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Energy Efficiency Promoting Program using Idling Stop Devices for Public Buses in Shandong , China

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CLEAN DEVELOPMENT MECHANISM SMALL-SCALE PROGRAM ACTIVITY DESIGN DOCUMENT FORM (CDM-SSC-CPA-DD) Version 01

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NOTE:

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

(ii) The coordinating/managing entity shall prepare a CDM Small Scale Programme Activity Design Document (CDM-SSC-CPA-DD)^{1.2} that is specified to the proposed PoA by using the provisions stated in the SSC PoA DD. At the time of requesting registration the SSC PoA DD must be accompanied by a CDM-SSC CPA-DD form that has been specified for the proposed SSC PoA, as well as by one completed CDM-SSC CPA-DD (using a real case). After the first CPA, every CPA that is added over time to the SSC PoA must submit a completed CDM-SSC CPA-DD.

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¹ The latest version of the template form CDM-CPA-DD is available on the UNFCCC CDM web site in the reference/document section.

² At the time of requesting validation/registration, the coordinating managing entity is required to submit a completed CDM-POA-DD, the PoA specific CDM-CPA-DD, as well as one of such CDM-CPA-DD completed (using a real case).



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SECTION A. General description of small scale CDM programme activity (CPA)

A.1. Title of the small-scale CPA:

- The title of the project activity

Idling Stop Device Introductions to the Buses of Jinan Public Transport Group Company in Jinan City, China (CPA-1)

- The current version number of the document

Version 1

- The date when the document was completed.

February 17, 2011

A.2. **Description of the small-scale CPA:**

The purpose of small-scale CPAs is to reduce GHG emissions from buses operating by Jinan Public Transport Group Company in Shandong Province, China. In the project activity, CPA implementers will install the post-fit type idling stop devices to in-use buses resulting in saving of fuel consumption while idling of the buses.

The baseline scenario of the project activity is the situation where, in the absence of the project activity, idling will be continued at stoplights or other situations without installing post-fit type idling stop device. On the other hand, the project scenario of the project activity is the situation where, idling stop will be conducted using idling stop device subject to rather long period stop at stoplights or other situations resulting in saving of fuel consumptions with consequent reduction in GHG emissions.

The emission of air atmosphere pollutant of NOx and PM are also reduced at the same time.

A.3. Entity/individual responsible for the small-scale CPA:

The entity responsible for the SSC-CPA is Jinan Public Transport Group Company (hereinafter JPTGC).

A.4. Technical description of the small-scale CPA:

A.4.1. Identification of the <u>small-scale CPA</u>:

A.4.1.1.Host Party:

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A.4.1.2. Geographic reference or other means of identification allowing the unique identification of the <u>small-scale CPA</u> (maximum one page):

The physical location of the proposed project is Jinan city of Shandon province covering roads where the buses installed with the idling stop device will be driven, bus terminal, intersections and bus stops etc.

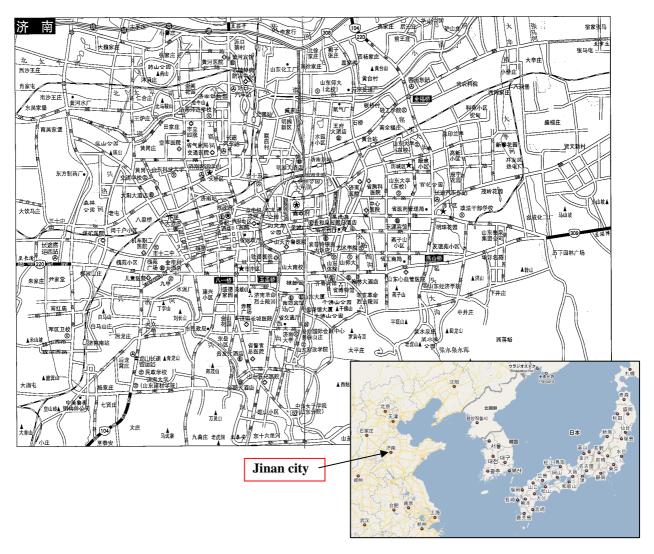


Figure 1: Geographical boundary of the CPA

The contact details of the CPA implementer are as follows:

Name of the CPA implementer	Jinan Municipal Public Transport General Co. (JPTGC)
Contact details Address	No.3.East Qichechang Road, Hengtong



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	Office Building, Jinan, Shandong Province
e-mail	dreamwumin@163.com
Tel	86-0531-85905026
FAX	86-0531-85902970

A.4.2. Duration of the small-scale CPA:

A.4.2.1. Starting date of the small-scale CPA:

January 1, 2012

A.4.2.2. Expected operational lifetime of the small-scale CPA:

10 years

A.4.3. Choice of the crediting period and related information:

Fixed crediting period

A.4.3.1. Starting date of the crediting period:

1st of January 2012 or the date of registration of the PoA, whichever is later

A.4.3.2. Length of the crediting period, first crediting period if the choice is renewable CP:

10years

Estimated amount of emission reductions over the chosen crediting period: A.4.4.

The estimated emission reduction of the CPA is shown as below:

Year	Estimation of annual emission reductions (tonnes of CO ₂ e)
2013	2,450
2014	2,450

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2015	2,450
2016	2,450
2017	2,450
2018	2,450
2019	2,450
2020	2,450
2021	2,450
2022	2,450
Total	24,500
Total number of crediting years	10
Annual average over the crediting period	2,450

A.4.5. Public funding of the <u>CPA</u>:

No public funding is utilized in the CPA.

A.4.6. Information to confirm that the proposed <u>small-scale CPA</u> is not a <u>de-bundled</u> <u>component</u>

According to "Guidelines on Assessment of Debundling for SSC Project Activities (ver. 03)",³ it is specified that

If each of the independent subsystems/measures (e.g., biogas digesters, residential solar energy systems, kerosene or incandescent lighting replacements) included in one or more CDM project activities is no greater than 1% of the small scale thresholds defined by the applied methodology and the subsystems/measures are indicated in the PDDs to be each implemented at or in multiple locations (e.g., installed at or in multiple homes) then these CDM project activities are exempted from performing a de-bundling check, i.e., considered as being not a de-bundled component of a large scale activity.

So far, annual emission reduction from an bus installed with the device is estimated as less than 1 ton CO_2e per a bus in average for the proposed SSC-CPA. The 1 ton CO_2e per system is far less than the threshold mentioned above (600 ton CO_2e per year) for exemption of de-bundling check. Therefore, any CPA of the PoA is exempted from performing de-bundling check.

A.4.7. Confirmation that <u>small-scale CPA</u> is neither registered as an individual CDM project activity or is part of another Registered PoA:

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³ <u>http://cdm.unfccc.int/Reference/Guidclarif/ssc/methSSC_guid17.pdf</u>.



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The idling stop CDM project is not registered nor submitted to the validation process as an individual CDM project activity or as a part of registered PoA at present in China.

SECTION B. Eligibility of small-scale CPA and Estimation of emissions reductions

B.1. Title and reference of the Registered <u>PoA to which small-scale CPA is added</u>:

Energy Efficiency Promoting Program using Idling Stop Devices for Public Buses in Shandong, China.

B.2. Justification of the why the <u>small-scale CPA</u> is eligible to be included in the Registered PoA :

The proposed CPA complies with all of the eligibility criteria that are described in A.4.2.2. of CDM-SSC-PoA-DD. The justifications are given as follows:

 Installations of the post-fit type idling stop devices to in-use public buses in Shandon province. Installation of Idling Stop devices in new vehicles only if it can be demonstrated that at the time of new vehicle acquisition there are no vehicles, of a type similar to those in the baseline or project activity, available for sale in the country of the project activity, that are sold with automatic Idling Stop devices installed as a standard feature.

The CPA involves in-use public buses of JPTGC in Shandon province.

2) Vehicles used for public transportation, such as buses that are centrally owned and managed by a single entity and are driven by contractors or employees of the central entity.

Buses in the CPA are centrally owned and managed by JPTGC, a public bus company.

3) Vehicles using petrodiesel as fuel.

All target buses uses perodiesel as fuel.

