility of noise pollution, but because these shall be set inside the premises and measures shall be taken to keep the Chinese standard, the impacts to the surrounding area shall be negligible.

Thus, the possibility that the implementation of PoA will give severe environmental impact to the TEDA area and the surroundings is small.

C.3. Please state whether in accordance with the host Party laws/regulations, an environmental impact assessment is required for a typical CPA, included in the programme of activities (PoA),:

Both the Chinese Government which is the host Party and the Tianjin City does not require EIA concerning the formation of the condensate collection system which the proposed PoA is promoting. Also upon formation of a typical condensate collection system, there are possibility of construction of facilities mentioned in C.2., but the laws or regulations of both the Chinese Government and the Tianjin City does not require EIA for a construction of such a system. The SSC-CPA under the proposed PoA is planned to comply with the environmental laws of both the Chinese Government and Tianjin City, such as noise pollution. As such, severe environmental impact from the implementation of the SSC-CPA shall not happen.

SECTION D. Stakeholders' comments

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D.1. Please indicate the level at which local stakeholder comments are invited. Justify the choice:

Note: If local stakeholder comments are invited at the PoA level, include information on how comments by local stakeholders were invited, a summary of the comments received and how due account was taken of any comments received, as applicable.

Local stakeholder consultation for the proposed PoA will be done at PoA level. The reasons that comments from the local stakeholders is possible at PoA level is that a) Because the CPA based on the proposed PoA is conducted in the industrial and commercial districts within TEDA, basically there are no local residents who will receive effects from the implementation of the SSC-CPA, and b) SSC-CPA is implemented using common technology.

D.2. Brief description how comments by local stakeholders have been invited and compiled:

The local stakeholders concerning the proposed PoA is the TEDA Government, the local heat generation plant, steam distributing company, steam consumer and the residents, schools, hospitals etc. who lives in the surrounding district of TEDA. Later on with the progress of the PoA, it is planned that the comments from the local stakeholders shall be collected at appropriate time.

D.3. Summary of the comments received:

Later on with the progress of the PoA, it is planned that the comments from the local stakeholders shall be collected at appropriate time.

D.4. Report on how due account was taken of any comments received:

Later on with the progress of PoA, collection of the comments from the local stakeholders shall be done in an appropriate time, and the collected comments shall be reflected in the contents of the proposed PoA.

SECTION E. Application of a baseline and monitoring methodology

This section shall demonstrate the application of the baseline and monitoring methodology to a typical SSC-CPA. The information defines the PoA specific elements that shall be included in preparing the PoA specific form used to define and include a SSC-CPA in the proposed PoA (PoA specific CDM-SSC-CPA-DD).

E.1. Title and reference of the approved SSC baseline and monitoring methodology applied to a SSC-CPA included in the PoA:

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NOTE: The approved SSC baseline and monitoring methodology should be approved for use in a PoA by the Board.

The approved methodology applied for the SSC-CPA under the proposed PoA is ”AMS II. B. Supply side energy efficiency improvements – generation (Version 09)”. This methodology can be obtained in the below UNFCCC CDM website.

http://cdm.unfccc.int/UserManagement/FileStorage/CDMWF_AM_JB7CGXF4MNOMHZ92JMQF1XL1HHHKU2

E.2. Justification of the choice of the methodology and why it is applicable to a SSC-CPA:

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NOTE: In the case of CPAs which individually do not exceed the SSC threshold, SSC methodologies may be used once they have first been reviewed and, as needed, revised to account for leakage in the context of a SSC-CPA.

From the below reasons, it can be proved that the SSC-CPA under the proposed PoA can apply ”AMS II. B. Supply side energy efficiency improvements – generation (Version 09)”.

- This category comprises technologies or measures to improve the efficiency of fossil fuel generating units that supply an electricity or thermal system by reducing energy or fuel consumption by up to the equivalent of 60 GWhe per year: The SSC-CPA under the proposed PoA is made up of a system that is to return the condensate from the steam consumer to the local heat generation plant. By this, hot condensate can be used as a boiler feed water, and thus improve the boiler efficiency, which, shall reduce the consumption of boiler fuel (e.g. coal, heavy oil, natural gas, etc.) .
- The technologies or measures may be applied to existing stations or be part of a new facility: The condensate collection system by the SSC-CPA shall be implemented at the exiting or new boiler.
- A total saving of 60 GWh_e is equivalent to maximal saving of 180 GWh_{th} in the fuel input to the generation unit: The energy consumption reduction amount which is realized by each SSC-CPA under the proposed PoA, is approx. ○○ GWh_{th} at maximum, which is below 180 GWh_{th}. This can be proved by each CDM-SSC-CPA-DD.

E.3. Description of the sources and gases included in the SSC-CPA boundary

According to the approved methodology "AMS II. B. Supply side energy efficiency improvements – generation (Version 09)" which is applied for the SSC-CPA under the proposed PoA, it stipulates that "The project boundary is the physical, geographical site of the fossil fuel fired power station unit affected by the efficiency measures." Therefore, the boundary of the SSC-CPA under the proposed PoA includes the boiler owned by the local heat generation plant situated in the TEDA area, condensate collection/returning equipments at the steam consuming facilities, and the condensate collection line connecting the local heat generation plant and the steam consuming facility. Also, the GHG which reduced by the SSC-CPA under the proposed PoA is CO2 emitted from the fossil fuels.

