

VALIDATION REPORT

Itezhi Tezhi Power Corporation (ITPC)

Itezhi Tezhi Hydro Power

SGS Climate Change Programme

SGS United Kingdom Ltd
SGS House
217-221 London Road
Camberley Surrey
GU15 3EY
United Kingdom

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SGS United Kingdom Limited			
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Summary:			
<p>Itezhi Tezhi Power Corporation (ITPC) has commissioned SGS to perform the validation of the project Itezhi Tezhi Hydro Power at Zambia using the CDM methodology ACM0002, Version 16.</p> <p>The scope of the validation is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against CDM Validation and Verification Standard (version 7.0), Kyoto Protocol requirements and UNFCCC rules.</p> <p>The report is based on the assessment of the project design document undertaken through stakeholder consultations, application of standard auditing techniques including but not limited to document reviews, follow up actions (e.g. site visit, telephone or e-mail interviews) and also the review of the applicable approved methodology and underlying formulae and calculations.</p> <p>The report and the annexed validation describes a total of 11 findings which include:</p> <ul style="list-style-type: none"> • 09 Corrective Action Requests (CARs); • 02 Clarification Requests (CLs); • 00 Forward Action Requests (FARs); <p>– All findings have been closed satisfactorily and the project will be recommended to the CDM Executive Board for registration.</p>			
Subject:		Document Distribution	
CDM Validation			
Validation Team:			
Sauvik Banerjee – Lead Assessor Shivaji Chakraborty- Technical Expert (TA 1.2) Philip Abuor – Local Assessor		<input checked="" type="checkbox"/> No Distribution (without permission from the Client or responsible organisational unit)	
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Date: 17/07/2015 Name: Ajoy Gupta			
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Abbreviations

ACM	Approved Consolidated Methodology
ASB	Approved Standardized Baseline
AfDB	African Development Bank
BOOT	Build Own Operate and Transfer
CAR	Corrective action request
CDM	Clean development mechanism
CDM	EB CDM Executive Board
CER	Certified Emission Reduction
CL	Clarification Request
COP/MOP	Conference of parties serving as the meeting of parties to Kyoto Protocol
DOE	Designated operational entity
DNA	Designated National Authority
DPR	Detailed Project Report
DRFN	Desert Research Foundation of Namibia
EB	Executive Board
EF	Emission Factor
EPC	Engineering, Procurement and Construction
EIA	Environment Impact Assessment
ESMAP	Energy Sector Management Assistance Program, World Bank Group
FAR	Forward action request
GHG	Greenhouse gas(es)
GWh	Giga Watt Hour
IPCC	Intergovernmental Panel on Climate Change
ITPC	Itezhi Tezhi Power Corporation
K	Kelvin
LAC	Local Assessment Checklist
LOA	Letter of Approval
LLDC	Landlocked Developing Country
LDC	Least Developed Country
MoC	Modalities of Communication
MoM	Minutes of Meeting
MW	Mega Watt
MWh	Mega Watt Hour
MP	Monitoring Plan
NE	Northern Electricity
ODA	Official Development Assistance
PPA	Power Purchase Agreement
PPP	Public Private Partnership
PDD	Project Design Document
SAPP	South African Power Pool
TCE	Tata Consulting Engineers Limited
UNFCCC	United Nations Framework Convention on Climate Change
UNEP	United Nations Environment Programme
USD	US Dollar
VVS	Validation and Verification Standard
ZESCO	Zambia Electricity Supply Corporation Limited

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1. Validation Opinion

SGS United Kingdom Ltd has been contracted by Itezhi Tezhi Power Corporation to perform a validation of the project: **Itezhi Tezhi Hydro Power** at **Zambia**.

The Validation was performed in accordance with the UNFCCC criteria for the Clean Development Mechanism Validation and Verification Standard (Version 7.0) and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The proposed project activity involves installation of a Greenfield 120MW Hydro Power plant in the Central Province of Zambia and will be connected to the Southern African Power Pool (SAPP) grid system. The project activity will be developed utilizing existing Itezhi Tezhi dam on Kafue River in Zambia.

In our opinion, the project meets all relevant UNFCCC, CDM criteria and all relevant host country criteria. The project correctly applies methodology ACM0002, version 16. It is demonstrated that the project is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

The total emission reductions from the project are estimated to be **5,892,480 tCO_{2e}** over a 10 year crediting period averaging **589,248 t** of CO_{2e} annually. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given the underlying assumptions do not change.

The project will hence be recommended by SGS for registration with the UNFCCC CDM EB.

Signed on Behalf of the Validation Body by Authorized Signatory



Signature:

Name: Jonathan Hall

Date: 08/09/2015

2. Introduction

2.1 Objective

Itezhi Tezhi Power Corporation has commissioned SGS to perform the validation of the project “**Itezhi Tezhi Hydro Power**”, at Zambia, against the relevant requirements for Clean Development Mechanism (CDM) project activities. The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, the monitoring plan (MP) and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design, as documented, is sound and reasonable and meets the stated requirements and identified criteria. Validation is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reduction (CER). UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities and related decisions by the COP/MOP and the CDM Executive Board.

2.2 Scope

The scope of the validation is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. SGS has employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

The validation is not meant to provide any consulting towards the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

2.3 GHG Project Description

The purpose of the project activity is to install a Greenfield 2x60MW= 120MW hydro project in the central province of Zambia connected to the South African Power Pool. In absence of the project activity, there would have been generation of power with fossil fuel intensive power plants and thereby lead to more overall GHG emissions than without the proposed CDM project activity.

2.4 The Names and Roles of the Validation Team Members

Assessment Team	Role
Sauvik Banerjee	Lead Assessor
Shivaji Chakraborty	Technical Expert (TA 1.2)
Philip Abuor	Local Assessor

Technical Review	Role
Ajoy Gupta	Technical Reviewer
Nareshkumar Suneja	Technical Expert (TA 1.2)

3. Methodology

3.1 Review of CDM-PDD and Additional Documentation

The validation is performed primarily as a document review of the publicly available project design documents version 01 dated 19/11/2012 and version 02 dated 11/08/2014 and subsequent versions 03 dated 09/10/2014, and version 04 dated 03/11/2014, version 5 dated 15/12/2014, version 6 dated 17/05/2015, version 07 dated 07/07/2015 and version 08 dated 13/07/2015 (final version). The assessment is performed by trained assessors using a validation protocol attached as Annex 2, table 2.

The assessment team on the site visit from 19/06/2013- 20/06/2013, checked the methodological applicability, baseline, project additionality; PDD related documents and the results are summarized in Annex I: Local Assessment Checklist. Interview was carried out during the site visit which included local staff of Itzhi Tezhi. In addition, the assessment team also interviewed the local stakeholders in the region and it was found that the project inception generated employment amongst the local population. A detailed list of names of the individuals interviewed is included in Section 6 of the report.

3.2 Use of the Validation Protocol

The validation protocol used for the assessment is designed in accordance with the Validation and Verification Standard, Version 7.0. It serves the following purposes:

- it organises, details and clarifies the requirements the project is expected to meet; and
- it documents both how a particular requirement has been validated and the result of the validation (reporting).

The validation protocol consists of several tables. The different columns in these tables are described below.

Checklist Question	Ref ID	Means of Verification (MoV)	Comment	Draft and/or Final Conclusion
The various requirements are linked to checklist questions the project should meet.	Lists any references and sources used in the validation process. Full details are provided in the table at the bottom of the checklist.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (Y), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). Clarification Request (CL) is used when the validation team has identified a need for further clarification.

The completed validation protocol for this project is attached as Annex A.1 to this report

3.3 Findings

As an outcome of the validation process, the team can raise different types of findings

A Clarification Request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met

Where a non-conformance arises the Assessor shall raise a **Corrective Action Request (CAR)**. A CAR is issued, where:

- The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
- The CDM requirements have not been met;
- There is a risk that emission reductions cannot be monitored or calculated.

The validation process may be halted until this information has been made available to the assessors' satisfaction. Failure to address a CL may result in a CAR. Information or clarifications provided as a result of a CL may also lead to a CAR.

A Forward Action Request (FAR) is raised during validation to highlight issues related to project implementation that require review during the first verification of the project activity. FARs shall not relate to the CDM requirements for registration.

Corrective Action Requests and Clarification Requests are raised in the draft validation protocol and detailed in a separate form (Annex A.3). In this form, the Project Developer is given the opportunity to "close" outstanding CARs and respond to CLs and FARs.

3.4 Internal Quality Control

Following the completion of the assessment process and a recommendation by the Assessment team, all documentation will be forwarded to a Technical Reviewer. The task of the Technical Reviewer is to check that all procedures have been followed and all conclusions are justified. The Technical Reviewer will either accept or reject the recommendation made by the assessment team. Findings can be raised at this stage and client must address them within agreed timeline.

4. Validation Findings

4.1 Approval

The Host country for this project is Zambia. Zambia ratified the Kyoto protocol on 07/07/2006. The same was checked against the UNFCCC webpage (https://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php) and found consistent.

The copy of Letter of Approval (LoA)^{/2/} issued by the DNA office of Zambia, National Committee for Clean Development Mechanism, Ministry of Lands, Natural Resources and Environment Protection bearing Letter ref No. MLNREP 6/6/25 dated 17/01/2013 was made available by the PP to the assessment team. The same was checked against the UNFCCC webpage (<http://cdm.unfccc.int/DNA/index.html>) and was found to be consistent. The Letter of Approval (LoA)^{/2/} from the Party confirmed that the host party involved has approved the project activity titled as 'Itezhi Tezhi Hydro Power', which complies with the requirement stipulated in the paragraph 40(d) of VVS, version 7.0.

The name of the project activity and the Project Participants (Itezhi Tezhi Power Corporation) in the Letter of Approval^{/2/} issued by the Host Country DNA office was verified against section A.1 and section A.4 of the final version of the PDD^{/1/} and was found to be consistent and hence accepted and also the Letter of Approval (LoA)^{/2/} confirms that:

- (a.) Zambia has accessed to the Kyoto Protocol on 07/07/2006 and hence the host is a Party to the Kyoto Protocol;
- (b.) The host party Zambia participates voluntarily in the proposed CDM project activity;
- (c.) The proposed CDM project activity contributes to Sustainable Development in Zambia;
- (d.) The DNA authorized ZESCO and TATA Africa to participate in the project.

The Letter of Approval^{/2/} is unconditional with respect to (a) to (d) mentioned above.

It is further confirmed in accordance with para 40-43 of the VVS, version 7.0^{/10/} that:

- (a) The letter of approval^{/2/} issued by the DNA of Zambia "National Committee for Clean Development Mechanism, Ministry of Lands, Natural Resources and Environment Protection" bearing Letter no. MLNREP 6/6/25 dated 17/01/2013 has been received.
- (b) Confirmation vide email dated 18/11/2014 has been obtained from the DNA office of Zambia, Mr. Lungu M. Richard (Principal Natural Resource Management Officer, Designated National Authority)^{/6/}. The DNA office of Zambia confirmed that the project, bearing the unique title, was considered in the Letter of Approval^{/2/} accorded vide letter MLNREP 6/6/25 dated 17/01/2013. The same was checked against the UNFCCC webpage (<http://cdm.unfccc.int/DNA/index.html>) and was found to be consistent. Based on the communication and confirmation received from the Host Party DNA Office, it was accepted by the assessment team that the DNA approval was correctly done and the approval from Zambia DNA was found to be consistent and thus accepted. It was confirmed that the letter of approval has been issued by the Designated National Authority (DNA) office of Zambia and it is valid for the proposed CDM project activity under validation. The email from DNA also confirmed that the LoA was signed by Principal Natural Resource Management Officer, Designated National Authority (CDM DNA) and thus the authority of signing the LoA was found to be authentic and thus accepted. Furthermore, a cross-check as per the requirement of para 41 & 42 of VVS, version 7.0 was done by the assessment team through phone call with the Zambian DNA (Ph no. +260 975 794217 / +260 967 929056) and it was confirmed by Mr. Lungu M. Richard, National Committee for Clean Development Mechanism, Ministry of Lands, Natural Resources and Environment Protection that the MLNREP 6/6/25 dated 17/01/2013 had been issued to Itezhi Tezhi Power Corporation (ITPC). Thus the authenticity of the letter of approval^{/2/} was checked and found to be consistent.

It was confirmed that the letter of approval conforms to all the requirement of the paragraphs 40-43 of VVS, version 7.0^{/10/}.

Discussion of CAR/CL:

The 1st page of the webhosted PDD listed only ITPC as the PP whereas Tata Africa was found to be mentioned in Appendix-1 of the webhosted PDD, version 1 dated 19/11/2012. PP was to clarify this inconsistency as per requirement of EB 66 Annex 8. The current implementation status was not clear from the webhosted PDD. PP was requested to clarify in this regard. **CAR#01** was raised.

The reference to Tata Africa was found to be removed from the PDD and thus accepted. New contact details were checked with the MoC dated 05/08/2014 and found to be consistent hence accepted. The detailed implementation status of the plant was checked and found to be consistent as per the implementation plan checked on site and thus accepted.

Further the PP was requested to clarify why Appendix 1 of the PDD and MOC has not included the contact details of ZESCO Ltd., which contradicts with Section A.4 of the PDD stating ZESCO Ltd. is one of the project participants (public sector). In response, the PP had corrected the PDD and had removed the details of ZESCO from section A.4 of the final PDD. The project participant details are found to be consistent with Appendix 1 of the final PDD and the MOC. Thus, **CAR#01** was closed out.

4.2 Authorization

The Host country for this project is Zambia. Zambia has been approved by a party to the Kyoto protocol on 07/06/2006. The same was checked against the UNFCCC webpage (https://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php)^{/7/} and found to be consistent. The letter of approval^{/2/} conforms to all the requirement of the paragraphs 46-49 of VVS, version 7.0^{/10/} and hence is accepted.

The PPs are listed in tabular form in section A.4 of the final PDD^{/1/}. The LoA^{/2/} from the DNA office of Zambia authorizes the participation of Itezhi Tezhi Power Corporation (ITPC); and therefore the PP is approved by the Party to the Kyoto Protocol. This was found in line with Para 47 of VVS, version 7.0^{/10/}. Also, the project participants listed in tabular form in section A.4 of the PDD^{/1/} are consistent with the contact details provided in Appendix 1 of the PDD^{/1/}. The validation team also confirms that no entities other than those approved as the project participants are included under section A.4 and annex 1 of the PDD^{/1/}.

No Annex I Party has been identified in the latest version of the PDD^{/1/} and therefore no further Letter of Approval was required. It was observed that the CDM EB has agreed that the registration of a CDM project activity can take place without an Annex I Party being involved at the stage of registration although it should be noted that before CERs can be transferred to an Annex 1 Party, a Letter of Approval from the Annex 1 Party will need to be submitted.

The PP also submitted the declaration towards non-involvement of ODA dated 20/06/2013^{/8/}. It was checked and concluded that the project financials will be met through internal accruals hence accepted. The issue of the project finance have been further discussed in details under section 4.3 of this report below.

4.3 Modalities of Communication and MoC Statement

As a mandatory requirement of the UNFCCC CDM EB, the Project Participants requires to submit the modalities of communication (MoC) before submitting a request for registration for the proposed CDM project activity. The Project Participant provided the MoC dated 05/08/2014^{/3/} which was found to be in line with the information regarding the particulars provided in the Appendix 1 of the Project Design Document (PDD)^{/1/} and complete as per the latest template of MoC version 2.1. Hence the MoC has been accepted.

This is in accordance with para 55-59 of VVS, version 7.0^{/10/}.

From the above discussion, it has been concluded that the proposed CDM project activity meets the relevant CDM requirements.

Discussion on CAR/CL:

The PP was requested to provide the MOC, as per the requirements of EB 48 Annex 60. **CAR#03** was raised in this regard.

In response, the PP Modalities of Communication dated 05/08/2014 was checked and was found to be using the latest template of MoC issue 02.1 and thus accepted. Also the requirements of para 55-59 of VVS version 7.0 has been found to be included in the MoC and thus accepted. Thus, **CAR#03** was closed out.

4.4 Project Design Document including Project Description

The PP had used the Large Scale Project Design Document Form (F-CDM-PDD) version 5.0 and the headings/ logo, format/font follows the standard requirements. The corresponding sections of the PDD are correctly filled and followed the Guidelines for completing the F-CDM-PDD, version 5.0, dated 25th June 2014. These are the latest available versions and had been confirmed from the UNFCCC website (https://cdm.unfccc.int/Reference/PDDs_Forms/PDDs/PDD_form05.pdf)^{/9/} and found to be consistent. This was checked and it was found to be appropriate as per para 63 of VVS, version 7.0^{/10/} and hence is accepted by the assessment team.

The project activity is titled “**Itezhi Tezhi Hydro Power**”. The title was checked by using the UNFCCC website search function:

(<http://cdm.unfccc.int/Projects/Validation/DB/JSKWX4GO66RDFEEUM74A7GV3Q6HUNK/view.html>) and (<http://cdm.unfccc.int/Projects/Validation/DB/1N9TEETJKAPWPS3V4Z0073C4JXRVN8/view.html>)^{/11/}. No

other project with this title was found, hence the title is accepted by the assessment team as being unique. The Project title was found to be unique and consistently mentioned in the initial web hosted version of the PDD till the final version of the Project Design Document (PDD) hence found satisfactory. It was further cross-checked with the project title mentioned in the LoA as mentioned under section 4.1 above, and found to be consistent. The project design and its objectives have been transparently explained in the final version of the PDD and are consistent with the timeline of the project history.

The proposed project activity is hydro power project of capacity 120MW at the existing Itezhi Tezhi dam on Kafue River in Zambia. This project activity will be connected to the Southern African Power Pool (SAPP) grid system and the net power generated will be exported to the SAPP grid system. This will reduce and replace the equivalent amount electricity generated from the carbon intensive SAPP grid system thus helps in reducing the GHG emissions.

The technical detail mentioned in sections A.1 and A.3 of the PDD^{/1/} was found to be accurate and complete with respect to the information as verified from the copy of the ITPC Ltd, Feasibility report for Itezhi Tezhi Hydro Electric Project (2 x 60 MW) prepared by TCE Consulting Engineers Ltd^{/12/} as obtained from the PP during the on-site validation. The credential of the consultants was further confirmed against the information available on the public domain <http://www.tce.co.in>^{/13/} and was found to be a competent company involved in feasibility of Hydro Power Projects and thus found to be consistent in terms of provision of the Feasibility Study report. Furthermore, the consistency of the project description and technical details of the project was also checked during the on-site interview with the senior personnel of Itezhi Tezhi., namely Mr. Kedar Prasad (General Manager) and Mr. Derek Musonda (Senior Project Coordinator)^{/14/}; as a part of on-site validation and document review process in the Client’s office at Lusaka, Zambia and found appropriate.

The PPA for the project was signed with ZESCO on 08/04/2011^{/16/} which was also considered to be the start date of the CDM project activity. This PPA was authorized and approved by the Energy Regulatory Board on 16/05/2011^{/17/}. Further the PP had signed the contracts for the projects with the equipment supplier (EPC Contract), Sinohydro Corporation Limited, China on 16/11/2011^{/15/}.