4) The bus company involved has no existing anti-idling policy

JPTGC have not been promoting manual Idling Stop and do not have any regulation to prohibit Idling.

5) The aggregate emission reductions of a single CPA may not exceed 60 ktCO2 equivalent annually.

The aggregated emission reduction is 1,304 tCO₂/year at maximum.

6) Any bus installed with the device under the CPA does not belong to another CPA under this PoA, another registered CDM project activity or another CDM PoA.

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The idling stop CDM project is not registered nor submitted to the validation process as an individual CDM project activity or as a part of registered PoA at present in China.

B.3. Assessment and demonstration of additionality of the small-scale CPA, as per eligibility criteria listed in the Registered PoA:

In line with E.5.1 of the SSC-PoA-DD, the additionality of the CPA is demonstrated as follows.

Step 1. Identification of alternative scenarios:

There are four (4) plausible alternative scenarios for the proposed project. These scenarios all comply with mandatory and regulations of China and Shandon province and the public bus companies.

Scenario 1: Continuation of current practice

Scenario 2: Implementation of manual idling stop by behavioural changes not using the post-fit type device

Scenario 3: Introduction of new buses with pre-installed idling stop device

Scenario 4: Implementation of the proposed project without CDM

Step 2. Barrier analysis:

Among four (4) barriers in the Attachment A to Appendix B of "The simplified modalities and procedures for small-scale CDM project activities", the proposed project faces the following barriers

Technological barriers:

The post-fit type idling stop device was invented by ECO-MOTION, Ltd of Japan, and is considered to be state-of-the-art technologies based upon the experience and know-how obtained from more than ten years use in Japan. Since the device are connected to vehicle electronic control unit (ECU), very high and sensitive skills and knowledge are required to keep vehicle operation safely and smoothly. The post-fit type idling stop device has not been introduced in China, and this is the first project to introduce the device in China. In installing the device to accommodate buses in China, not only reading the installation manual but special skills and know how are required. JPTGC(Jinan Public Transport Group Company) has no local staff with enough knowledge and experience to properly install the device. In the operation phase, training of the driver is also needed to understand the skills how to drive safely preventing any influences or damages on buses. These local staff training and education programs for them will be implemented in the project activity by Japanese side. Before implementing the proposed project, not only JPTGC, but also JPTGC Institute of science and technology and the bus company who provides buses to JPTGC are also participate to install the devices to the buses, and find out problems and issues in the installation and operation phase, and also analyze the effect such as reduction of fuel consumptions and impact to the engine or battery. These tests have been implemented with the technical support by Japanese side including ECO-MOTION, Ltd.

From above reasons, without the technology transfer from the Japanese side, it is impossible to implement the proposed project.

Barrier due to prevailing practice:

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Currently, JPTGC has no plan to stop idling manually or automatically in their current practice. They have no plan to introduce new type of buses with pre-installed idling stop system. As for post-fit type idling stop device, it is first time for JPTGC to access and test the device, and this was realized by the proposal from Japanese side for this CDM project. Moreover, this type of equipment is first of its kind in China. There is no regulation or mandatory of Chinese government or Shandon province or Jinan city to stop idling for vehicles driving in cities. In addition, JPTGC had been misunderstood that the post-fit type idling stop devices can not apply to Chinese buses and had a negative perception to introduce the devices. Therefore, the buses of JPTGC will continue idling at stoplights or other situations in the absence of the proposed project activity.

From above considerations, there exist technological barrier and barrier due to prevailing practice.

Step 3. Evaluation of alternative scenarios

Each scenario identified in Step 1 was assessed as follows.

Scenario 1: Continuation of current practice

The scenario do not install any devices, therefore it requires minimal investment and operational costs. It is no need to establish training programs for drivers, and there is no additional skills required for drivers.

Scenario 2: Implementation of manual idling stop by behavioural changes not using the post-fit type device

There is no regulation or mandatory in China or Shandon province or Jinan city for motor vehicles to stop idling manually at stoplights or other situations. There is also no measures or plans to promote stop idling in JPTGC. It is said that manual idling stop may not be spread widely, because it needs engine on and off by turning ignition key manually. These manual operations may have potential to cause operation mistakes and delay of start moving, and may also affect smooth and safe drive. Therefore, his scenario can not be the baseline scenario.