The figure below shows the conceptual diagram of the project boundary of the typical SSC-CPA under the proposed PoA.

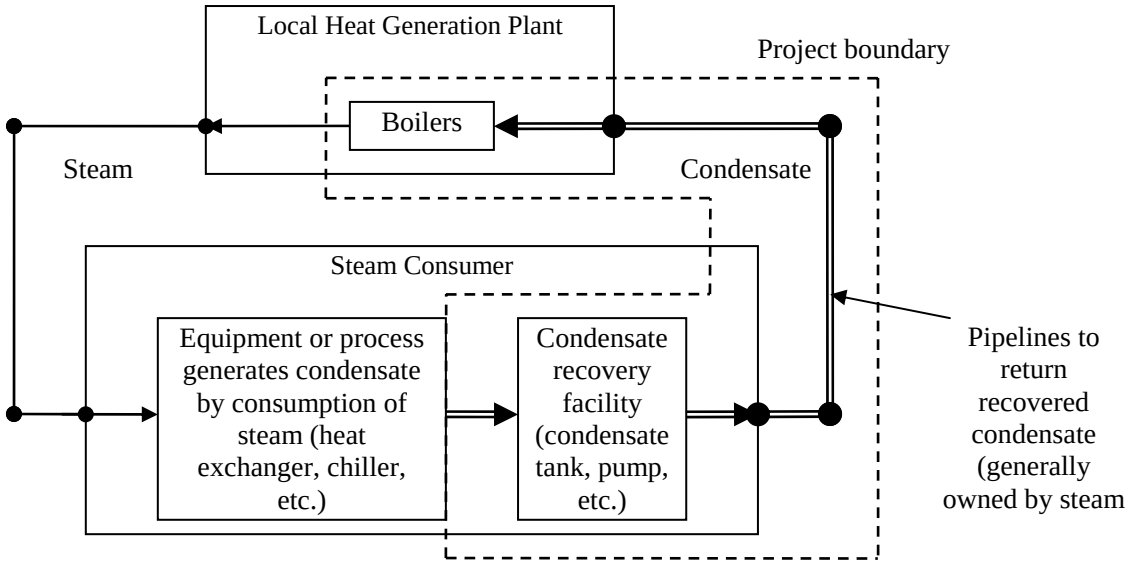

Figure Conceptual diagram of typical SSC-CPA under the proposed PoA

E.4. Description of how the baseline scenario is identified and description of the identified baseline scenario:

The approved methodology applied for this SSC-CPA under the proposed PoA "AMS II. B. Supply side energy efficiency improvements – generation (Version 09)" is applied to the projects that are aimed to improve the efficiency of the electricity/steam generator which uses fossil fuel. Also the energy baseline is stipulated as technical losses of energy within the boundary.

The SSC-CPA under the proposed PoA is aimed to reduce the fuel consumption by improving the boiler efficiency through using the hot condensate as a boiler feed water by forming a recovery system of the condensate from the steam consumer to the local heat generating plant. Therefore, the baseline scenario of the SSC-CPA under the proposed PoA, should be a scenario which is maintaining the existing system and generating the steam not using the condensate as a boiler feed water of the heat generating plant.

E.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the SSC-CPA being included as registered PoA (assessment and demonstration of additionality of SSC-CPA): >>

E.5.1. Assessment and demonstration of additionality for a typical SSC-CPA:

>> Here the PPs shall demonstrate, using the procedure provided in the baseline and monitoring methodology applied additionality of a typical CPA.

The additionality of a typical SSC-CPA under the proposed PoA can be proved by the existence of the below shown barriers.

Investment Barrier

IB1：In TEDA, the condensate collection line is merely being constructed, and even if there exists, many of them needs repair or renewal because of corrosion.

IB2：To implement the condensate collection, there is need for the steam generator/distributor/consumer to install new equipment for collection and utilization of the condensate. To implement this measure, additional investment is needed. The TEDA Management Committee Ordinance No. 119 shall be able to ease this investment barrier.

IB3：In TEDA, the management/responsible entity of the condensate collecting line and the management/ responsible entity of the local heat generating plant is often different. In this case, as the management entity of the condensate collection line cannot receive any economic merit (i.e. reduction of fuel cost from the condensate collection) , there is no economic incentive driving the concerned entity to improve and construct or improve the condensate collection line.

IB4：Like the IB3, the steam consumer also does not receive any economic merit from the implementation of condensate collection, there is no economic incentive driving the concerned entity to equip the condensate collection facility.

Technological Barrier

TB1：To effectively utilize the heat which the condensate have without any loss, the steam generator/distributor/consumer is needed to continuously conduct measurements for water quality management. However, almost all of the facilities do not have experience of condensate collection, to form the new condensate collection system, it needs not only introduction of new technology and facility, but new employment or training of the staff who have the operation and management technology.