Main changes and reason for revision between the final PDD against the first version published for the international stakeholder consultation	
PDD Section no.	Description and reason for changing the information in that section
PDD, version 1 dated 19/11/2012	Webhosted Version
PDD, version 8 dated 13/07/2015	<p>In response to CAR01: Section A.1 Removal of PP – Tata Africa from the PDD. Project brief with details of implementation Section A.4: Removal of ZESCO as the PP. In response to CAR02: Section A.2 Revision in the coordinates of the project and political location of the project in the PDD</p> <p>In response to CAR04:Section A.3 Stepwise methodology assessment and conformance of the project with regard to the criteria of the methodology. The diesel monitoring on volume basis have been included and also the density of the diesel in line with the “Tool to calculate the project or leakage emissions”, version 2</p> <p>In response to CAR05,: Section B.6 Calculation of emission factor. Revision in baseline with consideration of the South African Power Pool</p> <p>In response to CAR06,: Section C Details of prior consideration and start date of the project.</p> <p>In response to CAR07, Section B.5 Additionality of the project being demonstrated in the form of barrier analysis</p> <p>In response to CAR08,:Section B.5 Common Practice analysis updated in the PDD based on the South African Power Pool.</p> <p>In response to CAR09,: Section B.6 PLF being corrected and made in line with requirement of EB 48 Annex 11.</p> <p>In response to CL10,: Section B.7.3 Monitoring aspects updated in Section B.7.3</p> <p>In response to CL11,: Section E Detail of stakeholder consultation was included in the PDD.</p>

The information provided in the final version of the PDD^{/1/} provides a clear indication of the project site along with its geographical coordinates. The proposed CDM project activity is located at the existing Itzhi Tezhi dam on Kafue River in Central Province of Zambia. The geographical co-ordinates of the project activity location are Latitude, 26°01'21" East and Longitude 15°46'09" South. The coordinates were cross-checked against Google Map^{/18/} and found to be consistent. The location of the proposed project activity was physically verified during the validation site visit and the assessment team hereby confirms the location information about the project in the PDD^{/1/} is correct.

As per the initial webhosted PDD^{/1/} and the validation site visit conducted, it was confirmed that the proposed project activity was under implementation as per the schedule provided in the PDD section A.1. The implementation schedule for the project activity and the related risk for project implementation details against the selected crediting period was checked based on interviewing the PP during the validation site visit and found justified.

During the validation site visit of the project, it was discussed with the PP and by virtue of further document evaluation it was understood that the proposed project activity was under implementation with 59%^{/19/} of the work completed at the time of final PDD being prepared. This was found to be consistent with the implementation of the project on site and thus accepted.

Discussion of CAR/CL:

The region mentioned in the PDD was not matching with the political location of the site. PP was to clarify in this regard as per the requirement of para 40-42 of VVS 3.0 (active at the time of validation site visit). Coordinates provided in the PDD were decimals. PP was requested to provide coordinates in Degree, minute seconds as per the provisions of EB 66 Annex 8.

Further the PP was requested to correct the inconsistency in the PDD with regard to proper indexing and commas, version number of the methodology and repetition of the methodology in section B.2 of the PDD, version 5. The calculation to arrive at the emission reduction was not mentioned in page 22 of the PDD. Further, the PP was requested to clarify the inconsistency of the monitoring approach of the net calorific value in section B.7.1 and inclusion of SF6 in leakage in section B.7.3 of the PDD, version 5. Thus **CAR#02** was raised.

The region mentioned in the PDD as Central province was consistent with the location of the site and as per the requirement of VVS para 65 VVS 7.0 and thus accepted. Coordinates provided in the PDD was found to be corrected and also checked and found to be correct and thus accepted.

The PP had corrected the inconsistencies in the revised PDD, version 6 and have now transparently demonstrated the Common Practice Analysis and the emission reduction calculation. The PP had also included the monitoring details of the net calorific value and had excluded the SF6 from the leakage. Thus, **CAR#02** was closed. For further details, please refer annex 3 of this document.

4.5 Applicability of selected methodology to the project activity

The project falls under type (I): Renewable Energy project activities. The proposed CDM project activity is 120 MW (2x 60MW)

The PP had applied the large scale of the methodology ACM0002, version 16. The total capacity of the project is 120MW as confirmed by the assessment team which is more than 15MW as specified in the Project Standard, version 7.0 paragraph 89^{/20/}. Hence, the PDD^{/1/} under the section B.1 refers to the approved large scale methodology ACM0002 version 16 correctly. The following are the applicability criteria for the project to be selected under this methodology:

Criteria No.	Criteria as per Methodology ACM0002, version 16	Project Eligibility	Means of Validation
1	This methodology is applicable to grid-connected renewable energy power generation project activities that: (a) Install a Greenfield power plant; (b) Involve a capacity addition to (an) existing plant(s); (c) Involve a retrofit of (an) existing operating plants/units; (d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or	The proposed project activity is considered to fall under point (a) above, namely installation of a Greenfield power plant. The dam was originally built in the 1970s and is currently used for seasonal stream flow regulation. The closest existing power plant is the Kafue gorge upper hydro project which is situated 230 km downstream of the existing dam. The project activity involves installation of	This has been checked by the assessment team and found to be consistent as the Assessment team found the construction of the power plant under process at the site and thus accepted. Further the EPC contract signed with Sinohydro Corporation Limited, China dated 30/11/2009 ^{/15/} was found to be meant for the construction of Greenfield Hydro Power plant of capacity 2x60MW= 120MW

Criteria No.	Criteria as per Methodology ACM0002, version 16	Project Eligibility	Means of Validation
	(e) Involve a replacement of (an) existing plant(s)/unit(s).	a Greenfield power plant (new grid connected renewable power plant (hydropower) at a site where no renewable power plant was operated prior to the implementation of the project activity).	and thus accepted. Further the information was also found to be consistently mentioned in the Feasibility Report prepared by TCE Consulting Engineers Limited dated January 2008 ^{/12/} and thus accepted. This applicability criterion has been fulfilled.
2	<p>The methodology is applicable under the following conditions:</p> <p>(a) The project activity may include renewable energy power plant/unit of one of the following types: hydro power plant/unit with or without reservoir, wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit;</p> <p>(b) In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition projects the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion, retrofit, or rehabilitation of the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.</p>	<p>(a) The project activity involves installation of a hydro power plant using an existing reservoir/dam.</p> <p>(b) The project activity involves installation of a Greenfield power plant. Although using an existing reservoir/dam, no capacity additions, retrofits or replacements are involved, thus this condition is not applicable.</p>	<p>This has been checked by the assessment team and found to be consistent as the Assessment team found the construction of the power plant under process at the site and thus accepted. Further the EPC contract signed with Sinohydro Corporation Limited, China dated 16/11/2011^{/15/} was found to be meant for the construction of Greenfield Hydro Power plant of capacity 2x60MW= 120MW and thus accepted. Further the information also found to be consistently mentioned in the Feasibility Report prepared by TCE Consulting Engineers Limited dated January 2008^{/12/} and thus accepted.</p> <p>This applicability criterion has been fulfilled.</p>
3	<p>In case of hydro power plants, one of the following conditions shall apply:</p> <p>(a) The project activity is implemented in existing single or multiple reservoirs, with no change in the volume of any of the reservoirs; or</p>	<ul style="list-style-type: none"> The project activity is implemented in the existing reservoir (Itezhi Tezhi dam) and no change in reservoir volume is planned. Since the project activity does not imply the construction of a new dam or 	<p>The information related to project design was found to be consistently mentioned in the Feasibility Report prepared by TCE Consulting Engineers Limited dated January 2008^{/12/} and thus accepted.</p>

Criteria No.	Criteria as per Methodology ACM0002, version 16	Project Eligibility	Means of Validation
	<p>(b) The project activity is implemented in existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density calculated using equation (3), is greater than 4 W/m²; or</p> <p>(c) The project activity results in new single or multiple reservoirs and the power density, calculated using equation (3), is greater than 4 W/m²; or</p> <p>(d) The project activity is an integrated hydro power project involving multiple reservoirs, where the power density for any of the reservoirs, calculated using equation (3), is lower than or equal to 4 W/m², all of the following conditions shall apply:</p> <p>(i) The power density calculated using the total installed capacity of the integrated project, as per equation (4), is greater than 4 W/m²;</p> <p>(ii) Water flow between reservoirs is not used by any other hydropower unit which is not a part of the project activity;</p> <p>(iii) Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m² shall be:</p> <p>a. Lower than or equal to 15 MW; and</p> <p>b. Less than 10 per cent of the total installed capacity of integrated hydro power project.</p>	<p>increase in existing dam volume, but rather utilization of the existing dam, power density is not considered.</p> <ul style="list-style-type: none"> The project activity does not involve an integrated hydro power project. 	<p>This applicability criterion is not applicable since the project design does not involve construction of any new dam.</p>
4	<p>In the case of integrated hydro power projects, project proponent shall:</p> <p>(a) Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute to the generation capacity of</p>	<p>The project activity will use the existing single reservoir, not multiple reservoirs. Thus not applicable</p>	<p>The project design information was checked from the Feasibility Report prepared by TCE Consulting Engineers Limited dated January 2008^{12/} criteria were found to be not applicable.</p> <p>This applicability criterion is</p>

Criteria No.	Criteria as per Methodology ACM0002, version 16	Project Eligibility	Means of Validation
	the integrated hydro power project; or (b) Provide an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs. The purpose of water balance is to demonstrate the requirement of specific combination of reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability in different seasons to optimize the water flow at the inlet of power units. Therefore this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum five years prior to implementation of CDM project activity.		not applicable since the project design does not involve construction of any new dam and it will be developed on the existing Itezhi Tezhi dam on Kafue river in Zambia, which include a single reservoir.
5	The methodology is not applicable to: (a) Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site; (b) Biomass fired power plants/units.	<ul style="list-style-type: none"> The project activity involves the installation of new hydropower plant and does not involve switching from fossil fuels to renewable energy sources at the site of the project. The project activity is the development, installation and operation of a hydropower plant and no biomass fired power plants are involved. 	<p>The project design information was checked from the Feasibility Report prepared by TCE Consulting Engineers Limited dated January 2008^{/12/} criteria were found to be not applicable.</p> <p>The proposed project activity involves hydro power generation thus this applicability criterion is not applicable.</p>
6	In the case of retrofits, rehabilitations, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, that is to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual	The project involves the installation of new hydro power plant, and does not involve retrofits, replacements, or capacity additions. Not applicable	<p>The project design information was checked from the Feasibility Report prepared by TCE Consulting Engineers Limited dated January 2008^{/12/} criteria were found to be not applicable.</p> <p>The proposed project activity involves implementation of a Greenfield 120 MW hydro power generation plant thus this applicability criterion is not applicable.</p>

Criteria No.	Criteria as per Methodology ACM0002, version 16	Project Eligibility	Means of Validation
	maintenance"		
7	In addition, the applicability conditions included in the tools referred to below apply	<p>No such applicability condition in the tools used for the project.</p> <ul style="list-style-type: none"> • Tool for the demonstration and assessment of additionality (version 07.0.0.)^{/21/} • Combined tool to identify the baseline scenario and demonstrate additionality (version 05.0.0.)^{/22/} • Tool to calculate project or leakage CO2 emissions from fossil fuel combustion (version 02)^{/23/} <p>The methodology chosen also references the following tools, but these have not been used for this proposed CDM project for the following reasons:</p> <ul style="list-style-type: none"> • Tool to calculate the emission factor for an electricity system: not relevant as emission factor used is referenced from the Standardized baseline entitled "Grid emission factor for the Southern African power pool" (version 01.0)^{/24/} • "Tool to determine the remaining lifetime of equipment"^{/25/}: this tool is used for project activities which involve the replacement of existing equipment with new equipment or which retrofit existing equipment as part of energy efficiency improvement activities, which is not the case for this proposed CDM project. • "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period": this tool is relevant at the renewal of a 	<p>All applicability criteria of the tools mentioned were checked and found to be correctly being included and thus accepted.</p> <p>This is noteworthy that the additionality for the proposed project activity has been demonstrated based on the Tool for the demonstration and assessment of additionality (version 07.0.0.)^{/21/}</p>

Criteria No.	Criteria as per Methodology ACM0002, version 16	Project Eligibility	Means of Validation
		crediting period, which is not the case for this proposed CDM project.	

Based on the above discussion, the validation team confirms that the proposed CDM project activity meets all the applicability conditions stipulated in the selected methodology ACM0002, version 16^{26/}.

The project qualifies as a large scale CDM project activity and hence it has appropriately adopted the approved large scale methodology ACM0002, version 16.

Thus in accordance with para 81 of project standard, version 7 and para 75 VVS, version 7.0^{10/} the applicability of the methodology had been validated by the assessment team and found to be appropriate.

Discussion of CAR/CL:

The PP was requested to refer, quote and apply the methodology (and the tools) correctly by comparing it to the latest available tools throughout the PDD as per requirement of VVS para 71 version 3.0 valid at the time of site visit. The approved methodology was found to be applicable to the project activity. However, it was not clearly mentioned how the conformance with each criterion has been met in particular towards the documentary evidence. The PP is requested to clarify the same as per VVS para 76 of VVS 3.0 valid at the time of site visit. Further, the PP was requested to clarify how the monitoring of diesel on mass basis is appropriate. Also, how the values of the parameters like $NCV_{i,y}$ and $EF_{CO2,i,y}$ is appropriate considering the upper limit at 95% confidence level was not considered. **CAR#04** was raised in this regard.

In response, the PDD version 2.0 dated 11/08/2014 was provided by the PP and the same was checked and the applied methodology and the tools was found to be correctly applied and included in the PDD.

The PDD version 02 dated 11/08/2014 was checked and found to be covering the aspects of versions of tools related to the methodology ACM0002 version 15.0 and thus accepted. Further the applicable criteria for the methodology was found to be justified with regard to the project activity and thus accepted as per provisions of para 78 of VVS 7.0.

Further, the PP clarified that the values of the parameters $NCV_{i,y}$ and $EF_{CO2,i,y}$ were considered from IPCC default upper limit values at 95% confidence level was considered and the same has been corrected in the revised PDD and revised ER spreadsheet. PP has also included density of diesel as the ex-post monitoring parameter since the fuel consumption in the DG sets will be measured in volume basis. Further, The PP have also corrected the start date of the crediting period and has now included the text "or the date of registration whichever is later" which was found accepted.

Thus, **CAR#04** was thus closed out.

4.6 Project Boundary

According to ACM0002, version 16.0, the PP has correctly chosen the project boundary which includes the project power plant/unit and all power plants/units connected physically to the electricity system that the CDM project power plant is connected to. The proposed hydropower plant will be connected to the South African Power Pool (SAPP) grid system thus the project's electricity system is the SAPP electricity grid. The project boundary therefore includes the project power plant and the transmission line to evacuate power to SAPP grid system, and all power plants connected physically to the SAPP electricity system.

The spatial boundaries and system boundaries of the project activity were also checked during the validation site and found consistent. This was further cross checked at the site and found to be consistent in line with para 88, VVS, version 7.0. Thus, it was confirmed by the assessment team that the physical delineation of the proposed project activity and other relevant project and baseline emission sources covered in the methodology are included within the project boundary for the purpose of calculating project and baseline emissions for the proposed project activity.

The same was found to be in line with para 84 of VVS, version 7.0 and hence is accepted.

Source		Gas	Included?	Justification/Explanation
Baseline scenario	CO ₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity	CO ₂	Yes	Main emission source
		CH ₄	No	Minor emission source
		N ₂ O	No	Minor emission source
Project activity	CO ₂ emissions from combustion of fossil fuels for electricity generation using back-up generator	CO ₂	Yes	Main emission source
		CH ₄	No	Minor emission source
		N ₂ O	No	Minor emission source
	For hydro power plants, emissions of CH ₄ from the reservoir	CO ₂	No	Minor emission source
		CH ₄	No	Minor emission source
		N ₂ O	No	Minor emission source

The selected sources and gases as indicated above are justified for the project activity, with reference to the applied methodology. It was verified through physical inspection of the project activity site.

The schematic representation of the project boundary included under section B.3 of the final version of the PDD^{1/} correctly describes the boundary of the project activity.

The same was found to be in line with para 85-86 of VVS, version 7.0^{10/} and hence is accepted. There are no potential GHG emissions that contribute more than 1% of overall expected average annual emission reductions. This is in line with the requirement of para 89 of VVS 7.0

4.7 Baseline Selection

The approved large scale methodology ACM0002, version 16 has been applied to the proposed project activity considered. The proposed project activity involves implementation of a grid connected Greenfield 120 MW Hydro power plant.

As per the methodology ACM0002 version 16 clause 5.2.1. **Baseline scenario for Greenfield power plant:** *"If the project activity is the installation of a Greenfield power plant, the baseline scenario is electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system"*

In the initial version of the PDD version 01 dated 19/11/2012, the PP had considered the production of equivalent amount of electricity in the South African Power Pool (SAPP) grid system based on the information available at that time from the document Burian, M., Zhou, P.; Masawi, F., Yamba, F. and Baumgard, F. (2012) Analysis of grid emission factors for electricity sector in sub Saharan Africa: The case of the Southern African Power Pool, UNEP Risoe and Validation of the SAPP grid emission factor, Carbon Check^{12/}. However during the course of validation of the project the Standardized baseline of Grid emission factor for South African Power Pool (ASB001 version 01.0) was approved on 31/05/2013 and based on the revision of the baseline for the project, the project was re-webhosted at UNFCCC from 19/08/2014 until 17/09/2014.

The PP has applied the approved Standardized baseline of Grid emission factor for South African Power Pool (SAPP) (ASB001 version 01.0)^{/24/} for the determination of the baseline for the project. In conformance with SAPP the baseline scenario has been correctly identified by the PP as production of the equivalent amount of electricity from new generation sources within the SAPP grid system as reflected in the combined margin calculations.

The value of Operating Margin emission factor (tCO₂/MWh) of 0.9958 was found to be correctly adopted from the Standardized baseline: Grid emission factor for the Southern African power pool (version 01.0)^{/24/} and thus accepted.

The value of the Build Margin emission factor (tCO₂/MWh) of 0.9331 was found to be correctly adopted from the Standardized baseline: Grid emission factor for the Southern African power pool (version 01.0) and thus accepted.

The value of the Combined Margin emission factor (tCO₂/MWh) of 0.9644 was found to be correctly adopted from the Standardized baseline: Grid emission factor for the Southern African power pool (version 01.0) and thus accepted.

The net amount of electricity to be dispatched to the Grid of SAPP was correctly adopted as 611,000 MWh per annum based on capacity of 120 MW as mentioned in the Detailed Project Feasibility Report for Itezhi Tezhi Hydro Power prepared by TCE Consulting Engineers Limited and dated January 2008^{/12/}. Further, the DPR was checked and the calculation of 611,000 MWh was found to be based on assumptions of rated discharge, head loss turbine efficiency which were all done during the study of the feasibility of the power plant and thus the calculation of the Gross Electricity Generation was found to be consistent and thus accepted.

Discussion of CAR/CL:

The PP was requested to clarify why the updated version of the tool to calculate emission factor of electricity system, version 3.0, EB70, annex22 has not been applied for calculation of emission factor. PP was requested to provide the emission reduction excel sheet for the calculation of the emission reduction. **CAR#05** was raised in this regard.

In response the PP clarified that the standardized baseline entitled "Grid emission factor for the Southern African power pool" version 01.0. (CDM EB73, annex 3) is used as the basis for calculation of the emission factor, and reference to the tool to calculate emission factor of electricity system is no longer relevant. The emission reduction sheet provided by PP was checked and found to be consistent with the ER mentioned in the PDD version 04 dated 03/11/2014 and thus accepted. **CAR#05** was closed out as per the requirement of para 90 and para 115 of VVS 7.0.