Scenario 3: Introduction of new buses with pre-installed idling stop device

JPTGC has no plan to introduce new type of buses with pre-installed idling stop system. Moreover, bus manufacturers who provide buses to JPTGC do not have any plan to produce buses with pre-installed idling stop system. Therefore, this scenario can not be the baseline scenario.

Scenario 4: Implementation of the proposed project without CDM

As elaborated in Step 2, the proposed project faces technological barrier and barrier due to prevailing practice. Therefore, this scenario can not be the baseline scenario.

From the above analysis, the baseline scenario is identified as Scenario 1, continuation of current practice. As elaborated in Step 2, the proposed project faces technological barrier and barrier due to prevailing practice. Therefore, the proposed project is considered as additional.

B.4. Description of the sources and gases included in the <u>project boundary</u> and proof that the <u>small-scale CPA</u> is located within the geographical boundary of the registered PoA.



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The project boundary includes roads where the buses installed with the devices will be driven. In the table below, all sources of the baseline and the project activity are listed.

	Source	Gas	Included?	Justification / Explanation
e		CO ₂	Yes	Major emission source.
Baseline	Emissions at idling	CH ₄	No	Not significant. Excluded for simplification and conservativeness
B		N ₂ O	No	Not significant. Excluded for simplification and conservativeness
t IS		CO ₂	Yes	Major emission source.
Project emissions	Emissions at re-starting the engine	CH ₄	No	Not significant. Excluded for simplification
er	-	N ₂ O	No	Not significant. Excluded for simplification

Table 1 Sources and gases included in the baseline and the project activity

The geographical boundary of the CPA is shown in Figure 1. It is obvious that the CPA, Jinan City, is within the geographical boundary of the PoA, Shandon province.

B.5.	Emission	reductions:
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B.5.1. Data and parameters that are available at validation:

Data / Parameter:	BIF
Data unit:	-
Description:	Baseline Idling Stop Factor
Source of data used:	The methodology
Value applied:	0.95
Justification of the	The default value provided in the methodology is chosen for SSC-CPAs.
choice of data or	
description of	
measurement methods	
and procedures actually	
applied :	
Any comment:	-

Data / Parameter:	FCR _i
Data unit:	litres/second
Description:	Fuel Consumption Rate at Idling condition of baseline vehicle <i>i</i>
Source of data used:	Measurements
Value applied:	0.000556 (2 litters per hour) is used for ex-ante calculations of this version of
	CPA-DD.
Justification of the	The figure is based on the direct measurements of sample buses.



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choice of data or	Ex ante field tests will be implemented at JPTGC (Entire measurement or
description of	sample measurement are planned to be implemented before the validation
measurement methods	starts.)
and procedures actually	
applied :	
Any comment:	-

Data / Parameter:	D _j
Data unit:	kg/liter
Description:	Density of fuel j
Source of data used:	The Energy Statistics Working Group Meeting report of International Energy
	Agency
Value applied:	0.8397 for diesel oil
Justification of the	International value prepared by International Energy Agency.
choice of data or	http://www.iea.org/Textbase/work/2004/eswg/22_Oil%20Densities.pdf.
description of	
measurement methods	
and procedures actually	
applied :	
Any comment:	-

Data / Parameter:	NCVi
Data unit:	MJ/t
Description:	Net calorific value of fuel j
Source of data used:	China Energy Statistical Yearbook 2007
Value applied:	42,652 MJ/t for diesel oil
Justification of the	National official value.
choice of data or	42,652 kJ/kg for diesel oil.
description of	
measurement methods	
and procedures actually	
applied :	
Any comment:	-

Data / Parameter:	EF _{CO2,j}
Data unit:	tCO ₂ /MJ
Description:	CO ₂ emission factor of fuel j
Source of data used:	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2:
	Energy, Chapter 1: Introduction, Table 1.4
Value applied:	$72.6*10^{-6}$ for diesel oil
Justification of the	IPCC default value (lower value of 95% CI).
choice of data or	72,600 kgCO ₂ /TJ for diesel oil.
description of	
measurement methods	
and procedures actually	
applied :	