TB2：If there is contamination into the condensate and the water quality of the boiler water deteriorates, many unwelcome effects such as scale interference, corrosion interference or carry-over interference to the boiler itself may rise. These interferences not only decreases the thermal efficiency of the boiler, but it may cause blockage or damage to the generating tube or pipes, and even it might cause burst accidents of the boiler. Therefore, for the steam generator the technological risk of using treated raw water as a boiler feed water is lower than collecting and using the condensate. Such a low risk option will bring about the los of heat energy of the condensate, and result in high CO2 emission.

Other Barrier

OB1：The big barrier confronting the formation of the condensate collection system in TEDA, is a organizational barrier caused by the fact that the generating, distributing and consuming entity of the steam is different. To realize the condensate collection, there is a need to build a cooperation framework which determines the allocation of obligations and benefits. Also, at the time of emergency, there is a need to cooperate with each other, information exchange system is needed. However, as yet there has been no exchange of information on the condensate collection. There also seems to be conflicts between the steam generator and the consumer on the ownership of the condensate. Considering that this kind of situation has continued for more than 20 years, it is almost impossible for the steam generator, distributor and the consumer to voluntarily form cooperative relationship and realize condensate collection, thus formation of the condensate collection system is extremely difficult unless there is assistance and cooperation from outside.

E.5.2. Key criteria and data for assessing additionality of a SSC-CPA:

>> Here the PPs shall provide the key criteria for assessing additionality of a CPA when proposed to be included in the registered PoA. The criteria shall be based on additionality assessment undertaken in E.5.1 above. The project participants shall justify the choice of criteria based on analysis in above section. It shall be demonstrated how these criteria would be applied to assess the additionality of a typical CPA at the time of inclusion.

NOTE: Information provided here shall be incorporated into the PoA specific CDM-SSC-CPA-DD that shall be included in documentation submitted by project participants at registration of PoA.

To assess the additionality of the SSC-CPA under the proposed PoA, there is a need to confirm for each SSC-CPA whether or not the barriers which block the implementation mentioned in E.5.1.exists. The table below shows the criteria of whether or not the barrier exists and the information resources for the criteria. If through the assessment of the Key Criteria shown in this table any of the barrier is confirmed to exist, that SSC－PoA shall be confirmed as having additionality

Table List of criteria to assess the additionality of the SSC-CPA to be registered in the proposed PoA

Barrier No.	Key criteria		Existence of barrier		Main information/data to be the proof
IB 1	IB1-KC1	There is a condensate collection line between the local heat generation plant and the steam consumer participating in the SSC-CPA	Yes	To IB1-KC2	• Condensate collection line diagram • Record of the construction of the condensate collection line by the steam distributor/ steam generator • Proof by the SSC-CPA implementers
			No	Barrier exists	
	IB1-KC2	There are problems such as corrosion in the condensate collection line laid between the local heat generation plant and the steam consumer, and it is unusable.	Yes	Barrier exists	• Survey record of the condensate collection line. • Proof by the SSC-CPA implementers
			No	No barrier	
IB2	IB2-KC1	There is a need to introduce additional facility in order to form the condensate collection system between the local heat generation plant and the steam consumer which is participating in the SSC-CPA	Yes	To IB2-KC2	• List of facilities which the SSC-CPA participants' own • The condensate collection plan which the proponent have made.
			No	No Barrier	
	IB2-KC2	The IRR of the investment project for the condensate collection system formation (Based on the facility investment cost of all of the facilities which the steam generator/distributor/ consumer installs, together with the energy cost reduction from the condensate collection) is over the hurdle rate ※If any subsidy such as TEDA committee decree No. 119 is decided, subsidy cost should be subtracted from the investment cost.	Yes	No Barrier	• IRR • The calculation basis of IRR. Specifically, it should include the following. - Initial investment cost (construction cost) - Running cost - Unit cost of fuel - Fuel reduction amount - Type of applied tax (corporate tax, VAT etc.) and the tax rate - Project duration • Results of the sensibility analysis of the main parameters • Results of the comparison with the hurdle rate (IRR of heat supply showing in the latest "economic evaluation method and parameter for construction project".
			No	Barrier exists	
IB3	IB3-	The managing entity of the local heat generation	Yes	No Barrier	• Materials showing the business description of the SSC-