4.7.1 Additionality of a project activity

The proposed project activity is a large scale project and the additionality of the project activity was demonstrated on the basis of the "Tool for the demonstration and assessment of the additionality", Version 07.0.0, approved by the CDM EB 70 and required by the methodology ACM0002, Version 16.0.

PP has adopted the step-wise approach for demonstrating and assessing the additionality of the project activity as follows:

Step 0: Demonstration whether the proposed project activity is the first-of-its-kind

This step is optional and not used for this project.

Step 1: Identification of alternatives to the project activity consistent with current laws and regulations

The aim of this step is to define realistic and credible alternatives to the proposed project activity through the following sub-steps:

Sub-step 1a: Define alternatives to the project activity:

PP has chosen the following alternatives to the project in the absence of the proposed project activity. These alternatives were found to be realistic and credible alternatives to provide outputs comparable to the project activity are:

1. The project activity undertaken without being registered as a CDM activity.
2. Construction of a new power plant using other renewable power sources with equivalent electricity output to be connected to SAPP grid system.
3. Construction of new thermal fossil fuel power plants with equivalent electricity output to be connected to SAPP grid system.
4. Operation of SAPP grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system” (baseline scenario).

Sub-step 1b: Consistency with mandatory laws and regulations:

The alternatives identified in sub-step 1a above were found to be in compliance with the rules and regulations in the SAPP member countries and as per the Standardized baseline of Grid emission factor for South African Power Pool (SAPP) (ASB001 version 01.0). These options are already implemented in the member countries. The proposed project activity is in competition with several other sources of energy to meet the growing demand in SAPP grid member countries. Thus the mandatory laws and regulations were found to be correctly being followed by all the alternatives as identified in the step above.

Step 2: Investment analysis

This step is optional and not used for this project.

Step 3: Barrier analysis

PP has demonstrated barriers likely to affect the implementation of the proposed project activity as per the requirements of “Guidelines for objective demonstration and assessment of barriers”, version 01, EB 50, Annex 13.

PP has mentioned that Zambia is considered to be a “Least Developed Country” (LDC). This was checked with the UN list of Least Developed Countries available at the webpage <http://unctad.org/en/Pages/ALDC/Least%20Developed%20Countries/UN-list-of-Least-Developed-Countries.aspx>^{/28/} and found to be consistently mentioned as LDC by the UN and thus accepted. The last hydropower plant to be commissioned in Zambia dates from 1976 (Kariba North), over 35 years prior to implementation of the project activity. This was cross checked with the information traceable through the weblink <https://clairemchapman.wordpress.com/2011/08/31/north-kariba-hydro-power-station-zambia/>^{/29/} and found to be consistently mentioned and thus accepted.

PP mentioned that Zambia is classified by the UN as being a “landlocked developing country” (LLDC). This information was checked information traceable through the web link <http://unctad.org/en/Pages/ALDC/Landlocked%20Developing%20Countries/LLDCs-Map.aspx>^{/30/} and found to be consistent and thus accepted. Based on the fact Zambia is considered as a landlocked developing country, the justification for lack of territorial access to the sea, remoteness and isolation from world markets and high transit costs continue to impose serious constraints on the overall socio-economic development of landlocked developing countries was accepted. Further the economic performance of landlocked developing countries reflects the direct and indirect impact of geographical situation on key-economic variables and landlocked developing countries are generally among the poorest of the developing countries, with the weakest growth rates, and are typically heavily dependent on a very limited number of commodities for their export earnings (copper and maize in the case of Zambia) was found to be justifiable and thus accepted.

This is found to be justified and accepted as per the exclusive provision of projects in Least Developed Countries as specified under paragraph 10: Guideline 7 of EB 50 Annex 13^{/31/}.

PP has done the analysis of barriers to project implementation, with specific reference to “Guideline 7” of the EB 50 Annex 13.

Sub-step 3a: Identify barriers that would prevent the implementation of the proposed CDM project activity

PP demonstrated the following barriers to the project activity:

Investment barriers

a. Investment barrier – financing of similar activities

PP has demonstrated Investment Barrier: The PP justified that the project was being undertaken by a special purpose vehicle Itezhi Tezhi Power Corporation (ITPC) under Public-Private-Partnership mode which is a joint venture by TATA Africa (a private company) and ZESCO Ltd (public electricity utility company in Zambia). The ownership of the company ITPC was checked by the assessment team during the site visit and based on the check of the Final Asset Valuation Report of ITPC prepared by Fieldstone, Dewey & LeBoeuf, Development Bank of South Africa and Scott Wilson^{/32/} and it was found that ITPC is owned by TATA Africa and ZESCO Ltd and will develop the project on a build, own, operate and transfer (BOOT) basis. This was found to be consistent and thus accepted.

PP justified that the operation of ZESCO Ltd was commercialized and this was checked with the document Kbaki, J., Case study in corporate governance: Industry focus-electricity, SOE network for Southern Africa, June 2009, Maputo^{/33/} and found to be correct and thus accepted. The implication of the same was thus justified because the government may not provide 100% grants to ZESCO Ltd to implement a power project like it was in the past, and instead ZESCO Ltd will be required to mobilize finance to cover a large portion of investment costs. Moreover, the justification for the fact that ZESCO Ltd had to approach the lenders from beyond Zambia for loans for the project was found to be justified as per the public domain information available through the web-article “Zambia Signs Energy Sector Agreement for Itezhi Tezhi Power Generation Project”, dated 16/04/2014 (<http://www.afdb.org/en/news-and-events/article/zambia-signs-energy-sector-agreement-for-itezhi-tezhi-power-generation-project-13002/>)^{/59/} and as there has been no implementation of hydropower plants since 1976 and thus accepted. Thus the logic for the grants or other non-commercial finance terms essential for similar projects was found to be justified and thus accepted.

This was found to be in line with the requirement of paragraph 4 under Guideline 1 of EB 50 Annex 13 and accepted as per the exclusive provision of projects in Least Developed Countries as specified under paragraph 10: Guideline 7 of EB 50 Annex 13.

b. Investment barrier – access to capital

PP justified that in 1977 a pre-feasibility study was done by Sweco for the implementation of the Itezhi Tezhi Hydro Power. This was checked with the Project Concept Note, 2011, prepared by AfDB^{/34/} and found to be correct information and thus accepted. The feasibility study prepared in 1999 by Harza for ITPC Ltd^{/35/} and the feasibility report for Itezhi Tezhi Hydro Electric Project (2 x 60 MW) by TEC Consulting Engineers Ltd^{/12/} were checked and confirmed the fact that feasibility was done but no work on ground was possible due to non-availability of funding. The incorporation certificate of ITPC, 2007 was checked and found to be consistent information in terms of special purpose vehicle, which was formed in 2007. Ownership of ITPC was checked and TATA Africa (a private company) and ZESCO Ltd (public electricity utility company) were found to be 50:50 owner of the company. Further, the model of incorporation of the Hydro Power Project was found to be on a build, own-operated and transfer (BOOT) basis. Equity of the company was found to be provided by ZESCO Ltd and TATA Africa on a 50:50 sharing basis which was checked with the financial ITT Fin Model v72 dated 26/03/2008^{/36/}. The investment required for the power plant and transmission line layout was found to be in the tune of USD 230 million which was validated based on the publicly available web-based information such as Itezhi-Tezhi Hydro Power and Transmission Line Project – IRS (at <http://www.eu-africa-infrastructure-tf.net/activities/grants/itezhi-tezhi-hydro-power-and-transmission-line-project.htm>)^{/60/}; Alstom wins bid for Zambia's Itezhi-Tezhi hydropower plant (<http://www.hydroworld.com/articles/2012/02/alstom-wins-bid-for.html>)^{/61/}; World Bank Private Participation in Renewable Energy Database, Project Information - TATA Itezhi-Tezhi HPP (<http://ppi-re.worldbank.org/data/project/tata-itezhi-tezhi-hpp-5927>)^{/62/}; and Itezhi Tezhi Hydroelectric Project, EIA - Addendum (http://www.eib.org/attachments/pipeline/20080263_eia2_en.pdf)^{/63/} and the investment from ZESCO and TATA Africa was not found to be enough to cover the entire cost of the project through equity funding. Thus the PP had to consider for loan from financial institutions. The cost of the project was further

cross checked with the information on the Detailed Project Feasibility Report prepared by TCE Consulting Engineers Limited^{/12/} and found to be consistent and thus accepted. This information justified the requirement of loan and the inability of the PP to undertake the project based on equity funding.

The lending scenario in Zambia was demonstrated by the PP to be at a poor rating of B+ as rated by Fitch and Standard in 2011^{/37/}. The PP justified that a B+ rating was over two rungs below investment grade, and indicates a “speculative grade” investment which lies between BB (Less vulnerable in the near-term but faces major ongoing uncertainties to adverse business, financial and economic conditions) and B (more vulnerable to adverse business, financial and economic conditions but currently has the capacity to meet financial commitments). This was checked and confirmed to be correctly adopted from the Fitch and Standard in 2011 report. Further the PP justified that with recent and current global financial crisis, the project was under significant vulnerability to financial and economic conditions translates to a reticence on behalf of investors to invest in projects in Zambia and thus with the country’s poor rating private capital, the international capital markets would not be available for such an investment, due to which the debt financing was being provided by multilateral financing institutions. This was found to be correctly mentioned as the project was found to be financed through international multilateral funding which was checked with the Zambia Development Agency Investment License no. ZDA/304/10/2008 dated 08/10/2008^{/38/} for the amount of USD 167 million investments through Foreign (outside of Zambia) Capital.

The PP has further justified that the loans from local banks to finance the proposed project activity was a challenge in particular to private sector as the cost of borrowing money in Zambia was too high and inconsistent with the low level of inflation in the country that may be interpreted to high interest rate that becomes a burden to borrowers to service the loan. This was checked with the information traceable through the web article “Coast of borrowing in Zambia too high – Chikwanda” (<http://www.ukzambians.co.uk/home/2011/10/03/coast-of-borrowing-in-zambia-too-high-%E2%80%93-chikwanda/>)^{/39/} and found to be consistent and thus accepted.

The lending rates in the SAPP countries in 2010 was checked from the www.theglobaleconomy.com/compare-countries/^{/40/} (At the link, Lending Interest rate under Financial system has to be selected as indicator along with the countries of Zambia, Angola, Botswana, Lesotho, Mozambique, Namibia and South Africa to generate the trend and rates) and Zambia was found to be at 20.92% interest rate, the second highest after Angola which was at 22.54%. Other countries in terms of lending rates were Botswana at 11.46%, Lesotho at 11.22%, Mozambique at 16.26%, Namibia at 9.72% and South Africa at 9.83%. Further, the trend of the interest rate for SAPP country from 2005-2010 was checked and was found to be fluctuating and Zambia was found to have the highest interest rate ranging from 28% to 20% during the period. This was found to be a barrier in terms of the lending of money through local funding agencies.

PP further added that the inflation rate (percent change in the Consumer Price Index) improved over recent years for all SAPP countries and reached to a single digit figure in 2010. Zambia was at high inflation rate compared to other countries sharing the SAPP grid network. This information was found to be correctly adopted from the information related to economic indicators traceable through the weblink <http://www.theglobaleconomy.com/compare-countries/>^{/40/} (At the link, Inflation has to be selected as indicator along with the countries of Zambia, Angola, Botswana, Lesotho, Mozambique, Namibia and South Africa to generate the trend and rates) and was cross checked with the information on Zambia Inflation Rate 2005-2014 traceable through the web site: <http://www.tradingeconomics.com/zambia/inflation-cpi/>^{/41/} and found to be correctly mentioned. In 2010 the inflation for some countries was: Zambia (8%), Mozambique (12.7%), Malawi (7.41%), Botswana (6.95%), Swaziland (4.51%), Namibia (4.47%), South Africa (4.27%) and Lesotho (3.58%). This was checked and found to be correct as per the information on Zambia Inflation Rate 2005-2014 traceable through the web link <http://www.tradingeconomics.com/zambia/inflation-cpi/> and thus accepted. PP justified that due to High inflation rate, cash flows of the project were negatively affected and the ability of the project owner to service the debt was at a risk. Thus, lending from foreign capital was inevitable although the PP was to sell the electricity in Zambia with recovery of price for electricity in local currency. The justification for the unpredicted and fluctuating inflation rate in Zambia and the review and adjustment of the tariffs to reflect respective inflation was found to be a challenge faced by the PP with the size of the project as it requires the acceptance of the regulation authority and wide stakeholders. Due to high and unpredictable inflation project developers were found to be at a risk of repayment of loan in foreign currency while selling the electricity at local rates.

Based on the above justification the required debt part of investment (USD 167 million USD ^{/59/}) would not have been provided from any of the local lending institutions, given the country's low investment rating and the high rate of interest with high risk of non-recovery of the loan, this was found to be justified and accepted. Also, the risk of undertaking the loan from foreign investors was found to be justified and the perceived risks associated with the project financing were also found to be correctly justified by the PP.

Thus the aspect related to access to finance barrier for the project capital investment in Zambia considering the first Public-Private-Partnership model arrangement in Zambia and obstacles in access to finance for a private entity due to high lending rate in the domestic market, high inflation rate and poor credit rating which lead to the unfavourable investment climate in Zambia is found to be justified. This has been further accepted as per the exclusive provision of projects in Least Developed Countries as specified under paragraph 10: Guideline 7 of EB 50 Annex 13.

Sub-step 3b: Show that the identified barriers would not prevent the implementation of at least one of the alternatives (except the proposed project activity)

Investment barriers

a. Investment barrier – financing of similar activities

Considering that the baseline of the project has been considered based on the SAPP, the financing of the project in the SAPP region was compared by the PP. It was found that similar activities in other countries whose electricity grid is part of the SAPP grid have historically had access to sources of funding other than grants or other non-commercial finance terms. The following scenarios in different countries were checked:

- South Africa: South Africa Public Private Partnership (PPP) was found to be from 1997 when the cabinet approved the appointment of an inter-departmental task team to develop a package of policy, legislative and institutional reforms to create an enabling environment for PPPs. This information was checked with the <http://www.ppp.gov.za/Pages/About.aspx>^{/42/} and found to be correctly mentioned. PPP projects registered in the energy sector are under development in waste to energy and bio-renewable energy which was checked with the website <http://www.ppp.gov.za/Lists/PPP%20Project%20List%20Master/Energy1.aspx>^{/43/} and found to be correct and thus accepted.
- Namibia: In Namibia the involvement of the private sector in the energy sector started in 1996 when a private company, Northern Electricity (NE), was contracted to operate the existing distribution infrastructure in the north of the country although it did not own any infrastructure apart from being responsible for all costs and revenues associated with the business. This was checked with the information in the report by Clark, A.; Davis, M.; Eberhard, A.; Gratwick, K.; and Wamukoya, N. (2005), *Power sector reform in Africa: assessing the impact on poor people*, a study managed by the graduate school, University of Cape Town for ESMAP/World Bank^{/44/} and found to be correct and thus accepted. It was found that the PPP power project in Namibia is the Tsumkwe solar/diesel hybrid system as per the information in the http://www.drfn.info/docs/drfn/2010-2011_DRFN_Annual_Report.pdf (page 21)^{/45/} implemented in partnership between the Desert Research Foundation of Namibia (DRFN), the Government of the Republic of Namibia through the Otjozondjupa Regional Council, NamPower and the European Union and found to be consistent with the information in the webpage and thus accepted.
- Mozambique: In Mozambique, Cahora Bassa power plant (2,075 MW) owned by the Portuguese private company HCB (82 %) and the Government of Mozambique (18%). Cahora Bassa is the largest single power plant in the Southern Africa region was checked with the http://en.wikipedia.org/wiki/Cahora_Bassa_Dam^{/46/} and further cross checked with the <http://www.sapp.co.zw/>^{/47/} and found to be consistent and thus accepted.

b. Investment barrier - access to capital

- The PP demonstrated that the access to capital in Zambia was lower than any other country in the SAPP region. For South Africa, the PP justified that the report of World Bank's "Doing business (2012)", Doing business in a more transparent world, World Bank and IFC accessed from <http://www.doingbusiness.org/~media/FDPKM/Doing%20Business/Documents/Annual->

[Reports/English/DB12-FullReport.pdf](#)^{/48/} showed that South Africa has a good investment climate. Out of 183 countries ranked, South Africa's position was: ease of doing business-35, starting a business-44, protection investors-10 and getting credit-1. The justification was found to be acceptable as it was provided by World Bank a leading financial institution.

- Further in comparison to Zambia's B+ credit rating, other countries in the SAPP grid system are rated better as per the information in <http://www.guardian.co.uk/news/datablog/2010/apr/30/credit-ratings-country-fitch-moodys-standard#data>^{/49/} which was found to be correctly demonstrated and thus accepted. The good credit rating would be attracting the investors for the countries like Botswana which was rated by Standard and poor as A-, South Africa by both companies as BBB+, Namibia by Fitch as BBB-, and Angola by both companies as BB- thus creating competitive advantages compared to Zambia. This was checked with the information on <http://www.guardian.co.uk/news/datablog/2010/apr/30/credit-ratings-country-fitch-moodys-standard#data> and further cross checked with http://www.washingtonpost.com/blogs/blogpost/post/standard-and-poors-credit-rating-for-each-country-of-the-world-map/2011/08/09/gIQAg4Qj4I_blog.html^{/50/} and thus accepted. Further the PP justified that in the report of Doing Business Economy ranking as provided in <http://www.doingbusiness.org/rankings> June 2011, Zambia was found to be having investment attractions similar to some middle income countries but with status as a LDC and fluctuating rate of inflation investors would not find investment in Zambia to be lucrative.

Based on the above information PP correctly concluded that that access to capital is not a barrier to implement at least some of the identified alternatives in some other SAPP countries. This was found to be thus justifying that there is barrier in access to capital in Zambian scenario for the project and thus the project faces barrier in line with the requirements of EB 50 Annex 13 in terms of access to capital.

Based on the above demonstration, the project was found to be additional and the same has been accepted as per the exclusive provision of para 10 of EB 50 Annex 13 wherein the project faces barrier in the form of being into a LDC country. Further the project faces barrier in investment wherein the investment scenario of Zambia would not allow local lenders to invest into the project and also due to high rates of interest and fluctuating inflation, the investment from the foreign countries was also not a feasible option which has been demonstrated correctly as per the requirement of para 1 of EB 50 Annex 13 and thus accepted.

Further based on the above, PP justified that alternative scenario 1 (the project activity undertaken without being registered as a CDM activity) faces significant investment barriers, whereas scenarios 2, 3 and 4 which includes the baseline scenario, do not face similar barriers.

Discussion of CAR/CL:

PP was requested to clarify the additionality of the project stepwise as per the Tool for the demonstration and assessment of additionality VVS 3.0 Para. 124 125a-b/126. **CAR#07** was raised.

In response, the stepwise assessment of the Additionality was done in the PDD version 02 dated 11/08/2014. Also, the demonstration of additionality in terms of barrier analysis for financial barrier, assess to finance barrier, technological barrier and other barriers were found to be done stepwise and thus accepted. Thus, **CAR#07** was closed out as per the requirement of VVS version 7.0 para 112-117.