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Any comment: _

Data / Parameter:	ST _i
Data unit:	seconds/Idling Stop
Description:	Start-up compensation time
Source of data used:	The methodology
Value applied:	10
Justification of the	The default value provided in the methodology.
choice of data or	
description of	
measurement methods	
and procedures actually	
applied :	
Any comment:	-

B.5.2. Ex-ante calculation of emission reductions:

(I) Baseline emissions

Annual baseline emissions are the summation of the annual cumulative Idling Stop period times the baseline emission factor for each vehicle, multiplied by a Baseline Idling Stop default Factor or BIF (i.e. the estimated percentage of vehicles that in the baseline would manually turn off their engines.).

$$BE_{1} = \sum_{i} \left(BEF_{i} \times CIP_{i,1} \times 10^{-6} \right) \times BIF$$

= 1.45 × 1,425,600 × 10⁻⁶ × 0.95 × 1,400
= 2,741 (1)

Where:

Total baseline emissions in the year 1 ($tCO_2/year$)
Cumulative Idling Stop period for all vehicles of type <i>i</i> in the year 1 $(=330*12*3,600*10/100 = 1,425,600 \text{ seconds/year})$
Baseline Idling Stop Factor (The default value of 0.95)
Baseline Emission Factor when Idling for vehicle type <i>i</i> (gCO ₂ /second)

The Baseline Emission Factor when Idling (BEF_i) for each type of project vehicle *i* is determined as:

$$BEF_{i} = FCR_{i} \times D_{j} \times NCV_{j} \times EF_{co2j} \times 10^{3}$$

= 0.000556 \times 0.8397 \times 42,652 \times 72.6 \times 10^{-6} \times 10^{3}
= 1.45 (2)

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Where: Fuel type for vehicle type i, determined from engine specifications Fuel Consumption Rate at Idling condition of baseline vehicle *i* (litres/second) FCR; ("Option (1): Measurement of all project vehicles" will be chosen. 0.000556 (2 litters per hour) is used for ex-ante calculations of this version of CPA-DD.) Density of fuel *i* (kg/litre), determined from national or international values D_i (Density of diesel: 0.8397 kg/l) NCV_i Net Calorific Value of fuel *j* (MJ/t), determined from reliable local or national data shall be used. IPCC default values (lower value of 95% CI) shall be used only when country or project specific data are not available or demonstrably difficult to obtain. Values shall be updated if national values or IPCC values change (Net calorific value of diesel: 42,652 kJ/kg (42,652 MJ/t)) EF_{CO2i} CO_2 emission factor of fuel *j* (tCO₂/MJ), determined from reliable local or national data shall be used. IPCC default values (lower value of 95% CI) shall be used only when country or project specific data are not available or demonstrably difficult to obtain. Values shall be updated if national values or IPCC values

(II) Project emissions

Project emissions are the emissions from fuel consumed in restarting the engine immediately after each Idling Stop.

change (CO₂ emission factor of diesel: 72,600 kgCO₂/TJ (72.6*10⁻⁶ tCO₂/MJ))

$$PE_{1} = \sum_{i} \left(NT_{i,1} \times PEF_{i} \times 10^{-6} \right)$$

= 14,400 × 14.46 × 10⁻⁶ × 1,400
= 291 (3)

Where:

PE_1	Total project emissions in the year 1 (tCO ₂ /year)
$NT_{i,1}$	Total number of Idling Stops of all vehicles of type <i>i</i> in the year 1 (= $12*1,200 = 14,400$ times/year)
PEF_i	Project Emission Factor per Idling Stop for vehicle type i (= 14.46 gCO ₂ /time)

Project Emission Factor per Idling Stop (PEF_i) is calculated according to the equation below:

$$PEF_i = BEF_i \times ST_i$$

= 1.446 × 10
= 14.46 (4)



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Where:

 ST_i Start-up compensation time. Idling Stop period in seconds to compensate for fuel consumed in restarting the engine after each Idling Stop (seconds/Idling Stop) (The default value of 10 seconds)

(III) Leakages

As per the methodology AMS.III.AP./Ver.2, no leakage calculation is required.