Barrier No.	Key criteria		Existence of barrier		Main information/data to be the proof
	KC1	plant and the condensate collection line participating in the SSC-CPA is the same.	No	To IB3-KC2	CPA implementers • Proof by the SSC-CPA implementers
	IB3-KC2	In case when the managing entity of the condensate collection line participating in the SSC-CPA make actions to collect the condensate, there exists an enforceable agreement which stipulates that the economic benefits that the management entity of the local heat generation plant obtained are distributed, and it is properly implemented.	Yes No	No Barrier Barrier exists	• The agreement between management entity of the local heat generation plant and the condensate collection line who participates in SSC-CPA • Payment record from the local heat generation plant and the condensate collection line (financial statement)
IB4	IB4-KC1	The local heat generation plant and the steam consumer which participates in the SSC-CPA is the same.	Yes No	No barrier To IB4-KC2	• Materials showing the business description of the SSC-CPA implementers • Proof by the SSC-CPA implementers
	IB4-KC2	In case when the managing entity of the condensate collection line participating in the SSC-CPA make actions to collect the condensate, there exists an enforceable agreement which stipulates that the economic benefits that the management entity of the local heat generation plant obtained are distributed, and it is properly implemented.	Yes No	No barrier Barrier exists	• The agreement between management entity of the local heat generation plant and the condensate collection line who participates in SSC-CPA • Payment record from the local heat generation plant and the condensate collection line (financial statement)
TB1	TB1-KC1	The managing entity of the local heat generation plant which is participating in the SSC-CPA has experience on implementation of collection of condensate for the purpose of water supply to the boiler, and has technician who has technological knowledge and experience on condensate collection.	Yes No	To TB1-KC2 Barrier exists	• List of condensate collection related facilities which the managing entity of the local heat generation plant that is participating in SSC-CPA owns • The performance of the condensate collection • List of technicians who have experience and knowledge on the condensate collection. • Proof by the SSC-CPA implementers
	TB1-KC2	The managing entity of the condensate collection line which is participating in the SSC-CPA has experience on implementation of collection of condensate for the purpose of water supply to the boiler, and has technician who has technological knowledge and experience on condensate collection.	Yes No	To TB1-KC3 Barrier exists	• List of condensate collection related facilities which the managing entity of the condensate collection line that is participating in SSC-CPA owns • The performance of the condensate collection • List of technicians who have experience and knowledge on the condensate collection.

Barrier No.	Key criteria		Existence of barrier		Main information/data to be the proof
					• Proof by the SSC-CPA implementers
	TB1-KC3	The managing entity of the steam consumer which is participating in the SSC-CPA has experience on implementation of collection of condensate for the purpose of water supply to the boiler, and has technician who has technological knowledge and experience on condensate collection.	Yes	No Barrier	• List of condensate collection related facilities which the managing entity of the steam consumer that is participating in SSC-CPA owns • The performance of the condensate collection • List of technicians who have experience and knowledge on the condensate collection. • Proof by the SSC-CPA implementers
			No	Barrier exists	
TB2	TB2-KC1	The steam consumer, who is going to participate in SSC-CPA, is taking technical measures to manage the water quality of the condensate (such as prevention of contact with air, prevention of mixture with other water, etc.)	Yes	To TB2-KC2	• List of condensate collection related facilities which the managing entity of the steam consumer that is participating in SSC-CPA owns • Flow diagram of condensate collection system which the steam consumer implements. • List of the water quality monitoring instrument which the steam consumer is using, and the summary of the monitoring system • Process flow of the treatment upon the detection of water quality default of the condensate • Agreement between the steam consumer and the local heat generation plant who is participating in the SSC-CPA concerning the water quality management of the condensate • Proof by the SSC-CPA implementers
			No	Barrier exists	
	TB2-KC2	There is a monitoring system to detect abnormal water quality of the condensate at the steam consumer.	Yes	To TB2-KC3	
			No	Barrier exists	
	TB2-KC3	In the case that the steam consumer detects any default in the water quality of the condensate, there is a system such as automatic blowing, to prevent the contaminated water to return the condensate to the local heat generation plant.	Yes	To TB2-KC4	
			No	Barrier exists	
	TB2-KC4	In the case that the steam consumer participating in the SSC-CPA stops the returning of the condensate because of default, and in the case that the entity returned contaminated water, there exists an enforceable agreement which stipulates the compensation from the steam consumer to the local heat generation plant, and have been properly implemented.	Yes	No barrier	
			No	Barrier exists	
OB1	OB1-	There exists an enforceable agreement to insure the	Yes	To OB1-KC2	• Agreement between the managing entity of the local

Barrier No.	Key criteria		Existence of barrier		Main information/data to be the proof
	KC1	implementation of the condensate collection between the managing entity of the local heat generation plant and the managing entity of the condensate collection line, and it is properly being implemented.	No	Barrier exists	heat generation plant and the managing entity of the condensate collection line about the implementation of the condensate collection • Agreement between the managing entity of the local heat generation plant and the managing entity of the steam consumer about the implementation of the condensate collection • Proof by the SSC-CPA implementers
	OB1-KC2	There exists an enforceable agreement to insure the implementation of the condensate collection between the managing entity of the local heat generation plant and the managing entity of the steam consumer, and it is properly being implemented.	Yes	No Barrier	
			No	Barrier exists	

E.6. Estimation of Emission reductions of a CPA:

E.6.1. Explanation of methodological choices, provided in the approved baseline and monitoring methodology applied, selected for a typical SSC-CPA:

The approved methodology applied on a typical SSC-PoA under the proposed PoA, is "AMS II. B. Supply side energy efficiency improvements – generation (Version 09)". According to this, the baseline is defined as follows:

3. The energy baseline is the technical losses of energy within the project boundary. In the case of retrofit measures, the energy baseline is calculated as the monitored performance of the existing generating unit. In the case of new facilities, the energy baseline is calculated using a standard for the equipment that would otherwise have been installed selected in accordance with relevant paragraphs of 'general guidance'.