CAR#06 was raised, since the webhosted PDD had not demonstrated all the assumptions and data used by the project participants for project additionality demonstration including their references and sources as per para 94 and 95 of the VVS 3.0. Furthermore PP has not specified the start date of the project activity as per the definition of project start date EB 70 Annex 7. PPA date was found to be 08/04/2011 as compared to 05/05/2011 in the PDD. Request for LoA from DNA was on 21/11/2012 whereas PDD mentioned as 22/03/2012. It was also not clear from the webhosted PDD, when the prior CDM consideration was intimated to DNA of Zambia as per the requirements of VVS para 105 and EB 65 Annex 4.

In response to **CAR#06**, PP has withdrawn the discussion financial analysis and has demonstrated the project additionality with regard to the barrier analysis. The final PDD has specified the references and sources related to the assumptions and information used for demonstration of barrier analysis, which were found to be traceable and justified. The start date of the project activity of 08/04/2011 was found to be consistent with the requirement of EB 70 Annex 7 definition of start date and hence accepted. Date of PPA

was found to be corrected to 08/04/2011 in the PDD. A prior CDM consideration intimation detail to the DNA of Zambia along with details for the request for LOA to the host country DNA was found to be consistently mentioned in the final PDD. Hence **CAR#06** was closed out.

4.7.2 Prior Consideration of the Clean Development Mechanism

The start date of the proposed CDM project activity has been mentioned in the PDD^{/1/} as 08/04/2011 which is the date of the PPA signing of ITPC with ZESCO^{/16/}. The agreement was checked for the date and was found consistent with that mentioned in the PDD. This has been considered as the start date for the project activity in accordance with para 106 of VVS, version 7^{/10/} - which defines the start date of a CDM project activity as: *"the earliest date at which either the implementation or construction or real action of a project activity begins"*.

The reported project start date has found to be in line with the definition provided under Glossary of CDM terms, version 7, EB 70 Annex 7, being the earliest date at which the implementation of the project activity begins and the date on which the project participant has committed to expenditures related to the implementation or related to the construction of the project activity. It was thus accepted. This was validated in accordance to paragraph 112 of VVS, version 7.0^{/10/}.

The CDM project chronology and supporting documentary evidence have been reviewed and prior CDM consideration for the proposed project activity has been demonstrated in the following milestone activities as per the requirement of paragraph 111 of VVS, version 7.0^{/10/}. The start date of the proposed CDM project activity is 08/04/2011^{/16/} which is after the date of 02/08/2008 and hence project participants shall inform the host Party's designated national authority (DNA) and the secretariat of their intention to seek CDM status in accordance with the CDM Project Cycle Procedure in line with paragraph 8 of the Project Standard, version 7.0^{/20/}.

The PP has sent emails on 03/05/2011^{/51/} informing the DNA (Zambia)^{/51/} and the UNFCCC^{/52/} respectively, about the commencement of the project activity and intention to seek CDM status. Please refer table below for means of validation of the evidences

Table: Assessment on CDM Consideration

CDM Project milestone activities	Timeline	Means of validation for Documentary evidences
Start Date of Project Activity		
Power Purchase Agreement approved by Energy Regulatory Board.	08/04/2011	PPA between the ITPC and the ZESCO dated 08/04/2011 ^{/16/} . The copy of the PPA was checked during the site visit and the context of the start date of the project activity also found consistent based on the interview conducted with the PP (Mr. Kedar Prasad (Deputy Director ITPC) during the site visit as listed in Section 6 of this report.
Notification to UNFCCC and MOEF (DNA Zambia)		
Initial Prior intimation to UNFCCC and DNA	03/05/2011	The email correspondences dated 03/05/2011 ^{/51/, /52/} made to CDM prior consideration submitted to the UNFCCC and to DNA Zambia on 03/05/2011 for initial intimation of CDM consideration. Archived copy of the email communications dated 03/05/2011 ^{/51/, /52/} made to UNFCCC and Host Country DNA by the PP on CDM consideration for the proposed project activity was checked in original during the site visit and found to be consistent as per the requirement of Para 113 of VVS 7.0 and thus accepted.

		<p>Section on UNFCCC website http://cdm.unfccc.int/Projects/PriorCDM/notifications/index.html on prior consideration of CDM was cross checked with the project title “Itezhi Tezhi Hydro Power”.</p> <p>This was found to be consistent with para 113 of VVS 7.0 and within 6 month of start date of the project, hence accepted.</p>
PDD web hosted for global stakeholder consultation process	09/04/2013 – 08/05/2013	http://cdm.unfccc.int/Projects/Validation/DB/JSKW4GO66RDFEEUM74A7GV3Q6HUNK/view.html
PDD web hosted for global stakeholder consultation process	19/08/2014 – 17/09/2014	http://cdm.unfccc.int/Projects/Validation/DB/1N9TEETJKA PWPS3V4Z0073C4JXRVN8/view.html

4.7.3 Identification of alternatives

The proposed project activity has demonstrated the additionality of the project through step wise assessment of additionality based on the “Tool for the demonstration and assessment of the additionality”, Version 07.0.0. The PP had identified correctly all the alternative scenarios to the proposed project activity which can be the baseline scenario.

Step 1: Identification of alternatives to the project activity consistent with current laws and regulations

The aim of this step is to define realistic and credible alternatives to the proposed project activity through the following sub-steps:

Sub-step 1a: Define alternatives to the project activity:

PP has chosen the following alternatives to the project in the absence of the proposed project activity. These alternatives were found to be realistic and credible alternatives to provide outputs comparable to the project activity are:

1. The project activity undertaken without being registered as a CDM activity.
2. Construction of a new power plant using other renewable power sources with equivalent electricity output to be connected to SAPP grid system.
3. Construction of new thermal fossil fuel power plants with equivalent electricity output to be connected to SAPP grid system.
4. Operation of SAPP grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system” (baseline scenario).

Sub-step 1b: Consistency with mandatory laws and regulations:

The alternatives identified in sub-step 1a above were found to be in compliance with the rules and regulations in the SAPP member countries and as per the Standardized baseline of Grid emission factor for South African Power Pool (SAPP) (ASB001 version 01.0). These options are already implemented in the member countries. The proposed project activity is in competition with several other sources of energy to meet the growing demand in SAPP grid member countries. Thus the mandatory laws and regulations were found to be correctly being followed by all the alternatives as identified in the step above.

Refer to section 4.7.1 for demonstration of additionality and stepwise assessment of each alternative.

4.7.4 Investment analysis

The proposed project activity has demonstrated barrier analysis as per the requirement of EB 50 Annex 13 and no investment analysis have been done.

4.7.5 Barrier analysis

According to Step 2 of “Tool for the demonstration and assessment of the additionality”, Version 07.0.0, approved by the CDM EB 70 and required by the methodology ACM0002, Version 16.0, the PP had carried out the barrier analysis correctly in accordance with “Guidelines for objective demonstration and assessment of barriers” (EB-50, Annex 13 Version 01). The PP had demonstrated the barrier as per clause 10 and clause 1 and the assessment team had checked the feasibility of the barrier as mentioned by the PP.

Detailed discussion of additionality/barrier analysis for the project has been done in section 4.7.1 above.

The above assessment was found to be in line with the requirements of para 132-133 of VVS 7.0.

4.7.6 Common practice analysis

The PP has demonstrated the Common Practice Analysis as a continuation of Steps involved in demonstrating additionality as per the “Tool for the demonstration and assessment of the additionality”, Version 07.0.0, approved by the CDM EB 70 and required by the methodology ACM0002, Version 16.0 and further from the “Guideline for Common Practice Analysis” version 3.1^{53/}. Since the project activity involves installation of a Greenfield large scale hydro, the measure for project activity was considered to be Renewable Energy Generation - Hydro.

The applicable geographical area has been considered as the entire boundary of Zambia by the PP to trace out similar projects in line with paragraph 9 of common practice analysis, version 3.1. The source of information has been the SAPP grid connection and was checked with the Analysis of grid emission factors for electricity sector in sub Saharan Africa: The case of the Southern African Power Pool, UNEP Risoe by Burian, M.; Zhou, P.; Masawi, F.; Yamba, F. and Baumgard, F. (2012)^{27/} and found to be consistent with the information adopted and consistent source of information. In order to compare Hydro project of a similar scale to the project activity, hydro projects located in the host country were identified and evaluated for similarity.

As per the step 1 of the common practice analysis, version 3.1 “calculate applicable capacity or output range as +/-50% of the total design capacity or output of the proposed project activity.” The PP had correctly considered all the hydro projects in Zambia which ranges from 60 MW to 180MW in line with the guideline.

S.No.	Hydro Project Name	Date of Commissioning	Installed Capacity(MW)	Validation Remark
1	Kariba North	1976	720	Capacity of the project was found to be beyond the $\pm 50\%$ of 60 to 180 MW range and thus correctly not considered. The Hydro project with date of commissioning and installed capacity was checked with the document South African Power Pool (SAPP) grid system based on the information available at that time from the Analysis of grid emission factors for

				electricity sector in sub Saharan Africa: The case of the Southern African Power Pool, UNEP Risoe by Burian, M., Zhou, P.; Masawi, F., Yamba, F. and Baumgard, F. (2012) and found to be consistently being mentioned as a part of submission for the Standardized baseline entitled "Grid emission factor for the Southern African power pool" (version 01.0) and thus accepted.
2	Kafue Gorge	1968	990	Capacity of the project was found to be beyond the $\pm 50\%$ of 60 to 180 MW range and thus correctly not considered. The Hydro project with date of commissioning and installed capacity was checked with the document South African Power Pool (SAPP) grid system based on the information available at that time from the Analysis of grid emission factors for electricity sector in sub Saharan Africa: The case of the Southern African Power Pool, UNEP Risoe by Burian, M., Zhou, P.; Masawi, F., Yamba, F. and Baumgard, F. (2012) and found to be consistently being mentioned as a part of submission for the Standardized baseline entitled "Grid emission factor for the Southern African power pool" (version 01.0) and thus accepted.
3	Victoria Falls	1950	108	Found to be within the range of 60 to 180 MW range with commissioning before the proposed project activity. The Hydro project with date of commissioning and installed capacity was checked with the document South African Power Pool

				(SAPP) grid system based on the information available at that time from the Analysis of grid emission factors for electricity sector in sub Saharan Africa: The case of the Southern African Power Pool, UNEP Risoe by Burian, M., Zhou, P.; Masawi, F., Yamba, F. and Baumgard, F. (2012) and found to be consistently being mentioned as a part of submission for the Standardized baseline entitled "Grid emission factor for the Southern African power pool" (version 01.0) and thus accepted.
4	Mulungushi	1955	47	Capacity of the project was found to be beyond the $\pm 50\%$ of 60 to 180 MW range and thus correctly not considered. The Hydro project with date of commissioning and installed capacity was checked with the document South African Power Pool (SAPP) grid system based on the information available at that time from the Analysis of grid emission factors for electricity sector in sub Saharan Africa: The case of the Southern African Power Pool, UNEP Risoe by Burian, M., Zhou, P.; Masawi, F., Yamba, F. and Baumgard, F. (2012) and found to be consistently being mentioned as a part of submission for the Standardized baseline entitled "Grid emission factor for the Southern African power pool" (version 01.0) and thus accepted.
5	Mini-hydro	1963	17.75	Capacity of the project was found to be beyond the $\pm 50\%$ of 60 to 180 MW range and thus correctly not considered. The Hydro

				<p>project with date of commissioning and installed capacity was checked with the document South African Power Pool (SAPP) grid system based on the information available at that time from the Analysis of grid emission factors for electricity sector in sub Saharan Africa: The case of the Southern African Power Pool, UNEP Risoe by Burian, M., Zhou, P.; Masawi, F., Yamba, F. and Baumgard, F. (2012) and found to be consistently being mentioned as a part of submission for the Standardized baseline entitled "Grid emission factor for the Southern African power pool" (version 01.0) and thus accepted.</p>
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The technology was checked during the site visit and it was found that Victoria Falls was using the technology of the proposed project activity.

Further the website of UNFCCC was checked for all projects of Zambia and none of the projects were found to be registered under UNFCCC hence the stepwise calculation done by the PP with Outcome of Step 1 & 2 as $N_{all} = 1$ was accepted and further more Step 3: Since $N_{all} = 1$, therefore $N_{diff} = 0$ was found to be correct. Therefore, $F = 1 - N_{diff}/N_{all} = 1$ was accepted. Since F was more than 0.2 and $N_{all} - N_{diff} = 1$ which is less than 3 hence the project is considered as not a common practice. Thus it can be concluded that the project activity was not a common practice in the region and the project activity was considered to be additional as all steps of the Tool for the demonstration and assessment of the additionality version 7.0 were correctly demonstrated.

Discussion of CAR/CL:

Common practice analysis has not been done as per the requirements of EB 69 Annex 8 and VVS para 128. PP has to clarify. **CAR#08** was raised in this regard.

In response, PDD version 02 dated 11/08/2014 was checked and found to be stepwise analysed for the common practice guideline as per the requirement of EB 69 Annex 8 and thus accepted in line with VVS para 128. Thus, **CAR#08** was closed out.

4.8 Application of Baseline Methodology and Calculation of Emission Factors

As per the applied methodology ACM0002 version 16^{26/}, if the project activity is the installation of a new grid-connected renewable power plant, the baseline scenario is the following:

"Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the Tool to calculate the emission factor for an electricity system".

Since the project activity is an installation of a new grid connected renewable power plant, the baseline for the project activity is the Electricity delivered to the grid by the project activity that otherwise would have been generated by the operation of grid-connected power plants and by the addition of new generation sources. Therefore, as per the requirement of ACM0002 version 16, the baseline emissions are the product of electrical energy baseline $EG_{PJ,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor (EF_{grid}).

The project activity uses the baseline emission calculation as per the methodology ACM0002, version 16. The aim of the proposed project activity is to generate electricity and supply it to the SAPP grid. The project has correctly applied baseline methodology as mentioned in the methodology ACM0002 version 16.

The project participant has calculated the baseline emissions by multiplication of the net electricity supplied by the project activity to the grid and the grid emission factor. The detailed algorithms are transparently described under sections B.6.1 of the final PDD^{1/}.

Equations adopted for Emission Reduction Calculation:

The following algorithm to calculate the emission reductions from the project activity has been appropriately adopted as per the Equation no. 13 of ACM 0002 version 16:

$$ER_y = BE_y - PE_y$$

where,

ER_y = Emission Reduction in tCO₂/year

BE_y = Baseline emission in tCO₂/year

PE_y = Project emissions in tCO₂/year

The project emissions are considered as “zero” for the project activity, which is found and justified considering the project description and consistent with the provision of applied methodology.

However PDD has included the methodological choice for calculation project emission due to diesel combustion along *ex-post* monitoring of project emissions due to operations of back-up DG set as per the provision Option B specified under “Tool to calculate the project or leakage CO₂ emissions from fossil fuel combustion, version 2”.

Option B: The CO₂ emission coefficient $COEF_{i,y}$ is calculated based on net calorific value and CO₂ emission factor of the fuel type i , as follows:

$$COEF_{i,y} = NCV_{i,y} * EFCO_{2,i,y}$$

Where:

$COEF_{i,y}$ is the CO₂ emission coefficient of fuel type i in year y (tCO₂ / mass or volume unit);

$NCV_{i,y}$ is the weighted average net calorific value of the fuel type i in year y (GJ/mass or volume unit);

$EFCO_{2,i,y}$ is the weighted average CO₂ emission factor of fuel type i in year y (tCO₂/GJ);

i are the fuel types combusted in process j during the year y .

In *ex-ante* emission reduction calculation PP has considered different assumed diesel consumption quantity during the *ex-post* scenario and has demonstrated that the calculated project emission is insignificant i.e. less than 1% of the baseline emissions during that period. In *ex-ante* project emission calculation for back-up DG set operations the value for diesel $NCV_{i,y}$ (43.3 TJ/Gg) and $EFCO_{2,i,y}$ (0.0748 tCO₂/GJ) has been correctly considered as IPCC default values at the upper limit of the uncertainty at a 95% confidence interval as provided in Table 1.2 of Chapter 1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories. The diesel density value (0.000845 t/L) for the *ex-ante* emission reduction calculation has been adopted from the publicly available website https://www.dieselnet.com/standards/eu/fuel_reference.php. The value directly referred from the specified public domain information as the max. density at 15°C as 845 kg/m³, same has been converted in terms of t/Litre as 0.000845.

With reference to the applied methodology, project activity does not lead to any leakage emissions, hence accepted.

The baseline emissions have been calculated by the following algorithm as per the equation no. 07 of ACM 0002 version 16:

$$BE_y = EG_{PJ,y} * EF_{grid, CM,y}$$

Where,

BE_y = Baseline Emissions in year y (tCO_2)
 $EG_{PJ,y}$ = Quantity of net electricity that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh)
 $EF_{grid, CM,y}$ = CO_2 emission factor of the grid in year y (tCO_2/MWh)

$EG_{PJ,y}$ has been correctly identified as $EG_{facility,y}$ (Quantity of net electricity generation supplied by the project plant/unit to the grid in year y) in line with the Equation #8 of ACM0002 version 16 as applicable for Greenfield renewable energy power plants.

The expected net electricity generation and to be dispatched to the Grid of SAPP has been correctly adopted as 611,000 MWh per annum based on capacity of 120 MW as mentioned in the Detailed Project Feasibility Report for Itehi Tezhi Hydro Power prepared by TCE Consulting Engineers Limited dated January 2008^{/12/}. Further the DPR was checked and the calculation of 611,000 MWh was found to be based on consistent assumption of rated discharge, head loss turbine efficiency which was all done during the study of the feasibility of the power plant and thus the calculation of the Gross Electricity Generation was found to be consistent and thus accepted.

The validation team assessed the calculations of *ex-ante* estimated ERs as provided by the project participant in the final version of the ER spreadsheet^{/4/}. Emission reduction due to project activity in the year y (tonnes/year) is calculated by multiplying the net energy generation from the project activity by the emission factor as per Standardized baseline entitled "Grid emission factor for the Southern African power pool" (version 01.0)^{/24/} and found consistent.

Baseline Emission Factor determination:

$EF_{grid, CM,y}$ Combined margin CO_2 emission factor for the project electricity system applicable to all project activities other than wind and solar for the first crediting period" specified in the Standardized baseline entitled "Grid emission factor for the Southern African power pool" version 01.0^{/24/}. The same was checked against the Standardized baseline of Grid emission factor for the Southern African power pool" version 01.0 and found to be consistent and thus accepted. The value of 0.9644 tCO_2/MWh was found to be correctly calculated by the PP and thus accepted.

4.9 Application of Monitoring Methodology and Monitoring Plan

The proposed project activity has adopted approved consolidated monitoring methodology ACM0002 version 16.0.0^{/26/}. Applicability conditions of the methodology have been discussed at section 4.5 of this report. The monitoring plan of the PDD has followed the methodology in the context of the parameters to be monitored. Validation team considers the monitoring plan to be in compliance with the requirements of the applied methodology.

The following parameters will be monitored for the project activity during *ex-post* scenario.

Parameter related to electricity generation by the proposed project activity:

- **$EG_{facility,y}$ (Quantity of net electricity generation supplied by the project plant/unit to the grid in year y):** This monitoring parameter and proposed monitoring procedure are found to be consistent with the applied methodology ACM0002 version 16. It will involve continuous measurement and recording frequency at least on monthly basis. Hence it is accepted by the assessment team.