(IV) Emission reductions

The amount of emission reductions ER_y in year y is given by

$$ER_{y} = BE_{y} - PE_{y}$$

= 2,741 - 291
= 2,450 (5)

Where:

 ER_{y} Emission reductions in year y (tCO₂e)

Year	Estimation of project activity emissions (tonnes of CO ₂ e)	Estimation of baseline emissions (tonnes of CO ₂ e)	Estimation of leakage (tonnes of CO ₂ e)	Estimation of overall emission reductions (tonnes of CO ₂ e)
2013	291	2,741	0	2,450
2014	291	2,741	0	2,450
2015	291	2,741	0	2,450
2016	291	2,741	0	2,450
2017	291	2,741	0	2,450
2018	291	2,741	0	2,450
2019	291	2,741	0	2,450
2020	291	2,741	0	2,450
2021	291	2,741	0	2,450
2022	291	2,741	0	2,450
$\begin{array}{c} \textbf{Total} \\ (tonnes of \\ CO_2 e) \end{array}$	2,910	27,410	0	24,500

B.5.3. Summary of the ex-ante estimation of emission reductions:

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B.6. Application of the monitoring methodology and description of the monitoring plan:

B.6.1. Description of the monitoring plan:

1) The role of Jinan Public Transport Group Company (JPTGC)

The following table shows the role of JPTGC.

Table 2 The role of Jinan Public Transport Group Company (JPTGC)	
Monitoring management	- Implement and manage monitoring of CPAs
Data collection and	- Implement data collection of the CPA
reporting	- Prepare daily and monthly report
	- Check data quality and collection procedures regularly
Data storage and	- Collect memory cards.
management	- Implement data management of CPA.
	- Store and maintain records.
Quality assurance	- Undertake regular maintenance of the devices
	- Receive necessary training for operation of the system and quality
	assurance of monitoring data

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2) Monitored data

Data / Parameter:	$CIP_{i,y}$	
Data unit:	seconds/year	
Description:	Cumulative Idling Period of all vehicles of type <i>i</i> in year <i>y</i>	
Source of data to be	Electronically recorded to the idling stop device, ECO STARTER	
used:		
Value of data applied	829,440	
for the purpose of		
calculating expected	= operation time * ratio of idling stop to operation time = $240*3600*12*8/100$	
emission reductions in	operation time : 240 hours/month	
section B.5	ratio of idling stop to operation time: 8%	
	(Sources: Based on test operations in November 2010)	
Description of	Signals of vehicle speed and engine on/off will be electronically collected by	
measurement methods	the post-fit type idling stop device (ECO STARTER), and each idling stop time	
and procedures to be	will be calculated automatically. Data will be collected monthly and the	
applied:	cumulative idling period is calculated by summing up each idling stop time in a	
	year.	
	Only vehicle stoppages up to a maximum of 3 minutes qualify under this	
	definition and longer duration stoppages (e.g. at the depot, or fueling stops) are excluded.	
QA/QC procedures to	Data will be collected using a software every month and will be stored for	
be applied:	crediting period and an additional 2 years.	
Any comment:	-	
Data / Parameter:	$NT_{i,y}$	



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Data unit:	times/year
Description:	Total number of times of Idling Stop of vehicle <i>i</i> in the year y
Source of data to be	Electronically recorded to the idling stop device, ECO STARTER
used:	
Value of data applied	14,400 (=1,200*12)
for the purpose of	(Sources: Based on test operations in November 2010)
calculating expected	
emission reductions in	
section B.5	
Description of	Signals of vehicle speed and engine on/off will be electronically collected by the
measurement methods	post-fit type idling stop device (ECO STARTER), and number of idling stop will
and procedures to be	be counted automatically. Data will be collected monthly and total number of
applied:	times of Idling Stop is calculated by summing up monthly data.
QA/QC procedures to	Data will be collected using reliable software every month and will be stored for
be applied:	crediting period and an additional 2 years.
Any comment:	Annually

Data / Parameter:	Information regarding the project vehicles installing the Idling Stop devices, i.e. fuel types, vehicle types, engine displacements, engine model year, with or without air conditioner
Data unit:	-
Description:	-
Source of data to be	Bus ledger of Jinan Public Transport Group Company (JPTGC)
used:	
Value of data applied	-
for the purpose of	
calculating expected	
emission reductions in	
section B.5	
Description of	Necessary information shall be collected and aggregated in a database.
measurement methods	
and procedures to be	
applied:	
QA/QC procedures to	-
be applied:	
Any comment:	Annually monitored.