4. The emissions baseline is the energy baseline multiplied by an emission coefficient for the fuel used by the generating unit. IPCC default values for emission coefficients may be used.

The baseline scenario of the CPA based on the proposed PoA is: to generate the heat without the beneficial use of the condensate heat. The energy baseline of the SSC-CPA under the proposed PoA is the technical energy loss which occurs if the condensate is not collected, which in the case of projects on existing facilities it would equal to the actually measured boiler efficiency and in the case of new facilities it would equal to the standard Chinese boiler efficiency. (Both are boiler efficiency when the condensate is not collected.) Also, the emissions baseline would equal to existing/Chinese standard boiler efficiency multiplied by the emission coefficients of the fuel.

On the proposed PoA, as there are possibilities of more than one SSC-CPA under the proposed PoA return the condensate to sole boiler, the reduction effect of the energy loss of the condensate collection at each SSC-CPA cannot be quantified only from the change of the boiler efficiency. Thus, for the SSC-CPA under the proposed PoA, instead of energy baseline (boiler efficiency before the implementation of the project), technical energy loss (the specific enthalpy of the condensate to be collected and utilized) will be actually measured, and based on the results the emissions baseline shall be calculated. Compared with the methodology using the energy baseline based on boiler efficiency, this method is better in terms of serviceability, technical reliability and easiness of monitoring.

- The specific enthalpy (estimated from the steam table based on the actual measurement data of the water temperature) of the condensate is the energy loss of the baseline itself.
- The temperature of the condensate can be directly measured. On the other hand, the boiler efficiency must be calculated from more than one parameter (fuel consumption and calorific value of the boiler, along with the generation amount and calorific power of the steam), thus have a possibility of wide range of error.
- Upon formation of the condensate collection system, because there is a plan to install water quality monitoring system to manage the water quality of the condensate, the measurement shall be easy. As the measurement shall be conducted continuously, the energy collection amount can be measured precisely.

Based on this methodology, for the calculation of the energy baseline of the SSC-CPA under the proposed PoA, parameters/data as follows shall be used.

- Technical energy loss: The specific enthalpy and the mass of the condensate used as boiler feed water, and the specific enthalpy of the supplementary water.
- The boiler efficiency: Steam generation amount, the specific enthalpy of steam, specific enthalpy of the supplementary water, fuel consumption amount and net calorific value of the fuel.

On the other hand, for the calculation of the emissions baseline, emission coefficient of the fuel is necessary, but for the SSC-CPA under the proposed PoA the data in latest version of *China Energy Statistical Yearbook* at the time of submission of the CDM-SSC-CPA-PDD to the DOE for validation shall be applied.

E.6.2. Equations, including fixed parametric values, to be used for calculation of emission reductions of a SSC-CPA:

The emissions reduction amount of the SSC-CPA under the proposed PoA shall be calculated based on the below formula.

$$ER_y = \frac{(h_{dr,y} - h_{fw,y}) * Q_{dr,y}}{\eta_{BL}} * EF_{CO2,i}$$

Where:
ER_y: Total emissions reductions during the year y (tCO_2)
h_{dr}: Specific enthalpy of the condensate（TJ/t）
h_{fw}: Specific enthalpy of boiler feed water（TJ/t）
$Q_{dr,y}$: Mass of condensate collected（t/yr）
η_{BL}: Baseline boiler efficiency（%）
$EF_{CO2,i}$: CO_2 emission factor for fuel i（CO_2e /TJ）

η_{BL} is calculated by one of the following 4 methods.

(1) Determined from a set of newest attainable measured data taken over a one year before the improvement made by the project activities in the boiler efficiency. This method is applied when measurement data before the commencement of the project activity to calculate the boiler efficiency from is attainable. The equation below is used.

$$\eta_{BL} = \frac{\sum_j \eta_{j,y}}{j}$$

Where:
$\eta_{i,j}$: efficiency of boiler j whose feed water is the condensate collected in year y （%）. y is the year that is most recent of which the data can be attained prior to the commencement of the project.

j : number of boilers（unit）

$\eta_{i,j}$ is calculated with the equation below:

$$\eta_{j,y} = \frac{\mathrm{HG}_{j,y}(h_{st,j,y} - h_{fw,j,y})}{FC_{i,j,y} * NCV_{i,j,y}}$$

Where:
$HG_{j,y}$: Mass of steam generated from condensate collected in boiler j in year y（t/yr）
$h_{st,j,i}$: Specific enthalpy of steam generated in boiler j in year y.（TJ/t）
$h_{fw,j,i}$: Specific enthalpy of feed water fed into boiler j in year y.（TJ/t）
$FC_{i.j.y}$: Mass of fuel i consumed in boiler j in year y.（t/yr）
$NCV_{i,j,y}$: Net Calorific Value of fuel i used in boiler j in year y.（TJ/t）

(2) Maximum efficiency of a boiler with similar specification to the boiler of whose efficiency is improved by the project activity.

(3) Maximum efficiency of boilers with similar specification to the boiler of whose efficiency is improved by the project activity provided by more than 2 suppliers.