Parameters related to project emission calculation due to operation of back-up DG set (as per Tool to calculate the project or leakage CO₂ emissions from fossil fuel combustion, version 2):

- **FC_{i,j,y} (Quantity of fuel type i combusted in process j during the year y):** This monitoring parameter and proposed monitoring procedure are found to be consistent with the requirements of “Tool to calculate the project or leakage CO₂ emissions from fossil fuel combustion, version 2”. It will involve continuous measurement with recording frequency at least on monthly basis. Hence it is accepted by the assessment team.
- **NCV_{i,y}: Net calorific value of diesel in t/GJ.** This monitoring parameter and proposed monitoring procedure are found to be consistent with the requirements of “Tool to calculate the project or leakage CO₂ emissions from fossil fuel combustion, version 2”. If values provided by the fuel supplier in invoices are not available as the preferred option, then default value at the upper limit of the uncertainty at a 95% confidence interval as provided in Table 1.2 of Chapter 1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories will be considered. Any future revision of the IPCC Guidelines should be taken into account. Hence it is accepted by the assessment team.
- **EF_{CO₂,i,y}: Emission factor for diesel in year y in tCO₂/GJ.** This monitoring parameter and proposed monitoring procedure are found to be consistent with the requirements of “Tool to calculate the project or leakage CO₂ emissions from fossil fuel combustion, version 2”. If values provided by the fuel supplier in invoices are not available as the preferred option then default value at the upper limit of the uncertainty at a 95% confidence interval as provided in Table 1.4 of Chapter 1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories will be considered. Any future revision of the IPCC Guidelines should be taken into account. Hence it is accepted by the assessment team.
- **pi,y : Density of the diesel in year y in t/L.** This monitoring parameter and proposed monitoring procedure with special emphasis to data source are found to be consistent with the requirements of “Tool to calculate the project or leakage CO₂ emissions from fossil fuel combustion, version 2”. Hence it is accepted by the assessment team.

The meters (main and check) which will be used to measure the net electricity generation supplied by the project. The meters will be trivector, bidirectional meters having the accuracy class of 0.2s. Daily meter readings will be taken by ITPC staff and ZESCO staff will collect the monthly readings. These meters will undergo calibration as per the national standard of calibration by the authorized calibration agency. In case of any meter damage, the same will be replaced with newly calibrated meter having same accuracy class.

The readings, along with measured data, will be checked for quality monitoring and quality assurance to confirm the credibility of the emission reductions achieved on annual basis. All the data will be archived electronically and will be stored in hard copy as a back-up. The plant technicians will be responsible to collect the monthly readings which will undergo quality check before transferral to the CDM Manager.

The assessment team has confirmed that the description of the type of energy meter to be deployed for monitoring of net electricity generation, the calibration procedure proposed for the energy meters along with corresponding data recording and consolidation approach defined under the proposed monitoring plan are appropriate and achievable.

The calculation approach to calculate the emission reduction was checked and was found to be correctly and consistently adopted by the PP in line with the methodology and hence is accepted.

Discussion of CAR/CLs:

The PP was requested to provide information and justify on the expected PLF considered for the ITPC in line with the guidance provided in EB48 Annex 11. **CAR#09** was raised in this regard.

In response, PLF mentioned in the PDD was found to be as per the requirement of EB 48 Annex 11 and thus acceptable. As the additionality is not demonstrated through the investment analysis step the PLF used for

calculation was accepted. It was found to be sourced from the financial model sent to the bank and thus accepted. Thus, **CAR#09** was closed out.

It was not clear from the PDD how many meters will be installed as there are two units of power generation as per the project plan. Meter accuracy class was not clear and also the frequency of calibration and internal audit was not clear from the description in the PDD section B.7 and B.8. PP was to clarify in this regard as per the requirement of VVS para 72e. **CL#10** was raised in this regard.

The monitoring was checked and found to be in line with requirement of the methodology and thus accepted. Information in PDD version 03 dated 09/10/2014 section B.7.3 was checked and found to be consistent with the requirement of the methodology and thus accepted. **CL#10** was thus closed out.

4.10 Environmental Impacts

As per the legal requirement in Zambia and in accordance with the requirements of the Environmental protection and pollution control act of 1990 and notably Statutory instrument no. 28 and of the Environmental impact assessment regulations of 1997, section 3 (1) of statutory instrument no. 28 of 1997 of the above mentioned act that clearly states that “a developer shall not implement a project for which a project brief or environmental impact statement is required under these regulations, unless the project brief or an environment impact statement has been concluded in accordance with these regulations and the Environmental Council of Zambia has issued a decision letter.” The proposed CDM project activity is the Greenfield Hydro Generation project in Zambia. The Environmental impact assessment study was done by ZESCO Ltd Environment and social affairs unit and Harza Engineering Company International LP. The report was compiled by ZESCO Ltd in 2008. This was checked with the Itezhi Tezhi Hydroelectric Project, Environmental Impact Assessment - addendum, ZESCO Ltd, November 2008^{/54/} and Itezhi Tezhi Hydro Power Project, summary of the environmental and social impact assessment, African Development Bank, 2011^{/55/}.

The same was checked by the assessment team against the Water Act (CAP 312) , National Water and Sanitation Act (No. 28 of 1997), The Electricity Act (No. 15 of 1995) , Natural Resources Conservation Act (CAP 315), Forestry Act (CAP314) , Local Government Act (CAP 22 of 1991), National Water and Sanitation Act (No.28 of 1997), Town and Country Planning Act of 1995 (CAP 283), Public Health Act (CAP 295), Zambia Wildlife Authority Act ((No. 10 of 1991), Fisheries Act (CAP 314, 1974, 1998), Lands Act, 1995 (CAP 292, CAP 289, CAP 288), Mines and Minerals Development Act (CAP 320) and National Heritage Conservation Commission Act(No. 23, 1989)^{/56/} and found to be acceptable.

4.11 Local Stakeholder Comments

The necessary documentary evidence on the mode of communication/invitation for attending the local stakeholders meeting along with the necessary clearances and approvals received from these stakeholders were checked during the validation site visit and found to be appropriate.

The PP has provided the written communication letters issued to the local stakeholders identified to the project activity as per the webhosted PDD informing them of the project activity.

The project activity located at the Itezhi Tezhi was checked during the validation site visit. All the necessary and relevant consents, approvals and permissions from concerned authorities on the way to implementation of the project activity could be considered as no objection to such a project activity.

Local newspaper notice published for Invitation of comments/suggestions for the project in the The Times of Zambia on 02/11/2012^{/57/} and by Radio advertisement on 02/11/2012. No adverse comments received which was checked by the assessment team based on the MoM of the Local Stakeholder Meeting^{/58/}. Stakeholder consultation was held on 08/11/2012 at Musungwa and Kaingo Villages and 09/11/2012 at Itezhi Tezhi as well as Kafue National Park and Nangoma camp.

The MoM for stakeholders' consultation meetings conducted on dated 08/11/2012 and 09/11/2012^{/58/} along with attendance sheet dated 08/11/2012 and 09/11/2012^{/58/} has been submitted by the PP; the same was checked and cross-checked during the site visit through interview of the local stakeholders and plant personnel during the site visit and was found to be acceptable.

During the meeting, the stakeholders were apprised of the salient features of the project activity and comments were invited on the same.

The copies of the invitation letters issued to the local stakeholders and positive feedback received from the local stakeholders on the project activity was checked and verified during the validation site visit and found satisfactory. The onsite interviews conducted with the local stakeholders was also found satisfactory. Based on the documentary evidence and on-site interviews with local stakeholders and plant personnel conducted during the validation site visit, it is hereby concluded that the local stakeholders' consultation was conducted in a satisfactory manner as per the requirement of VVS version 7.0 para 146.

Discussion of CAR/CLs:

CL#11 was raised since the webhosted PDD had not included the details on the local stakeholders consultation process organized as a mandatory requirement of the CDM project activity with specific emphasis to media been used to invite comments by local stakeholders; description on the local stakeholders consultation process in a complete and transparent manner; summary of any local stakeholder comments received and how such comments have been taken into account.

In response to the CL#11, further information has been provided on media used to invite stakeholders to consultation workshops and to invite comments from stakeholders. A summary of the comments received and who made the comments is also provided in the final PDD, as a description on how stakeholder comments and concerns have been addressed.

Invitation of the local stakeholder was done through independent newspaper publication done on The Times of Zambia on 02/11/2012 which was checked by the assessment team on site and found to be consistent and thus accepted. Detail MoM of the stakeholder meeting held on 08/11/2012 and 09/11/2012 was checked along with the attendance list of the local stakeholders, which was found to be consistent and thus accepted. Hence **CL#11** was closed out.

5. Comments by Parties, Stakeholders and NGOs

In accordance with sub-paragraphs 40 (b) and (c) of the CDM modalities and procedures, the project design document of a proposed CDM project activity shall be made publicly available and the DOE shall invite comments on the validation requirements from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available. This chapter describes this process for this project.

5.1 Description of how and when the PDD was made publicly available

The Project Design Document for this project was made available on <http://cdm.unfccc.int/Projects/Validation/DB/JSKW4GO66RDFEUM74A7GV3Q6HUNK/view.html> and was open for comments from 09/04/2013 until 08/05/2013. Further project was made available on <http://cdm.unfccc.int/Projects/Validation/DB/1N9TEETJKAPWPS3V4Z0073C4JXRVN8/view.html> was open for comments from 19/08/2014 until 17/09/2014.

Comments were invited through the UNFCCC CDM homepage.

5.2 Compilation of all comments received

Comment Number	Date Received	Submitter	Comment
1	20/06/2013	jhoncraig	<p>1. The project is claimed to be run of river hydro project. So the calculation of reservoir is wrong. The criterion 3 is applicable only to pumped storage or accumulation hydro projects. What does reservoir refer to as per PP?</p> <p>2. The justification of opting out alternative 3 and alternative 4 is not justified adequately. It should be based on latest published data and figures. Refer B.4. Pls. clarify.</p> <p>3. The bilateral agreements, PPA with India are the documents, DOE to check thoroughly</p> <p>4. Date of investment decision should be at the time of DPR preparation. So, the basis of the cost escalation factors at a later date for CDM consideration is not valid. Pls. clarify. Refer B5. Step 3a. (Investment barrier).</p> <p>5. How the CDM benefit will alleviate the technical barriers. As per additionality tool, if the barriers are not alleviated by CDM, then the project is not additional.</p> <p>6. Emission factor for state is not calculated. it should be made available to DOE to clearly validate this value. Emission factor for India is not as per "Tool for emission factor for the system".</p>

Comment Number	Date Received	Submitter	Comment
			<p>7. Electricity generated by the project, auxiliary consumption, transmission losses, transformer losses, net electricity exported to India, net electricity exported to the grid. These parameters to be monitored continuously and to be cross checked with sale receipts.</p> <p>8. The Meth mentions that if investment analysis option is used, apply the following:</p> <p>a. Apply an investment comparison analysis, as per Step 3 of the .Combined tool to identify the baseline scenario and demonstrate additionality., if more than one alternative is remaining after Step 2 and if the remaining alternatives include scenarios P1 and P3;</p> <p>b. Apply a benchmark analysis, as per Step 2b of the .Tool for the demonstration and assessment of additionality. If more than one alternative is remaining after Step 2 and if the remaining alternatives include scenarios P1 and P2.</p> <p>9. But PP failed to apply like this. Pls. clarify.</p> <p>10. PLF should be based on EB48 Annex 11 guideline which says The plant load factor provided to banks and/or equity financiers while applying the project activity for project financing, or to the government while applying the project activity for implementation approval; (b) The plant load factor determined by a third party contracted by the project participants (e.g. an engineering company); But PDD doesn't demonstrate how PLF has been arrived at.</p> <p>11. Whether PLF includes machine shutdown, machine availability. Whether grid availability is accounted for in the calculation of gross generation. To my surprise, critical parameter like PLF is missing from the PDD. How DOE has allowed this.</p> <p>12. Common practice analysis should be based on EB 39 Annex 10</p>

Comment Number	Date Received	Submitter	Comment
			<p>(Additionality tool). Each step of common practice analysis should be fulfilled as per tool.</p> <p>13. Emission reduction calculation should be based on EB 50 Annex 14 "Tool for emission factor for the electricity system.</p> <p>14. Whether only one set of main meter, check meter set is enough for three projects. The monitoring parameters need to be checked by DOE.</p> <p>15. The main meter and check meter technical parameters like accuracy level, make, etc. needs to be mentioned in the PDD.</p> <p>16. Layout of power transmission lines from the generation to the consumer with the metering system is not shown. It should include the distance of transmission lines. DOE has to check the meters are installed to monitor electricity generated, net electricity used in Bhutan, net electricity exported to India. Pls. clarify.</p> <p>17. The status of the construction & commission of the project is not stated in the PDD.</p> <p>18. What is the basis of calculation for transmission loss, auxiliary consumption and transformer losses? What is the length of transmission line?</p>

5.3 Explanation of how comments have been taken into account

Date:	20/06/2013		Raised by:	jhoncraig	
Type:	ISHC Comments	Number:		Reference:	
<ol style="list-style-type: none"> The project is claimed to be run of river hydro project. So the calculation of reservoir is wrong. The criterion 3 is applicable only to pumped storage or accumulation hydro projects. What does reservoir refer to as per PP? The justification of opting out alternative 3 and alternative 4 is not justified adequately. It should be based on latest published data and figures. Refer B.4. Pls. clarify. The bilateral agreements, PPA with India are the documents, DOE to check thoroughly Date of investment decision should be at the time of DPR preparation. So, the basis of the cost escalation factors at a later date for CDM consideration is not valid. Pls. clarify. Refer B5. Step 3a. (Investment barrier). How the CDM benefit will alleviate the technical barriers. As per additionality tool, if the barriers are not alleviated by CDM, then the project is not additional. Emission factor for state is not calculated. It should be made available to DOE to clearly validate this value. Emission factor for India is not as per "Tool for emission factor for the system". 					

7. Electricity generated by the project, auxiliary consumption, transmission losses, transformer losses, net electricity exported to India, net electricity exported to the grid. These parameters to be monitored continuously and to be cross checked with sale receipts.
8. The Meth mentions that if investment analysis option is used, apply the following:
 - a. Apply an investment comparison analysis, as per Step 3 of the .Combined tool to identify the baseline scenario and demonstrate additionality., if more than one alternative is remaining after Step 2 and if the remaining alternatives include scenarios P1 and P3;
 - b. Apply a benchmark analysis, as per Step 2b of the .Tool for the demonstration and assessment of additionality. If more than one alternative is remaining after Step 2 and if the remaining alternatives include scenarios P1 and P2.

But PP failed to apply like this. Pls. clarify.
PLF should be based on EB48 Annex 11 guideline which says The plant load factor provided to banks and/or equity financiers while applying the project activity for project financing, or to the government while applying the project activity for implementation approval; (b) The plant load factor determined by a third party contracted by the project participants (e.g. an engineering company); But PDD doesn't demonstrate how PLF has been arrived at.
9. Whether PLF includes machine shutdown, machine availability. Whether grid availability is accounted for in the calculation of gross generation. To my surprise, critical parameter like PLF is missing from the PDD. How DOE has allowed this.
10. Common practice analysis should be based on EB 39 Annex 10 (Additionality tool). Each step of common practice analysis should be fulfilled as per tool.
11. Emission reduction calculation should be based on EB 50 Annex 14 "Tool for emission factor for the electricity system.
12. Whether only one set of main meter, check meter set is enough for three projects. The monitoring parameters need to be checked by DOE.
13. The main meter and check meter technical parameters like accuracy level, make, etc. needs to be mentioned in the PDD.
14. Layout of power transmission lines from the generation to the consumer with the metering system is not shown. It should include the distance of transmission lines. DOE has to check the meters are installed to monitor electricity generated, net electricity used in Bhutan, net electricity exported to India. Pls. clarify.
15. The status of the construction & commission of the project is not stated in the PDD.
16. What is the basis of calculation for transmission loss, auxiliary consumption and transformer losses? What is the length of transmission line?

Project Participant Response:

Date: 03/11/2014

1. The project is claimed to be run of river hydro project. So the calculation of reservoir is wrong. The criterion 3 is applicable only to pumped storage or accumulation hydro projects. What does reservoir refer to as per PP?

The project does not claim to be run-of-river, but states clearly that no new reservoir or increase in volume of existing reservoir or raising or existing dam will be required. Criterion 3 relates to integrated hydro power projects and is therefore not applicable. Reservoir refers to the existing reservoir formed due to the existing damming of the Kafue river.

2. The justification of opting out alternative 3 and alternative 4 is not justified adequately. It should be based on latest published data and figures. Refer B.4. Pls. clarify.

With respect to section B.4. there is no mention of any alternatives. It is not clear therefore what this question refers to.

3. The bilateral agreements, PPA with India are the documents, DOE to check thoroughly

The project is located in Zambia not India. It is assumed that DOE has checked PPA on site.

4. Date of investment decision should be at the time of DPR preparation. So, the basis of the cost escalation factors at a later date for CDM consideration is not valid. Pls. clarify. Refer B5. Step 3a.

(Investment barrier).

It is not understood what DPR means in this context. No cost escalation factors are provided. This issue is not clear.

5. How the CDM benefit will alleviate the technical barriers. As per additionality tool, if the barriers are not alleviated by CDM, then the project is not additional.

Section B.5. has been revised to show how barriers are alleviated by CDM.

6. Emission factor for state is not calculated. it should be made available to DOE to clearly validate this value. Emission factor for India is not as per "Tool for emission factor for the system".

As above, project is located in Zambia, not India. Emission factor is that given in the standardized baseline: Grid emission factor for the Southern African power pool (version 01.0), which has been approved by the UNFCCC

7. Electricity generated by the project, auxiliary consumption, transmission losses, transformer losses, net electricity exported to India, net electricity exported to the grid. These parameters to be monitored continuously and to be cross checked with sale receipts.

As above, project is located in Zambia, not India. All relevant parameters will be monitored as required by ACM 0002, as described in section D.

8. The Meth mentions that if investment analysis option is used, apply the following:

a. Apply an investment comparison analysis, as per Step 3 of the .Combined tool to identify the baseline scenario and demonstrate additionality., if more than one alternative is remaining after Step 2 and if the remaining alternatives include scenarios P1 and P3;

b. Apply a benchmark analysis, as per Step 2b of the .Tool for the demonstration and assessment of additionality. If more than one alternative is remaining after Step 2 and if the remaining alternatives include scenarios P1 and P2.

But PP failed to apply like this. Pls. clarify.

Investment analysis is optional and not used in this case, so above not relevant

PLF should be based on EB48 Annex 11 guideline which says The plant load factor provided to banks and/or equity financiers while applying the project activity for project financing, or to the government while applying the project activity for implementation approval; (b) The plant load factor determined by a third party contracted by the project participants (e.g. an engineering company); But PDD doesn't demonstrate how PLF has been arrived at.

PLF supplied to DOE (see CAR 09)

9. Whether PLF includes machine shutdown, machine availability. Whether grid availability is accounted for in the calculation of gross generation. To my surprise, critical parameter like PLF is missing from the PDD. How DOE has allowed this.

PLF supplied to DOE (see CAR 09)

10. Common practice analysis should be based on EB 39 Annex 10 (Additionality tool). Each step of common practice analysis should be fulfilled as per tool.

Common practice analysis has now been undertaken and is included in section B.5.