3) The outline of the monitoring by the CPA

The followings are outline of monitoring plan based on the methodology applied. The monitoring structure for the project activity is shown below.

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Figure 2 The monitoring structure of the CPA

The data of each monitoring parameter is recorded to the SD card to be installed to the idling-stop device. The following items will be recorded.

- i) Elapsed time in second from ignition key "On".
- ii) Driving status: 1;Engine On 2;Velocity non-Zero 3;Velocity Zero 4;Engine Off
- iii) Total number of starting starter motor.

The bus driver will collect the SD card and pass it to the depot manager. The head quarter of the JPTGC will collect these SD card (or copied data) from each depot manager. The head quarter will send these collected data to the program coordinating/managing entity. These data collection will be done monthly. The head quarter of the CPA implementer will also copy, store and maintain theses data.

The Idling Stop devices installed in the vehicles shall be subjected to regular maintenance and calibration as per the manufacturer's recommendation to ensure appropriate performance. After installing the Idling Stop devices, the devices should be subjected to an operational check, including a test drive, according to an appropriate check sheet to ensure proper operation. The driving data shall be recorded by a data logger and be protected such that it cannot be modified artificially. The logged data should be analyzed at least monthly to check for any irregular data by comparing it with previous data or data from other vehicles.

In order to ensure that the output values are reliable and not manipulated, the Idling Stop periods and Idling Stop frequencies recorded by the electronic devices shall be cross checked with another measurement method, such as manual on-board measurement. This cross check should be done once a year for a sample of project vehicles.



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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:

 \square Please tick if this information is provided at the PoA level. In this case sections C.2. and C.3. need not be completed in this form.

Environmental Analysis is done at SSC-CPA level.

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

It is thought that there is no negative environmental effect and that the idling stop device can avoid the waste fuel consumption during the signal waiting. By contrast, the system can contribute to improve the air pollutants in the project area because it reduces the emission of NOx, CO, PM, and THC when vehicle stops for a certain period of time.

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

No environmental impact assessment is required for each CPA, because no construction works are accompanied. There are no laws or regulations about installation of the idling stop device.

SECTION D. Stakeholders' comments

>>

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

 \Box Please tick if this information is provided at the PoA level. In this case sections D.2. to D.4. need not be completed in this form.

Local stakeholder comments are invited at the CPA level.

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

Elaborated before submitting to the validation.



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D.3. Summary of the comments received:

Elaborated before submitting to the validation.

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

Elaborated before submitting to the validation.



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Annex 1

CONTACT INFORMATION ON ENTITY/INDIVIDUAL RESPONSIBLE FOR THE <u>SMALL-SCALE CPA</u>

Organization:	Jinan Municipal Public Transport General Co.
Street/P.O.Box:	No.3.East Qichechang Road
Building:	Hengtong Office Building
City:	Jinan
State/Region:	Shandong Province
Postfix/ZIP:	250031
Country:	China
Telephone:	86-0531-85905026
FAX:	86-0531-85902970
E-Mail:	Jngj_yjy@163.com
URL:	
Represented by:	Wu Yurong
Title:	
Salutation:	
Last Name:	Wu
Middle Name:	Yu
First Name:	Rong
Department:	Policy research centre
Mobile:	13698625175
Direct FAX:	86-0531-85902970
Direct tel:	86-0531-85905026
Personal E-Mail:	dreamwumin@163.com



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Annex 2

INFORMATION REGARDING PUBLIC FUNDING

The PoA does not utilize any public funding.



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Annex 3

BASELINE INFORMATION



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Annex 4

MONITORING INFORMATION

Please refer B.6.1.