(4) Maximum 100%

E.6.3. Data and parameters that are to be reported in CDM-SSC-CPA-DD form:

(Copy this table for each data and parameter)

Data / Parameter:	$EF_{CO2,i}$
Data unit:	tC or tCO2 / TJ or GJ
Description:	Carbon or CO2 emission factor of fuel *i* in a mass or volume unit
Source of data used:	Emission factor based on test results for samples of the coal purchased or China Energy Statistical Yearbook
Value applied:	See CDM-SSC-CPA-PDDs
Justification of the choice of data or description of measurement methods and procedures actually applied :	1) In the case of coal, the emission coefficient shall be based on test results for samples of the coal purchased if such tests are part of the normal practice for coal purchases. 2) If 1) is inapplicable or unavailable, use the official statistical data (China Energy Statistical Yearbook)
Any comment:	Apply the data in latest version of *China Energy Statistical Yearbook* at the time of submission of the CDM-SSC-CPA-PDD to the DOE for validation

Data / Parameter:	η_{BL}
Data unit:	%
Description:	The baseline efficiency of the boiler
Source of data used:	This shall be determined by one of the following methods (1) Calculated value based on the past one year measurement data of the boiler of which the efficiency should be improved through the implementation of this project (2) The maximum value of the boiler efficiency measured on the boiler which is similar to the expected improved boiler by the implementation of this project

	(3) The maximum value of the boiler efficiency on the specification of the similar boiler given by more than two companies. (4) Maximum 100%
Value applied:	See CDM-SSC-CPA-PDDss
Justification of the choice of data or description of measurement methods and procedures actually applied :	
Any comment:	

Data / Parameter:	$HG_{j,y}$
Data unit:	Ton
Description:	The steam production amount of the boiler j which will use the condensate collected after the implementation of this project as the supply water at year y.
Source of data used:	The accumulated amount of the latest one year of the data before the project starts.
Value applied:	See CDM-SSC-CPA-PDDss
Justification of the choice of data or description of measurement methods and procedures actually applied :	The data measured directly by the flowmeter for the past one year.
Any comment:	

Data / Parameter:	$h_{st,j,i}$
Data unit:	TJ/t
Description:	The specifif enthalpy of the steam produced by the boiler j at year y
Source of data used:	Determined based on either the average value of the past measurements or the specification of the past measurements
Value applied:	See CDM-SSC-CPA-PDDs
Justification of the choice of data or description of measurement methods and procedures actually applied :	1) The specific enthalpy is obtained from the steam table based on the average temperature or pressure measured for the latest one year available before the implementation of the project 2) If the data described in 1) is unavailable, the specific enthalpy is obtained from the steam table based on the maximum pressure of the specification of the boiler.
Any comment:	

Data / Parameter:	$h_{fw,j,i}$
Data unit:	TJ/t
Description:	The specific enthalpy of the water of the boiler j used in year y.
Source of data used:	Determined from the past measured results
Value applied:	See CDM-SSC-CPA-PDDs
Justification of the choice of data or	The specific enthalpy is obtained from the steam table based on the average temperature of the latest available one-year data before the implementation of

description of measurement methods and procedures actually applied :	this project.
Any comment:	

Data / Parameter:	$FC_{i,j,y}$
Data unit:	Ton
Description:	The amount of fuel i of the boiler j consumed in year y.
Source of data used:	The total amount of the latest available year before the implementation of the project.
Value applied:	See CDM-SSC-CPA-PDDs
Justification of the choice of data or description of measurement methods and procedures actually applied :	Latest available one year value measured directly before the project implementation
Any comment:	Apply the data in latest version of *China Energy Statistical Yearbook* at the time of submission of the CDM-SSC-CPA-PDD to the DOE for validation

Data / Parameter:	$NCV_{i,j,y}$
Data unit:	TJ/t
Description:	Net calorific value of fuel i of the boiler j used in the year y.
Source of data used:	Past measured value or the value shown in the *China Energy Statistical Yearbook*
Value applied:	See CDM-SSC-CPA-PDDs
Justification of the choice of data or description of measurement methods and procedures actually applied :	1) Use the average measured value of the latest available data before the implementation of the project 2) If the data described in 1) is unavailable, apply the vale shown in \
Any comment:	Apply the data in latest version of *China Energy Statistical Yearbook* at the time of submission of the CDM-SSC-CPA-PDD to the DOE for validation

E.7. Application of the monitoring methodology and description of the monitoring plan:

D.7.1. Data and parameters to be monitored by each SSC-CPA:

(Copy this table for each data and parameter)

Data / Parameter:	h_{dr}
Data unit:	TJ/t
Description:	Specific enthalpy of the condensate
Source of data to be used:	Determined based on the temperature of condensate and a steam table

Value of data applied for the purpose of calculating expected emission reductions in section B.5	See CDM-SSC-CPA-PDDs
Monitoring frequency	Once a month
Description of measurement methods and procedures to be applied:	Measure the water temperature using the thermometer. The accuracy of the thermometer should meet the Chinese Standard.
QA/QC procedures to be applied:	The thermometer should be calibrated by method/frequency stipulated in the Chinese Standard.
Any comment:	