<p>11. Emission reduction calculation should be based on EB 50 Annex 14 "Tool for emission factor for the electricity system. Emission factor is that given in the standardized baseline: Grid emission factor for the Southern African power pool (version 01.0), which has been approved by the UNFCCC</p>	
<p>12. Whether only one set of main meter, check meter set is enough for three projects. The monitoring parameters need to be checked by DOE.</p> <p>There is only one project proposed, not three. Further information on metering is provided (see CAR 10)</p>	
<p>13. The main meter and check meter technical parameters like accuracy level, make, etc. needs to be mentioned in the PDD. Further information on metering is provided (see CAR 10)</p>	
<p>14. Layout of power transmission lines from the generation to the consumer with the metering system is not shown. It should include the distance of transmission lines. DOE has to check the meters are installed to monitor electricity generated, net electricity used in Bhutan, net electricity exported to India. Pls. clarify.</p> <p>As the project is neither based in Bhutan or India, or will export electricity to either Bhutan or India, we assume this question relates to another project than the current CDM activity.</p>	
<p>15. The status of the construction & commission of the project is not stated in the PDD.</p> <p>Current status of construction has been clarified (see CAR 01), and commissioning date given in PDD (the planned start date of the project activity is 15/05/2015, see C.1.1)</p>	
<p>16. What is the basis of calculation for transmission loss, auxiliary consumption and transformer losses? What is the length of transmission line?</p> <p>Transmission loss, auxiliary consumption and transformer losses do not need to be calculated according with the standardized baseline: Grid emission factor for the Southern African power pool (version 01.0). The transmission line is not part of this CDM activity.</p>	
Documentation Provided by Project Participant:	
PDD version 04 dated 03/11/2014	
Information Verified by Lead Assessor:	
PDD version 04 dated 03/11/2014	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 13/11/2014
All issued raised through ISHC and addressed by PP and thus accepted.	
Acceptance and Close out by Lead Assessor: Closed	Date: 13/11/2014

6. List of Persons Interviewed

Date	Name	Position	Short Description of Subject Discussed
19/06/2013- 20/06/2013	Samuel P Sinkala	ITPC Project Director	Project description and implementation plan, CDM conceptualization & Start date, Stake Holders consultation process; Project Financing
	Kedar Prasad	ITPC Deputy Project Director	Discussion on PDD. Assessment of Project Boundary (Site)/ Interviews about the project activity and project technology & Project monitoring plan and monitoring parameters. project boundary, assessment of Sustainable Development indicators, project funding, project financing and ER calculations.
	Derek Musonda	Safety Officer ITPC	
	Rajkumar	TZA Civil Engineer	
	Charles Mukukit	TZA Electrical Engineer	
	Francois Sammut	Carbon Limits	On conference call for all aspects in PDD preparation
	Judith Namutowe	Villager ITEZHI TEZHI	Local Stakeholder interviewed
	Kasonde Kasonde	Villager ITEZHI TEZHI	Local Stakeholder interviewed
	Clever Zulu	Villager ITEZHI TEZHI	Local Stakeholder interviewed
	Chusa Sichone	ZESCO	Local Stakeholder interviewed

7. Document References

Category 1 Documents (documents provided by the Client that relate directly to the GHG components of the project, (i.e. the CDM Project Design Document, confirmation by the host Party on contribution to sustainable development and written approval of voluntary participation from the designated national authority):

Name of document
/1/ PDD version 01 dated 19/11/2012 (Initial Webhosted Version) PDD version 02 dated 11/08/2014 (Second Webhosted Version) PDD version 03 dated 09/10/2014 PDD version 04 dated 03/11/2014 PDD version 05 dated 15/12/2014 PDD version 06 dated 17/05/2015 PDD version 07 dated 07/07/2015 PDD version 08 dated 13/07/2015 (Final Version)
/2/ Letter of Approval (LoA) issued by the DNA office of Zambia, National Committee for Clean Development Mechanism, Ministry of Lands, Natural Resources and Environment Protection bearing Letter ref No. MLNREP 6/6/25 dated 17/01/2013
/3/ MoC dated 05/08/2014
/4/ ER Sheet Version 01 dated 03/11/2014 (APPENDIX 4_ITEZHI TEZHI EMISSION REDUCTIONS_OCTOBER 2012.xlsx) ER sheet version 02 dated 17/05/2015 (APPENDIX 4_ITEZHI TEZHI EMISSION REDUCTIONS_OCTOBER 2012_150517.xlsx) ER sheet version 03 dated 07/07/2015 (APPENDIX 4_ITEZHI TEZHI EMISSION REDUCTIONS_OCTOBER 2012_150707.xlsx) (Final Version)
/5/ EF Sheet Version 01 dated 11/08/2014 (Discarded due to later application of "Standardized Baseline Grid emission factor for the Southern African power pool", ver. 1.0)

Category 2 Documents (background documents used to check project assumptions and confirm the validity of information given in the Category 1 documents and in validation interviews):

Name of document
/6/ Confirmation vide email dated 18/11/2014 has been obtained from the DNA office of Zambia, Mr. Lungu M. Richard (Principal Natural Resource Management Officer, Designated National Authority) for the LOA
/7/ Kyoto Ratification: https://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php
/8/ Declaration by ITPC towards non-involvement of ODA dated 20/06/2013
/9/ PDD form https://cdm.unfccc.int/Reference/PDDs_Forms/PDDs/PDD_form05.pdf
/10/ VVS Version 7.0
/11/ Global Stakeholder Consultation Process: http://cdm.unfccc.int/Projects/Validation/DB/JSKW4X4GO66RDFEUM74A7GV3Q6HUNK/view.html and http://cdm.unfccc.int/Projects/Validation/DB/1N9TEETJKAPWPS3V4Z0073C4JXRVN8/view.html
/12/ Feasibility report for Itezhi Tezhi Hydro Electric Project (2 x 60 MW) by TCE Consulting Engineers Ltd dated January 2008
/13/ TCE website http://www.tce.co.in/
/14/ On-site interview with the senior personnel of Itezhi Tezhi., namely Mr. Kedar Prasad (General

Manager) and Mr. Derek Musonda (Senior Project Coordinator)
/15/ EPC Contract between ITPC and SinoHydro Corporation Limited, China on 30/11/2009
/16/ PPA with ZESCO dated 08/04/2011
/17/ PPA authorized and approved by the Energy Regulatory Board on 16/05/2011
/18/ Google Maps Application
/19/ ITPC Site Progress Report June 2013
/20/ CDM Project Standard, version 7.0
/21/ Tool for the demonstration and assessment of additionality (version 07.0.0.)
/22/ Combined tool to identify the baseline scenario and demonstrate additionality (version 05.0.0)
/23/ Tool to calculate project or leakage CO2 emissions from fossil fuel combustion (version 02)
/24/ Standardized baseline entitled "Grid emission factor for the Southern African power pool" (version 01.0)
/25/ Tool to determine the remaining lifetime of equipment
/26/ Approved Methodology ACM0002, version 16 http://cdm.unfccc.int/methodologies/DB/EY2CL7RTEHRC9V6YQHLAR6MJ6VEU83
/27/ South African Power Pool (SAPP) grid system based on the information available at that time from the Analysis of grid emission factors for electricity sector in sub Saharan Africa: The case of the Southern African Power Pool, UNEP Risoe by Burian, M., Zhou, P.; Masawi, F., Yamba, F. and Baumgard, F. (2012) and Validation of the SAPP grid emission factor, Carbon Check
/28/ UN list of Least Developed Countries http://unctad.org/en/Pages/ALDC/Least%20Developed%20Countries/UN-list-of-Least-Developed-Countries.aspx (last accessed on 06 th July 2015)
/29/ Information on North Kariba HPP https://clairemchapman.wordpress.com/2011/08/31/north-kariba-hydro-power-station-zambia/ (last accessed on 06 th July 2015)
/30/ Map of LLDCs: http://unctad.org/en/Pages/ALDC/Landlocked%20Developing%20Countries/LLDCs-Map.aspx (last accessed on 06 th July 2015)
/31/ EB 50 Annex 13 (Guidelines for objective demonstration and assessment of barriers (version 01))
/32/ Final Asset Valuation Report of ITPC prepared by Fieldstone, Dewey & LeBoeuf, Development Bank of South Africa and Scott Wilson November 2008
/33/ Kbaki, J., Case study in corporate governance: Industry focus-electricity, SOE network for Southern Africa, June 2009, Maputo
/34/ Project Concept Note, 2011, prepared by AfDB
/35/ Feasibility study prepared in 1999 by Harza for ITPC Ltd
/36/ Financial ITT Fin Model v72 dated 26/03/2008
/37/ Rating by Fitch and Standard in 2011
/38/ Zambia Development Agency Investment License no. ZDA/304/10/2008 dated 08/10/2008
/39/ "Coast of borrowing in Zambia too high – Chikwanda" (http://www.ukzambians.co.uk/home/2011/10/03/coast-of-borrowing-in-zambia-too-high-%E2%80%93-chikwanda/) (last accessed on 06 th July 2015)
/40/ Lending Rates and Inflation Rates in SAPP countries: http://www.theglobaleconomy.com/compare-countries/ (last accessed on 06 th July 2015)
/41/ Inflation rate in SAPP countries: http://www.tradingeconomics.com/zambia/inflation-cpi (last accessed on 06 th July 2015)
/42/ PPP Status: http://www.ppp.gov.za/Pages/About.aspx (last accessed on 06 th July 2015)

/43/ Public Private Partnership , Project List: http://www.ppp.gov.za/Lists/PPP%20Project%20List%20Master/Energy1.aspx (last accessed on 06 th July 2015)
/44/ Report by Clark, A., Davis, M., Eberhard, A., Gratwick, K., and Wamukoya, N. (2005), Power sector reform in Africa: assessing the impact on poor people, A study managed by the graduate school, University of Cape Town for ESMAP/World Bank.
/45/ Namibia status: http://www.drfn.info/docs/drfn/2010-2011_DRFN_Annual_Report.pdf (page 21) (last accessed on 06 th July 2015)
/46/ Information on Cahora Bassa Dam : http://en.wikipedia.org/wiki/Cahora_Bassa_Dam (last accessed on 06 th July 2015)
/47/ SAPP website: http://www.sapp.co.zw/
/48/ World Bank's "Doing business (2012): http://www.doingbusiness.org/~media/FDPKM/Doing%20Business/Documents/Annual-Reports/English/DB12-FullReport.pdf (last accessed on 06 th July 2015)
/49/ http://www.guardian.co.uk/news/datablog/2010/apr/30/credit-ratings-country-fitch-moodys-standard#data Zambia Credit Rating
/50/ http://www.washingtonpost.com/blogs/blogpost/post/standard-and-poors-credit-rating-for-each-country-of-the-world-map/2011/08/09/gIQAg4Qj4I_blog.html (last accessed on 06 th July 2015)
/51/ Email to Zambia DNA by ITPC dated 03/05/2011
/52/ Email from ITPC to UNFCCC on 03/05/2011
/53/ Guideline for Common Practice Analysis" version 3.1
/54/ Itezhi Tezhi Hydroelectric Project, Environmental Impact Assessment - addendum, ZESCO Ltd, November 2008
/55/ Itezhi Tezhi Hydro Power Project, summary of the environmental and social impact assessment, African Development Bank, 2011
/56/ Water Act (CAP 312) , National Water and Sanitation Act (No. 28 of 1997), The Electricity Act (No. 15 of 1995) , Natural Resources Conservation Act (CAP 315), Forestry Act (CAP314) , Local Government Act (CAP 22 of 1991), National Water and Sanitation Act (No.28 of 1997), Town and Country Planning Act of 1995 (CAP 283), Public Health Act (CAP 295), Zambia Wildlife Authority Act ((No. 10 of 1991) , Fisheries Act (CAP 314, 1974, 1998) , Lands Act, 1995 (CAP 292, CAP 289, CAP 288) , Mines and Minerals Development Act (CAP 320) and National Heritage Conservation Commission Act(No. 23, 1989)
/57/ Invitation of comments/suggestions for the project in the "The Times of Zambia" on 02/11/2012
/58/ MoM of the Local Stakeholder Meeting for Stakeholder consultation was held on 08/11/2012 at Musungwa and Kaingo Villages and 09/11/2012 and attendance list.
/59/ Loan from Foreign investors http://www.afdb.org/en/news-and-events/article/zambia-signs-energy-sector-agreement-for-itezhi-tezhi-power-generation-project-13002/ (last accessed on 06 th July 2015)
/60/ http://www.eu-africa-infrastructure-tf.net/activities/grants/itezhi-tezhi-hydro-power-and-transmission-line-project.htm - For grants of the ITPC project (last accessed on 06 th July 2015)
/61/ http://www.hydroworld.com/articles/2012/02/alstom-wins-bid-for.html to refer that Alstom had provided the 120 MW turbo generator for the hydro project (last accessed on 06 th July 2015)
/62/ http://ppi-re.worldbank.org/data/project/tata-itezhi-tezhi-hpp-5927 was referred for the detailed project information (last accessed on 06 th July 2015)
/63/ http://www.eib.org/attachments/pipeline/20080263_eia2_en.pdf was referred for EIA of the project activity (last accessed on 06 th July 2015)

A.1 Annex 1: Local Assessment

This checklist is designed to provide confirmation of in-country data and information provided in the Project Design Document for **Itezhi Tezhi Hydro Power**.

It serves as a “**reality check**” on the project that is completed by the assessment team.

Issue	Findings	Source/Mean of Verification	Further Clarification / Action Required? / Information
Host Country Approval letter ensuring the participation requirements being met by the project activity.	Host Country Approval letter DNA office of Zambia towards the CDM project activity was not provided by the PP during the document review process of the validation site visit at project site in Zambia	Letter of Approval issued DNA office of Zambia dated 17/01/2013 ref no: MLNREP/6/6/25 issued by Ministry of Lands, Natural Resources and Environmental Protection.	Checked OK.
The appropriate Modalities of Communication for the project activity have to be submitted by the Project participant before submitting a request for registration.	The letter on the Modalities of Communication with the Executive Board and the UNFCCC Secretariat signed by the project participant has been provided by the PP during the document review process of the validation site visit at Zambia.	The Modalities of Communication dated 05/08/2014 was provided which was found to be consistent with Appendix 1 of the PDD and complete as per the UN requirement hence accepted.	The appropriate Modalities of Communication for the project activity have to be submitted by the Project participant before submitting a request for registration. CAR#03. MoC was provided by the PP and CAR#03 was closed. Checked OK
Actual situation or planning for the project activity needs to be cross checked. Project's spatial boundaries and the system boundaries	The project activity is a Greenfield Hydro Power facility under the CDM project activity Titled Itezhi Tezhi Hydro Power was checked and found in compliance.	The actual situation and planning was checked and verified during the validation site visit at the demarcated project site Itezhi Tezhi Zambia. On site interview of PP followed by Onsite physical verification was carried out and found satisfactory.	Actual situation or planning for the project activity needs to be cross checked. Checked OK and closed
The appropriate project	The project participants have the necessary licenses as the project	The documents were provided in	The appropriate project

Issue	Findings	Source/Mean of Verification	Further Clarification / Action Required? / Information
ownership and requisite approval/ license required for establishment of the project activity at the mentioned geographical location needs to be checked.	activity is well within the premises of the project boundary indicated.	original during the validation site visit which was checked and verified and found satisfactory. ITPC Final Asset Valuation Report, prepared by Fieldstone, Dewey and LeBoeuf, Scott Wilson and Development Bank of Southern Africa. Zambia Development Agency License no. ZDA/304/10/2008 dated 08/10/2008	ownership and requisite approval/ license required for establishment of the project activity at the mentioned geographical location needs to be checked. Checked OK
Purchase order along with technical specification.	Project technical description has been reviewed through the signed contract and interviewing the PP and Project contractor. The technical description provided in the PDD is found consistent with the actual scenario.	Review of the following document: Contract between Itezhi Tezhi Power Corporation and Sino Hydro Corporation Limited dated 30/11/2009 Tariff Approval letter from Energy Regulatory Board on 16/05/2011	Checked OK.
The initial training and maintenance efforts required for the project activity and the related documentary evidence to be checked.	The team involved in the hydro project will undergo requisite initial training during project commissioning stage. The issue has been discussed with the authorized personnel, it was confirmed that all such initial training details will be duly documented in course. This was found satisfactory and hence considered acceptable	The initial training and maintenance efforts required for the project activity and the related documentary evidence to be checked	This is a Greenfield Hydro project on BOOT model and the electrical and mechanical maintenance team would be trained personnel as confirmed by the PP. Checked OK.
Evidence for No use of ODA has to be submitted for the project.	A Self Declaration towards No ODA involvement has been submitted. The same is considered acceptable.	Review of the following document: - "A Declaration towards no involvement of ODA dated 20/06/2013	Checked OK.

Issue	Findings	Source/Mean of Verification	Further Clarification / Action Required? / Information
		Evidence for No use of ODA was submitted for the project.	
It is required to be checked whether the project technology used is likely to be substituted by other or more efficient technologies within the project period.	Letter of undertaking by the PP that the project is deemed as in the distinct geographical area of Itezhi Tezhi.	Declaration from PP dated 20/06/2013	Checked OK.
Quality Assurance (QA) and Quality Control (QC) procedures for data monitoring or ISO certificate for the EPC contractor.	Quality assurance and quality control procedures for measurement readings, data recording/documentation and archiving have been duly presented in the proposed monitoring plan in the PDD.	Document Review, Site visit and discussion with the Equipment Supplier: Quality Assurance (QA) and Quality Control (QC) procedures for data monitoring or ISO certificate for the EPC contractor. This is a Greenfield project so the QA/QC will be implemented by the PP after commissioning	Checked OK.
Justify the claim of non requirement of mandatory EIA study for the project activity against objective evidence	The PP has undertaken EIA study for the proposed project activity, which has been approved by relevant authorities of Zambia.	Document Review: Itezhi Tezhi hydroelectric, Environmental Impact Assessment- addendum, ZESCO Ltd, November 2008 and Itezhi Tezhi Hydro Power Project, summary of the environmental and social impact assessment, African Development Bank, 2011	No Issues. Checked OK.
Local stakeholders' comments are required to be verified for any adverse comment. MoM of stakeholder	Stakeholder consultation was held on 08/11/2012 at Musungwa and Kaingo Villages and 09/11/2012 at Itezhi Tezhi as well as Kafue National Park and Nangoma camp. Local newspaper notice published for Invitation of comments/suggestions for the project in the The Times of Zambia on	Document Review, Site visit and discussion with CDM project team and interviews conducted in Zambia on the project activity such as: Local newspaper notice	Checked OK.

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
<p>consultation meeting</p> <p>Due account of stakeholder comments received required to be verified.</p> <p>Discussions with the Local Stakeholders</p>	<p>02/11/2012 and by Radio advertisement</p> <p>The MoM for stakeholders' consultation dated 08/11/2012 and 09/11/2012 and attendance sheet dated 08/11/2012 and 09/11/2012 has been submitted by the PP the same was checked and cross-checked during the site visit and is acceptable.</p>	<p>published for Invitation of comments/suggestions for the project in the "The Times of Zambia" on 02/11/2012.</p> <p>The MoM and attendance list for stakeholders' consultation dated 08/11/2012 and 09/11/2012cross-checked during the site visit and is acceptable</p>	

A.2 Annex 2: Validation Checklist

Table 1 - Participation Requirements for Clean Development Mechanism (CDM) Project Activities (Ref PDD, Letters of Approval and UNFCCC website)

Requirement	Reference Criteria	SGS Assessment	Conclusion/CARs/CLs
<p>1. All Parties involved have approved the project activity</p> <p>1.1. Has the DNA of each Party involved in the proposed CDM project activity in section A.3 of the PDD provided a written letter of approval which confirms</p> <ul style="list-style-type: none"> a) The country is a Party to the Kyoto Protocol b) Participation is Voluntary c) The Host Party confirming that the proposed CDM project activity contributes to sustainable development of the country Non-Annex 1 Party shall submit a letter of approval d) It refers to the precise proposed CDM project activity title in the PDD being submitted for registration <p>1.2. Whether the LoA is unconditional with respect to (a)-(d) above?</p> <p>1.3. Is the LoA from the project participant or directly from the DNA, indicate the means of validation employed to assess the authenticity with DNA if the team doubt the authentic of LoAs.</p>	<p>Clean Development Mechanism, Validation and Verification Standard, Version 7.0 (from this point forwarded referenced as VVS) - – 39, 40 a-d-43 /51</p> <p>Paragraph 37 CDM Modalities and procedures</p>	<p>By checking the UNFCCC website below it was confirmed that Host Country-Zambia involved have nominated a DNA http://cdm.unfccc.int/DNA/index.html</p> <p>By checking the UNFCCC website below it was confirmed that Zambia have ratified the KP http://maindb.unfccc.int/public/country.pl?country=ZM</p> <p>The PP has submitted the LoA Ref: MLNREP/6/6/25 dated 17/01/2013 and it was confirmed in the content of the LoA and confirm that (a)-(d) is satisfied</p> <p>It was also confirmed that the LoA is unconditional with above (a)-(d). It was thus confirmed the LoA are in accordance with paragraphs 39-43 of VVS version 7.0</p>	Y
<p>2. Please state the project participants listed in the PDD and check with which of these project participants does SGS have a contract for the projects validation</p>	<p>Marrakech Accords, CDM Modalities, §40</p>	<p>It was confirmed through signed validation agreement , page 2 that SGS has a contract with Itezhi Tezhi Power Corporation (ITPC)</p>	Y

2.1. If the project participant(s) listed in the PDD published at international stakeholder ¹ consultation are not included in the PDD submitted with request for registration, a letter should be obtained from the withdrawn project participant(s) confirming its voluntary withdrawal from the proposed project activity.	Para 20 of PCP v7	The PP has provided the LoA dated 17/01/2013 from the DNA of Zambia and the information regarding the project participant is found to be in line with the information furnished in the further sections of the web hosted version of the PDD in particular under Annex 1.	Y
2.2. Confirm while submitting a request for registration – all of the project participants with a contractual relationship are still listed in the PDD.	Para 20 of PCP v7	The project participants with a contractual relationship as mentioned in the web hosted version of the PDD are still listed in the final version of the PDD consistently.	Y
2.3. Project participants who are listed in the PDD (submitted for global stakeholder consultation) but who do not have a contractual relationship with SGS for the purposes of the validation activity may be removed from the PDD which is submitted for registration	Para 20 of PCP v7	The project participants with a contractual relationship as mentioned in the web hosted version of the PDD are still listed in the final version of the PDD consistently.	Y
2.4. SGS may restart the validation activity through the new or revised contract with a different set of project participants by; a. Indicating that the first validation contract has been terminated and; b. Republishing the PDD or revised PDD for global stakeholder consultation.	Para 21 of PCP v7 (If applicable)	SGS has validated the project under the same first and initial contractual obligation with an opinion and no revision in contract for the validation assignment or a republishing of the PDD or the revised PDD for global stakeholder consultation is relevant.	Y
2.5. The letter/s of approval are unconditional with respect to 1.1.a) to 1.1.d) above	VVS Para. 40-43	The LoA submitted by the PP was found to be unconditional. Further confirmation was received by getting an email confirmation from the DNA of Zambia, Mr. Lungu Mfumu Richard and found consistent.	Y
3. The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof, and be entered into voluntarily	VVS Para. 52 Marrakech Accords, CDM	Sustainable development has been confirmed by the host party during the project LoA	Y

¹ Stakeholders mean the public, including individuals, groups or communities affected, or likely to be affected, by the proposed CDM project activity or actions leading to the implementation of such an activity

	Modalities §29 and §30 Kyoto Protocol Art. 12.2, Marrakech Accords, CDM Modalities §40a		
4. Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for a minimum of 30 days, and the project design document and comments have been made publicly available	VVS Para. 35-37 Marrakech Accords, CDM Modalities, §40	The PDD was uploaded for the global stakeholder process. The information towards the same was available from the website: http://cdm.unfccc.int/Projects/Validation/DB/JSKWX4G066RDFEUM74A7GV3Q6HUNK/view.html Starting date and closing date: start date- 09/04/2013 and the closing date-08/05/2013 Number of comments received:16 The comments are duly addressed by the PP in final PDD and duly discussed under Section 5.3 of this report..	Y
5. The project design document is in accordance with the applicable CDM requirements for completing PDDs.	VVS Para. 63-64 Marrakech Accords, CDM Modalities, Appendix B, EB Decisions	The PDD is in line with Guidelines for Completing the Project Design Document (CDM-PDD)', version 07, Annex 12, EB 41.	Y
6. Have the project participant been authorized by at least one Party involved in letter of approval	VVS para 46-49	PP are found to be appropriate in the PDD and LoA	Y
7. Has the DNA considered whether the proposed CDM project activity assists the host Party in achieving sustainable development	VVS para 51-53	The PP has received the LOA for the project activity from the DNA office of Zambia, which duly endorsed the contribution to sustainable development by the project activity.	Y

Table 2 - PDD

Checklist Question	Reference Criteria	MoV*	SGS Assessment	Conclusion/ CARs/CLs
A. General Description of Project Activity				
A.1. Project Title				
A.1.1. Does the used project title clearly enable the reader to identify the unique CDM activity?	VVS Para.65 Guidelines for completing a CDM-PDD (PDD) section A.1	DR	The used project title 'Itezhi Tezhi Hydro Power' enables the reader to identify the unique CDM activity.	Y
A.1.2. Is there an indication of a revision number and the date of the revision?	VVS Para.65 PDD section A.1	DR	The webhosted PDD was provided with version 1 dated 19/11/2012 as provided in PDD section A.1	Y
A.1.3. Does the PDD clearly indicate the project participant, host party, sectoral scope and selected methodologies correctly as per contract with SGS	PDD template version 4.1 Guidelines for completing a CDM-PDD (PDD) section A.1 Annex 8 EB 66	DR	The 1 st page of the PDD lists only ITPC as the PP and does not mention Tata Africa which is mentioned in Appendix-1 of the webhosted PDD, version 1 dated 19/11/2012. CAR01 closed out.	CAR01 raised Y
A.2.				
A.2.1. Does the proposed CDM project activities in existing facilities or utilizing existing	VVS Para 69 Guidelines for completing a CDM-PDD (PDD)	DR	The webhosted PDD has adequate details on 'purpose of the project activity', 'type of technology used' and 'contribution of the project to sustainable development'.	Y

* MoV = Means of Verification, DR= Document Review, I= Interview

equipments? Does a site inspection carried out by the assessment team?	section A.1			
A.2.2. Does the description of the proposed CDM project activity as contained in the PDD sufficiently cover all relevant elements accurately and provide the reader with a clear understanding of the nature of the proposed CDM project activity?	VVS Para.66-69 VVS Para. 66(a) PDD section A.1 see also A3	DR	The information provided in the PDD enables the reader to have clear understanding of the proposed CDM activity.	Y
A.2.3. If the project activity involves the alternation of an existing installation or process, does the project description clearly state the differences resulting from the project activity compared to the pre-project situation?	VVS Para.66-69 PDD section B.3 see also A.4, A.4.3 and B.3	DR	The information provided is consistent with the DPR, Purchase orders and relevant statutory approvals for the project activity.	Y
A.2.4. Is all information provided consistent and in compliance with the actual situation or planning?	VVS Para.66-69 PDD section A.1 see also A.3, and B.2	DR	The information provided is consistent with details provided in other sections of the PDD.	Y
A.2.5. Is all information with respect to project description deemed accurate and complete?	VVS Para.66-69 PDD section A.1	DR	The information provided in the PDD enables the reader to have clear understanding of the proposed CDM activity. Hence it can be concluded that all information with respect to project description deemed accurate and complete.	Y
A.3.				
A.3.1. Is the Host Party clearly mentioned in the section A.2	PDD section A.2	DR	The host country is clearly mentioned under section A.2.1 of the webhosted PDD, version 1 dated 19/11/2012	Y

A.3.2. Is Region/State/Province etc. in A.2.2	PDD section A.2	DR	The region mentioned in the PDD is not matching with the political location of the site. PP has to clarify in this regard as per the requirement of para 65, VVS, version 7.0. CAR#02. CAR#02 closed out.	CAR#02 Y
A.3.3. Is City/Town/Community etc. clearly mentioned in section A.2.3.	PDD section A.2	DR	The City/Town/Community etc. is clearly mentioned in section A.2.3. of the webhosted PDD, version 1 dated 19/11/2012	Y
A.3.4. Is Physical/Geographical location provided in A.2.4.	PDD section A.2	DR	Coordinates provided in the PDD are in decimals. PP is requested to provide coordinates in Degree, minute seconds as per the provisions of para 65, VVS version 7.0 CAR#02 closed out.	CAR#02 Y
A.3.5. Has the MoC been completed as per the latest Procedures for MoC between the project participants and the Executive Board?	VVS para 54-58	DR/S V	The MOC was not provided during the initial desk review. The same was checked during the site visit. CAR#02 closed out.	CAR #03 raised Y
A.4.				
A.4.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)?	PDD section A.3	DR	Adequate information on project site with latitude & longitude and nearest approaches is provided in section A.4 of the PDD. The proposed CDM project activity is a new green field project and does not involve any alteration of existing installations or process.	Y

A.4.2. Are the latitude and longitude of the site indicated (decimal points)	PDD section A.3 Guidelines for completing a CDM-PDD (PDD) section A.3	DR	Refer CAR #02 and its closure	Y
A.4.3. Does the proposed CDM project activity involve the alteration of existing installations or process?	VVS Para.66-69 PDD section A.3 Guidelines for completing a CDM-PDD (PDD) section A.3	DR/ SV	The proposed CDM project activity is installation of power plant over existing Dam	Y
A.4.4. Do the project participants possess ownership or licenses which will allow the implementation of the project at that site / those sites?	VVS Para.66-69 PDD section A.3 Guidelines for completing a CDM-PDD (PDD) section A.3	DR/S V	The project ownership details of the PP for the implementation of the project at the designated site was checked and obtained during site visit	Y
A.4.5. Is the category(ies) of the project activity correctly identified?	VVS Para.66-69 PDD section A.3	DR	The category of the project activity and the applied methodology are correctly identified in the PDD.	Y
A.4.6. Is all information provided in compliance with actual situation or planning as available by the project participants?	VVS Para.66-69 PDD section A.3 Guidelines for completing a CDM-PDD (PDD)	Site Visit	To be checked during site visit. Checked and found consistent	Y
A.4.7. Are the projected emission reductions in consistency with the ex-ante estimation in Section B.6.4?	VVS Para.66-69 PDD section A.4.3	DR	The projected emission reductions are consistent with the ex-ante estimation in Section B.6.4. The same would have to be checked against the excel spread sheet during the validation site visit.	Y

A.5.				
A.5.1. Are the parties and project participants correctly mentioned in the A.4 of the PDD	VVS Para.66-69 PDD section A.4	DR	The 1 st page of the PDD mentions ITPC as the PP whereas the section A.4 of the PDD lists Tata Africa and ZESCO Ltd as the PP.	Y
A.6.				
A.6.1. Does the information on public funding provided conform to the actual situation or planning as presented by the project participants?	PDD section A.5	DR / Site Visit (LAC)	The section A.4.5 of the PDD indicates, "There is no public funding for the proposed project activity". The same has to be discussed and checked against proper documentary evidence during the on-site validation.	LAC Y
A.6.2. Is all information provided consistent with details provided by further chapters of the PDD (in particular annex 2)?	PDD section A.5	DR	The information provided in section A.4. is consistent with details provided in annex 2.	Y
A.6.3. In case of public funding from Annex I Parties is it confirmed that such funding does not result in a diversion of official development assistance	PDD section A.5	DR	No public funding from Annex I Parties is involved in the project activity.	Y
A.6.4. If the project is a debundled component of a larger project, does the larger project fall within the limits for small-scale CDM project activities	VVS Para. 162-163	DR	The project is not a de-bundled component of the large scale project	Y

B.				
B.1.				
B.1.1. Is the baseline and monitoring methodology a valid version approved by the CDM EB?	VVS Para.71 PDD section B.1	DR	The applied baseline methodology ACM 0002, version 16.0 was found to be the latest version available of the methodology approved by the CDM Methodology Panel.	Y
B.1.2. Is there any specific guidance (including the Tools) provided by EB and has these guidance been applied? If yes, is this correctly applied	VVS Para.72 PDD section B (B.2)	DR	The PP is requested to refer, quote and apply the methodology (and the tools) correctly by comparing it to the latest available tools throughout the PDD as per requirement of VVS para 71 CAR#04 closed out.	CAR#04 Y
B.2.				
B.2.1. Is the selected approved methodology applicable to the project activity in the PDD?	VVS Para.78 PDD section B (B.2)	DR	The approved methodology was found to be applicable to the project activity. However, it was not clearly mentioned how the conformance with each criterion has been met in particular towards the documentary evidence. The PP is requested to clarify the same. CAR#04 was raised. The PP had corrected the same in the revised PDD and CAR#04 closed out.	CAR#04 is raised Y
B.2.2. Is the discussion in the PDD in conformance with all applicability criteria of the applied methodology?	VVS Para75-78 PDD section B (B.2)	DR	Pending closure of CAR04. CAR#04 closed out.	CAR04 is raised Y
B.2.3. Is there any GHG emissions occurring within the project boundary as a result of the implementation of the proposed project which are expected to contribute more than 1% of the overall expected average	VVS Para 89	DR/S V/I	There is no potential GHG emissions that contribute more than 1% of overall expected average annual emission reductions..	Y

annual ERs, which are not addressed by the applied methodology.				
B.2.4. Does the methodology allows project participants to choose whether a source or gas is to be included within the project boundary? If yes, has it been determined whether the project participants have justified that choice. Is the justification provided by the project participants reasonable, based on an assessment of supporting documented evidence provided by the project participants and corroborated by observations if required	VVS para 85,	DR	The PP has correctly chosen a source or gas is to be included within the project boundary which was found justified reasonable.	Y
B.2.5. Is the applicability of the selected methodology satisfied?	VVS Para.78	DR	The applied baseline methodology ACM 0002, version 16.0 was found to be the latest version available of the methodology approved by the CDM Methodology Panel.	Y
B.3.				
B.3.1. Does the project boundary include the physical delineation of the proposed CDM project activity?	VVS Para.85-87 PDD section B.3 also see section A.1 and A.3	DR/S V	The project boundary is correct and meets the requirements of the selected baseline methodology	Y
B.3.2. Are all emission sources and gases related to the baseline scenario, project scenario and leakage clearly identified	VVS Para.84 PDD section B.3	DR	All emission sources and gases related to the baseline scenario, project scenario and leakage clearly identified and described in a complete and transparent manner	Y

and described in a complete and transparent manner?				
B.3.3. In case of grid connected electricity projects: Is the relevant grid correctly identified in accordance with the latest version of tool to calculate emission factor of electricity system (wherever applicable) and the underlying methodology?	VVS Para.85–87 PDD section B.3	DR	The PP is requested to clarify that why the updated version of the tool to calculate emission factor of electricity system, version 3.0, EB70, annex22 has not been applied. CAR#05 closed out.	CAR#05 raised Y
B.3.4. Are the project's geographical boundaries and the project's system boundaries (components and facilities used to mitigate GHGs) clearly defined?	VVS Para.85-87 PDD section B.3 also see section A.1 and A.3	DR	All sources and GHGs required by the methodology have been included within the project boundary.	Y
B.4.				
B.4.1. Does the PDD discuss the identification of the most likely baseline scenario? Does the PDD follow the steps to determine the baseline scenario required by the methodology/tool and has the application of the tools as per methodology been consulted, if the Tool(s) are required by the methodology?	VVS Para..92 PDD Section B.4	DR	The PDD has correctly defined the baseline scenario as per the provisions of the methodology, ACM0002, version 16, para 2. Since the project is the installation of a new grid-connected renewable power plant, the baseline scenario will be Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system". In this case, the PP has chosen the baseline scenario is the grid connected power plants to SAPP (South African Power Pool).	Y

B.4.2. Have all applicable CDM requirements been taken into account in the identification of the baseline scenario, including "relevant national and/or sectoral policies and circumstances?"	VVS Para.92-97 PDD Section B.4	DR	All the tools/procedures in the methodology are correctly applied to identify the most reasonable baseline scenario. This includes all potential realistic and credible baseline scenarios in the discussion taking into account relevant national and/or sectoral policies, macro-economic trends and political aspirations.	Y
B.4.3. Are all potential realistic and credible alternative scenarios listed in the methodology are considered in identification of the most reasonable baseline scenario? Are all scenarios are reasonable in the con-text of the proposed CDM project and no reasonable alternative scenario has been excluded?	VVS Para.92-97 PDD Section B.4	DR	All the tools/procedures in the methodology are correctly applied to identify the most reasonable baseline scenario. This includes all potential realistic and credible baseline scenarios in the discussion taking into account relevant national and/or sectoral policies, macro-economic trends and political aspirations.	Y
B.4.4. Is the choice of the baseline compatible with the available data?	VVS Para.92-97 PDD Section B.4	DR	All the assumptions and data used by the project participants are not listed in the PDD, including their references and sources. The PP is requested the clarify the same CAR#06 closed out.	CAR06 raised Y
B.5. Additionality				
B.5.1. Does the PDD clearly demonstrate the additionality using the approach as specified in the methodology and by	VVS Para 107-109 EB 54 report, annex 15	DR	The PDD clearly demonstrate the additionality using the approach as specified in the methodology.	Y

following all the required steps?				
B.5.2. In case of using the additionality tool: Is the 'Additionality Tool' used in the PDD latest version? If an earlier version has been used, do the changes impact the discussion in the PDD? Are all steps followed in a transparent manner?	PDD Section B.1/B.4/B.5	DR	PP has adopted the latest applicable version of the 'Tool for demonstration and assessment of Additionality', version 7.0 in the final PDD.	Y
B.5.3. Has all information been backed up with references, sources and certification? Is the data presented credible and reliable with complete transparency to all available data and documentation?	VVS Para.107 PDD Section B	DR	All the assumptions and data used by the project participants are not listed in the PDD, including their references and sources. The PP is requested the clarify the same. The final PDD has addressed the issue and CAR#06 closed out.	CAR#06 raised Y
B.5.4. Is the discussion on additionality and the evidence provided consistent with the starting date of the project? If the project activity start date is prior to the validation is it discussed how the CDM was taken into account in the decision to go ahead with the project activity	VVS Para.113 PDD Section B.5	DR	PP has not specified the start date of the project activity as per the definition of project start date EB 70 Annex 7. PPA date was found to be 08/04/2011 as compared to 05/05/2011 in the PDD. Request for LoA from DNA is on 21/11/2012 whereas PDD mentions as 22/03/2012. It is not clear from the PDD when the prior consideration was intimidated to DNA of Zambia as per the requirements of VVS para 105 and EB 65 Annex 4. The final PDD has specified the references and sources related to the assumptions and information used for demonstration of barrier analysis. The start date of the project activity of 08/04/2011 was found to be consistent with the requirement of EB 70 Annex 7 definition of start date and hence accepted. Date of PPA was found to be corrected to 08/04/2011 in the PDD and thus accepted. Prior consideration details for the request to the DNA was found to be consistently mentioned in the	CAR#06 Y