Data / Parameter:	h_{fw}
Data unit:	TJ/t
Description:	Specific enthalpy of the feed water
Source of data to be used:	Determined based on the temperature of condensate and steam table
Value of data applied for the purpose of calculating expected emission reductions in section B.5	See CDM-SSC-CPA-PDDs
Monitoring frequency	Once a month
Description of measurement methods and procedures to be applied:	Measure the water temperature using the thermometer. The accuracy of the thermometer should meet the Chinese Standard.
QA/QC procedures to be applied:	The thermometer should be calibrated by method/frequency stipulated in the Chinese Standard.
Any comment:	

Data / Parameter:	$Q_{dr,y}$
Data unit:	Ton
Description:	Amount of collection of the condensate
Source of data to be used:	Measured value using the integrating flowmeter
Value of data applied for the purpose of calculating expected emission reductions in section B.5	See CDM-SSC-CPA-PDDs
Monitoring frequency	Continuous/Once a month
Description of measurement methods and procedures to be applied:	Measured by an integrated flowmeter. The accuracy of the integrated thermometer should meet the Chinese standard.

QA/QC procedures to be applied:	The integrated flowmeter should be calibrated by the method/frequency stipulated in the Chinese Standard.
Any comment:	

Data / Parameter:	N_{pe}
Data unit:	Unit
Description:	Number of energy consuming equipments which is newly installed upon the implementation of the project
Source of data to be used:	Record of the SSC-CPA implementers
Value of data applied for the purpose of calculating expected emission reductions in section B.5	N/A
Monitoring frequency	Once every time when the energy consuming equipment is renewed by the project.
Description of measurement methods and procedures to be applied:	SSC-CPA implementers shall record the number of newly installed equipments, the specification, the serial number and the date of installation when the new equipment is installed.
QA/QC procedures to be applied:	Making the record by more than two persons and cross-checking the record.
Any comment:	The record shall be quickly submitted to the coordinating/managing entity and the coordinating/managing entity shall conduct an on-site inspection to confirm whether the Npe=Nse. Until the inspection finishes, the SSC-CPA implementers cannot discard the old equipment.

Data / Parameter:	N_{se}
Data unit:	Unit
Description:	Energy consuming equipments which is going to be discarded with the installation of a new one upon the implementation of this project
Source of data to be used:	SSC-CPA implementers
Value of data applied for the purpose of calculating expected emission reductions in section B.5	N/A
Monitoring frequency	Once every time the equipment is installed by the project
Description of measurement methods and procedures to be applied:	SSC-CPA implementers shall record the number of old equipments, the specification, the serial number and the date of installation when the new equipment is installed.
QA/QC procedures to be applied:	Making the record by more than two persons and cross-checking the record.
Any comment:	The record shall be quickly submitted to the coordinating/managing entity and the coordinating/managing entity shall conduct an on-site inspection to confirm whether the Npe=Nse. Until the inspection finishes, the SSC-CPA implementers

	cannot discard the old equipment.

E.7.2. Description of the monitoring plan for a SSC-CPA:

1. Monitoring structure

The monitoring of the proposed PoA shall be conduced by the steam generator/distributor/consumer under the supervision of the coordinating/managing entity. The following diagram shows the structure of the monitoring implementation and management of the CPA based on the proposed PoA

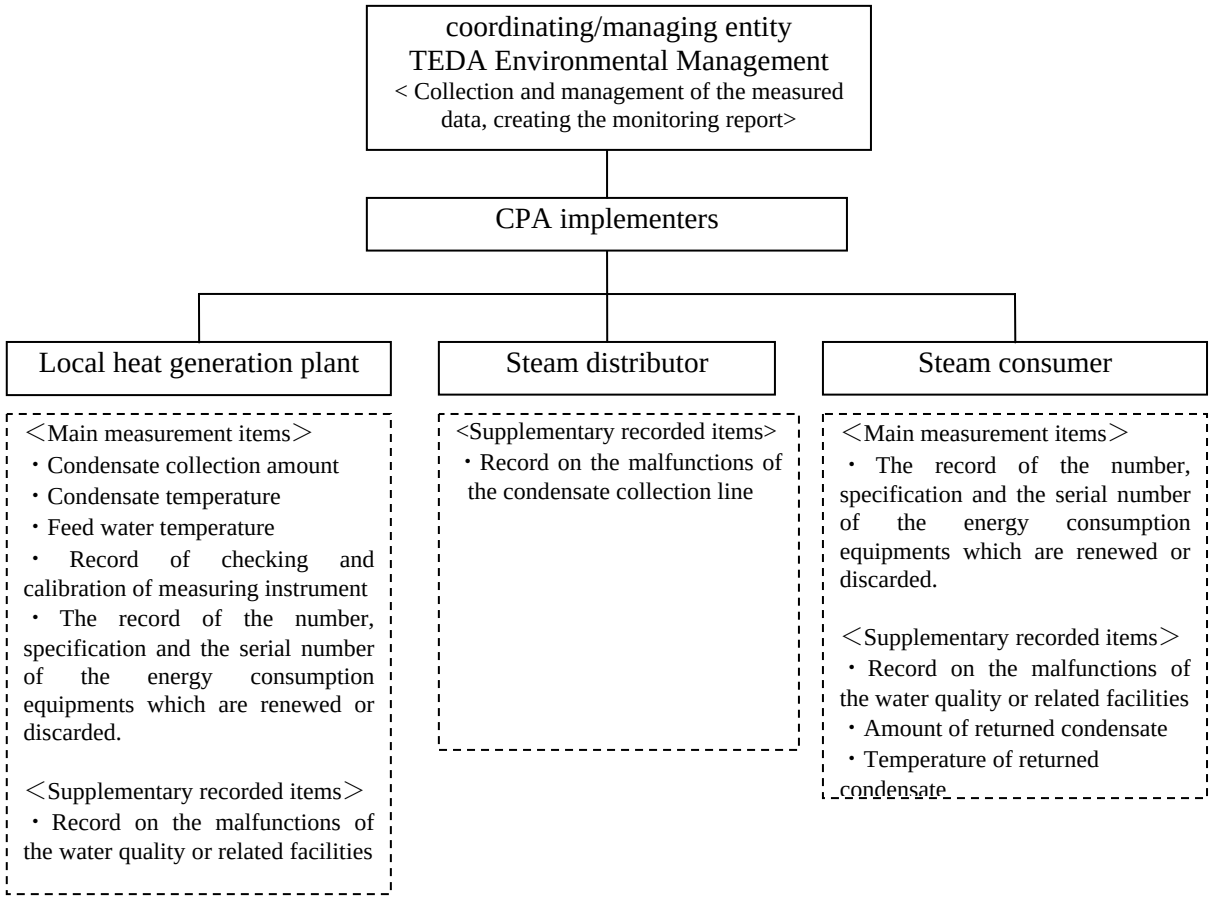

Fig Diagram of monitoring structure

2. Monitoring plan

To calculate the emission reduction amount by the SSC-CPA under the proposed PoA, it is necessary to obtain the baseline efficiency through the measurement of the specific enthalpy of the condensate, the specific enthalpy of the boiler feeder water of the boiler using the condensate, and the amount of condensate collection.

These measurements are conducted in the local heat generation plant. The specific enthalpy of the condensate and the feeder water shall be obtained from the steam table based on the annual average water temperature measured once a month by the thermometer. The temperature and the specific enthalpy shall be recorded in both paper and electronic data. The amount of condensate collection shall be measured

continuously by the integrated flowmeter set in the condensate collection line, and the monthly data shall be recorded on both paper and electronic data. These recorded data shall be reported monthly from the local heat generation plant to the TEDA Environmental Management.

Both for the thermometer to measure the water temperature and the integrated flowmeter to measure the condensate collection amount set at the local heat generation plant, the instruments that meet the Chinese standard shall be used, and both shall be calibrated applying the proper method and frequency. After the calibration, the local heat generation plant shall submit the copy of the record to the TEDA Environmental Management.

In addition to these data which shall be the calculation basis of the emission reduction amount, in cases when the energy consuming equipments are being renewed, leakage shall be monitored. The local heat generation plant and/or the steam consumer, upon the installation of the new equipment, shall record the number, specification and the serial number of the discarded equipment, and then the record shall be submitted to the coordinating/managing entity. The coordinating/managing entity will then conduct an on-the-site inspection. Until the confirmation through the on-the-site inspection finishes, the local heat generation plant and/or the steam consumer must not discard the equipment which is intended to be discarded.

Moreover, as a supplementary monitoring, the local heat generation plant, steam distributor and the steam consumer shall record the malfunction of the water quality and the equipments. The record shall also be reported monthly to the TEDA Environmental Management. Further, the steam consumer shall monthly measure the amount of returned condensate and its temperature, as an accuracy management and backup for the emission reduction amount calculation.

E.8 Date of completion of the application of the baseline study and monitoring methodology and the name of the responsible person(s)/entity(ies)

>>

Date of completion: 31/01/2008
Name of the responsible person(s)/entity

Ike, Tomohiko
Ogura, Akiko
E & E Solutions Inc.
Environment Division, GHG and Energy Solution Group

Hayashi, Takatsugu
Igari, Kunio
Energy Initiative Japan

Annex 1

CONTACT INFORMATION ON COORDINATING/MANAGING ENTITY and PARTICIPANTS IN THE PROGRAMME of ACTIVITIES

Organization:	
Street/P.O.Box:	
Building:	
City:	
State/Region:	
Postfix/ZIP:	
Country:	
Telephone:	
FAX:	
E-Mail:	
URL:	
Represented by:	
Title:	
Salutation:	
Last Name:	
Middle Name:	
First Name:	
Department:	
Mobile:	
Direct FAX:	
Direct tel:	
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Annex 2

INFORMATION REGARDING PUBLIC FUNDING

The proposed PoA shall not utilize the public funding from the Annex I Party.

Annex 3

BASELINE INFORMATION

The baseline information shall be given by the SSC-CPA.

Annex 4

MONITORING INFORMATION

For monitoring, refer to E.7.2.

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