			PDD version 02 dated 11/08/2014 and thus accepted. Thus CAR#06 closed out.	
B.5.5. Is the project activity a new project activity or existing project activity? How is the early consideration demonstrated?	VVS Para.113 PDD Section B.5	DR	The start date of the project was 16/11/2011 which is “new project activity”. The PP has confirmed their status to seek to UN for CDM on 03/05/2011. Hence, it was concluded that the early consideration to seek CDM status has been demonstrated by the PP.	Y
B.5.6. For an existing project activity with a start date before 2 August 2008, for which the start date is prior to the date of publication of the PDD for global stakeholder consultation, is the real documented evidence for an assessment of real and continuing actions available for validation and is this evidence authentic?	VVS Para 112-113	DR	The project does not fall under the category of existing project. The start date of the project was 16/11/2011 which is “new project activity”.	Y
B.5.7. Are all credible and plausible alternatives correctly identified? Do the identified baseline scenarios include technologies and practices that include outputs or services comparable with the proposed CDM project activity? Do they also abide by the same applicable laws and legislations?	VVS Para. 121-122 PDD Section A.3/B.5	DR	The discussion on additionality is consistent with the identification of all plausible and credible baseline scenarios.	Y

B.5.8. If an investment analysis has been used, has it been demonstrated that the proposed project activity is not the most economically or financially attractive alternative, or is not economically or financially feasible, without the revenue from the sale of CERs.	VVS Para. 125-129 PDD Section B.5	DR	The PP has opted for barrier option and has not carried out the investment analysis.	Y
B.5.9. Is the investment analysis carried out in accordance with specific guidance from EB?	VVS Para. 129	DR	The PP has opted for barrier option and has not carried out the investment analysis.	Y
B.5.10. Is the investment analysis complete and accurate? (Important)	VVS Para. 125-129 PDD Section B.5	DR	The PP has opted for barrier option and has not carried out the investment analysis.	Y
B.5.11. Does the investment analysis rely on the values from Feasibility Study Reports (FSR) that approved by national authorities for proposed CDM project activity?	VVS Para. 125-129 PDD Section B.5	DR	The PP has opted for barrier option and has not carried out the investment analysis.	Y
B.5.12. If a benchmark is used, is it ensured that it is selected in accordance with the requirements of the tool /methodology and it represents standard returns in the market (not linked to the subjective profitability expectation or	VVS Para.128 PDD Section B.5	DR	The PP has opted for barrier option and has not carried out the investment analysis.	Y

risk profile of a particular project developer).				
B.5.13. If a barrier analysis has been used, has it been shown that the proposed project activity faces barriers that prevent the implementation of this type of proposed project activity but would not have prevented the implementation of at least one of the alternatives?	VVS Para. 132-133 PDD Section B.5 EB50, Annex 13	DR	It was hereby confirmed by the assessment team that the project activity would not be: (a) Prevent the implementation of this type of proposed CDM project activity; (b) Do not prevent the implementation of at least one of the alternatives.	Y
B.5.14. Is the discussion on additionality consistent with the identification of all plausible and credible baseline scenarios?	VVS Para. 132-133 PDD Section B.5	DR	The discussion on additionality consistent with the identification of all plausible and credible baseline scenarios	Y
B.5.15. Has the barriers correctly identified and they prevent the implementation of the project activity but not the implementation of at least one of the possible alternatives.	VVS Para. 132-133 PDD Section B.5 EB50, Annex 13	DR	The barriers correctly identified and they prevent the implementation of the project activity but not the implementation of at least one of the possible alternatives.	Y
B.5.16. If a barrier analysis has been used have the 'guidelines for objective demonstration and assessment of barriers' been followed? Have all applicable steps been considered and substantiated with objective evidence?	VVS Para. 132-133 PDD Section B.5 EB50, Annex 13	DR	Tool for the demonstration and assessment of additionality has not been used stepwise. Final PDD has addressed the issue, CAR#07 closed out.	CAR#07 Y

B.5.17. Do the identified baseline scenarios include technologies and practices that include outputs or services comparable with the proposed CDM project activity? Do they also abide by the same applicable laws and legislations?	VVS Para. 132 PDD Section A.3/B.5	DR	The baseline scenarios include technologies and practices that include outputs or services comparable with the proposed CDM project activity.	Y
B.5.18. Is the proposed project type is justified as first-of-its kind?	VVS Para. 135 PDD Section A.3/B.5 EB 69 Annex 07	DR	The proposed project type not first-of-its kind, hence the PP has demonstrated the common practice analysis	Y
B.5.19. Is the project activity not common practice?	VVS Para. 7.1 135 PDD Section B.5 EB 69 Annex 8	DR	Common practice analysis has not been done as per the requirements of Guideline for Common Practice Analysis" version 3.1 and VVS ver. 07 para 136. PP has to clarify in this regard. Final PDD has addressed the issue, CAR#08 closed out.	CAR #08 Y
B.5.20. What are the key distinctions between the project activity and any similar projects that are widely used as common practice?	VVS Para. 136 PDD Section B.5 EB 69 Annex 8	DR	The proposed project is the first to be implemented in Zambia under public private partnership (PPP) arrangement; • Most of the existing hydropower projects were completed, or commenced, prior to Zambian independence; • All existing hydropower plants and mini hydro's were commissioned latest by 1976 (i.e. over 36 Years ago).	Y
B.5.21. Is the proposed project activity additional?	PDD Section B.5	DR	From the above assessments under Section: B.5, it is clear that the project activity is additional.	Y

B.6.

B.6.1. Are the steps and equations applied to calculate baseline emissions in compliance with the requirements of selected baseline and monitoring methodology?	VVS 102, 103	DR	The steps and equations applied to calculate baseline emissions in compliance with the requirements of selected baseline and monitoring methodology	Y
B.6.2. Are the steps and equations applied to calculate project emissions in compliance with the requirements of selected baseline and monitoring methodology?	VVS 102, 103	DR	The steps and equations applied to calculate project emissions in compliance with the requirements of selected baseline and monitoring methodology	Y
B.6.3. Are the steps and equations applied to calculate leakages in compliance with the requirements of selected baseline and monitoring methodology?	VVS 102, 103	DR	The steps and equations applied to calculate leakage is in compliance with the requirements of selected baseline and monitoring methodology	Y
B.6.4. Are the steps and equations applied to calculate emission reductions in compliance with the requirements of selected baseline and monitoring methodology?	VVS 102, 103	DR	The steps and equations applied to calculate emission reductions is in compliance with the requirements of selected baseline and monitoring methodology	Y
B.6.5. Where there is an option between different equations or parameters, has the methodological choices for the project been explained, have they	VVS 97,98,99a	DR	The steps and equations applied to calculate emission reductions is in compliance with the requirements of selected baseline and monitoring methodology	Y

been properly justified and are they correct?				
B.6.6. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?	PDD Sections B.5-C	DR	All the uncertainties in the GHG emissions estimates are properly addressed in the PDD	Y
B.6.7. Are the ex-ante fixed data provided in compliance with the methodology and/or relevant tools (if applicable)?	VVS 102, 103 PDD Section B.6.3B.6.4	DR	The ex-ante fixed data provided in compliance with the methodology and/or relevant tools	Y
B.6.8. Is all the data derived from official data sources or replicable records and have these been correctly quoted?	VVS Para. 102,103 PDD Section B.6.3/B.6.4	DR	All the data derived from official data sources or replicable records and have these been correctly quoted	Y
B.6.9. Is the vintage of the baseline data correct?	PDD Section B.6.3/B.6.4	DR	The vintage of the baseline data is correct	Y
B.6.10. Is all the data appropriate and correctly applied to the CDM project activity?	VVS Para. 103 PDD Section B.6.3/B.6.4	DR	All the data are appropriate and correctly applied to the CDM project activity	Y
B.6.11. Are data and parameters that are not being monitored and remained fixed throughout the crediting period appropriately assessed, correct, and will they result in conservative estimates?	VVS Para. 103 PDD Section B.6.3/B.6.4	DR	All the data and parameters that are not being monitored and remained fixed throughout the crediting period have been appropriately assessed. The estimated parameters set out in the PDD are considered reasonable.	Y
B.6.12. Are the ex-post monitored data estimated appropriated for calculation of ex-ante	VVS 103 PDD Section B.6.3B.6.4	DR	The ex-post monitored data estimated appropriated for calculation of ex-ante emission reductions	Y

emission reductions?				
B.6.13. Is sampling approach used for any parameters?	EB74 Annex 6 v4.1	DR	No sampling approach has been used.	Y
B.6.14. Are all the steps taken and equations applied to calculate project emissions, baseline emissions and leakage and emission reductions correct and appropriate?	VVS 102-103	DR	All the steps taken and equations applied to calculate project emissions, baseline emissions and leakage and emission reductions correct and appropriate	Y
B.6.15. Where applicable, the plant load factor shall be defined ex-ante in the CDM-PDD according to one of the following three options: (a) The plant load factor provided to banks and/or equity financiers while applying the project activity for project financing, or to the government while applying the project activity for implementation approval; (b) The plant load factor determined by a third party contracted by the project participants (e.g. an engineering company)	EB 48 Annex 11	DR	The PP is requested to provide information and justify on the expected PLF considered for the ITPC in line with the guidance provided in EB48 Annex 11. Final PDD has addressed the issue, CAR#09 closed out.	CAR09 is raised Y
B.7.				
B.7.1. Does the monitoring methodology provide a	VVS Para. 139	DR	It is not clear from the PDD how many meters will be installed as there are two units of power generation as per the project plan. Meter accuracy class is not clear and	CL10 raised

consistent approach in the context of all parameters to be monitored and further information provided by the PDD? Are all parameters and data that are available at validation consistent with the approved methodology. Has this data been interpreted and applied correctly?	PDD Section B.7-B.8 see also Annex 4		also the frequency of calibration and internal audit is not clear from the description in the PDD section B.7 and B.8. PP has to clarify in this regard as per the requirement of VVS para 72e. CL#10 was raised in this regard. The PP had provided the detailed information in the revised PDD and hence CL#10 closed out.	Y
B.7.2. Is the monitoring plan compliant with the approved monitoring methodology and/or relevant tools (if applicable)?	VVS Para. 139 PDD Section B.7	DR	The monitoring plan is compliant with the approved monitoring methodology and/or relevant tools	Y
B.7.3. Is the implementation of monitoring plan feasible and verifiable.	VVS Para. 139 PDD Section B.7	DR	The implementation of monitoring plan was checked and found feasible and verifiable	Y
B.7.4. Is it ensured that data provisions will be free of potential conflicts of interests resulting in a tendency of overestimating emission reductions?	VVS Para. 139	DR	It is ensured that data provisions will be free of potential conflicts of interests resulting in a tendency of overestimating emission reductions.	Y
B.7.5. Is the proposed monitoring plan compliance with the	VVS Para.139	DR	The proposed monitoring plan compliance with the methodology/tools and feasible for implementation	Y

methodology/tools and feasible implementation?				
B.7.6. Does the information contained in Annex 4 in consistency with the information in Section B.7 of PDD?	PDD Annex 4	DR	The information contained in Annex 4 in consistency with the information in Section B.7 of PDD	Y
B.7.7. Does the monitoring plan in the PDD comply with the approved methodology provided for the collection and archiving of all relevant data necessary for estimation or measuring the emission reductions within the project boundary during the crediting period?	VVS Para. 139 PDD Section B.7-B.7.2	DR	The monitoring plan in the PDD comply with the approved methodology provided for the collection and archiving of all relevant data necessary for estimation or measuring the emission reductions within the project boundary during the crediting period	Y
B.7.8. Are the choices of project GHG indicators reasonable and in conformance with the requirements set by the approved methodology applied?	PDD Section B.7-B.7.2/B.6.2	DR	The choices of project GHG indicators reasonable and in conformance with the requirements set by the approved methodology applied	Y
B.7.9. Will it be possible to determine the specified project GHG indicators?	PDD Section B.6.2-B.8	DR	It is possible to determine the specified project GHG indicators	Y
B.7.10. Is the information given for each monitoring variable by the presented table	PDD Section B.6.2-B.7.1	DR	The information given for each monitoring variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan	Y

sufficient to ensure the verification of a proper implementation of the monitoring plan?				
B.7.11. Is the monitoring approach in line with current good practice, i.e. will it deliver data in a reliable and reasonably acceptable accuracy?	PDD Section B.5-B.7.2	DR	The monitoring approach is in line with current good practice, i.e. will it deliver data in a reliable and reasonably acceptable accuracy	Y
B.7.12. Are all formulae used to determine project emission clearly indicated and in compliance with the monitoring methodology.	PDD Section B.6.2-B.7.1	DR	All formulae used to determine project emission clearly indicated and in compliance with the monitoring methodology	Y
B.8.				
B.8.1. Is the authority and responsibility of project management clearly described?	PDD Section B.7	DR	The authority and responsibility of project management is clearly described	Y
B.8.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	PDD Section B.8	DR	The authority and responsibility for registration, monitoring, measurement and reporting clearly described	Y
B.8.3. Are procedures	PDD Section B.7	DR	The procedures are identified for training of monitoring personnel	Y

identified for training of monitoring personnel?					
B.9.					
B.9.1.	Is the information contained in Annex 3 consistent with the Section B.4, B.5 and B.6?	PDD Annex 3	DR	The information contained in Annex 3 is consistent with the Section B.4, B.5 and B.6	Y
B.9.2.	Is there any indication of a date when determining the baseline?	PDD Section B.8/Annex 3	DR	The date of determining the baseline was 19/11/2012	Y
B.9.3.	Is this consistent with the time line of the PDD history?	PDD Section B.8	DR	This is consistent with the PDD history	Y
B.9.4.	Is all data required provided in a complete manner by annex 3 of the PDD?	PDD Annex 3	DR	All the data required is provided in a complete manner	Y
B.9.5.	What is the documented crediting period of the project? Is this in line with available data?		DR	The proposed start date of the crediting period has been mentioned as 15 th July 2015 or the date of registration which is later.	Y
B.9.6.	In cases where the methodology specifies, has the ' <i>Tool to determine the remaining lifetime of equipment</i> ' been correctly applied?	EB 50 Annex 15	DR	Not applicable. The project activity is new green field project.	Y
B.9.7.	In cases where the ' <i>Tool to determine the remaining lifetime of equipment</i> ' has been used the project participants may use	EB 50 Annex 15	DR	Not applicable. The project activity is new green field project.	Y

<p>one of the following options to determine the remaining lifetime of the equipment:</p> <p>i. Use manufacturer's information on the technical lifetime of equipment and compare to the date of first commissioning;</p> <p>ii. Obtain an expert evaluation;</p> <p>iii. Use default values.</p>				
B.10.				
B.10.1. Is there any indication of a Sampling?	PDD Section B.7.2/Annex 3 EB74 Annex 6 v4.1	DR	There is no sampling involved	Y
B.10.2. Is the sampling consistent with the requirement of the methodology ?	Also see revision history of the PDD Standard for sampling and surveys for CDM project activities and programme of activities EB74 Annex 6 v4.1	DR	There is no sampling involved	Y
B.10.3. Is all data required provided in a complete manner by annex 5 of	PDD Annex 5 EB 69 Annex 4&5	DR	Project monitoring plan does not involve any sampling procedure.	Not applicable

the PDD?	and EB 67 Annex 6 EB74 Annex 6 v4.1			
C.				
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	PDD Section C.1.1/C.1.2	DR	In the initial PDD, the project start date was not clear. . The PP is requested to clarify the same. The expected operational lifetime of the proposed project activity has been specified as 25 years, which is found to be justified for a hydro power plant. The final PDD has duly demonstrated the project start date as per the definition provided under CDM Glossary of Terms. Thus CAR#06 was closed out.	CAR #06 is raised Y
C.1.2. Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)?	Section C.2/C.2.1/C.2.2	DR	The crediting period is fixed for 10 years	Y
C.1.3. Does the project's operational lifetime exceed the crediting period	PDD Section C.1.2/C.2.1.1/C.2.1.2	DR	The expected 25 years operational lifetime of the project exceed the selected 10 years fixed crediting period.	Y
C.1.4. Does the start date indicate whether this is a new project activity or a pre-existing project activity?	PDD Section C.1.1/C.2.1.1	DR	Pending closure of CAR#04. The PP had provided the detailed information in the revised PDD and thus CAR#06 was closed out.	CAR#06 Y
D.				
D.1.1. Does the project comply with environmental legislation in the host	VVS Para. 141-143	DR	The project comply with environmental legislation in Zambia	Y

country?	PDD section D			
D.1.2. Has an analysis of the environmental impacts of the project activity been sufficiently described?	VVS Para. 141-143 PDD section D	DR	The environmental impacts of the project activity have been sufficiently described	Y
D.1.3. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	VVS Para. 141-143 PDD section D	DR	There is no other host country involved	Y
D.1.4. Will the project create any adverse environmental effects?	VVS Para. 141-143 PDD section D	DR	No, adverse effect is being created by the project	Y
D.1.5. Are trans-boundary environmental impacts considered in the analysis?	VVS Para. 141-143 PDD section D	DR	All trans-boundary environmental impacts considered in the analysis	Y
D.1.6. Have identified environmental impacts been addressed in the project design?	VVS Para. 141-143 PDD section D	DR	No, adverse effect is being created by the project	Y
E.				
E.1.1. Have local stakeholders been invited by the PPs to comment on the proposed CDM project activity prior to the publication of the PDD on the UNFCCC web	VVS Para. 146 PDD Section E.1	DR	The PP is hereby requested to illustrate the stake holders consultation process and provide information as a mandatory requirement of the CDM project activity categorically with regard to the following as appended hereunder; 1. Appropriate media been used to invite comments by local stakeholders. 2. The undertaken stakeholder process described in a complete and transparent manner. 3. Summary of the stakeholder comments received during such consultation process.	GL11 raised Y

			<p>4. How has due account been taken of any stakeholder comments if received any.</p> <p>Kindly provide information comprehensively under section E of the web hosted version of the PDD and provide supportive evidence towards substantiation of the same. CL#11 was raised.</p> <p>The same was provided by the PP and hence CL#11 was closed out.</p>	
E.1.2. Have appropriate media been used to invite comments by local stakeholders?	VVS Para. 146 PDD Section E.1	DR	Please refer section E.1.1 above.	Y
E.1.3. Is the undertaken stakeholder process described in a complete and transparent manner?	VVS Para. 146 PDD Section E.1	DR	Please refer section E.1.1 above.	Y
E.1.4. Is a summary of the stakeholder comments received provided?	VVS Para. 146 PDD Section E.2	DR	Please refer section E.1.1 above.	Y
E.1.5. Has due account been taken of any stakeholder comments received?	VVS Para. 146 PDD Section E.3	DR	Please refer section E.1.1 above.	Y
E.1.6. How the team validate the adequacy of stakeholder consultation?	VVS Para. 146	DR	Please refer section E.1.1 above.	Y

A.3 Annex 3: Overview of Findings

Findings Overview Summary

	CARs	CLs	FARs
Total Number raised	09	02	00

Date:	20/06/2013	Raised by:	Assessment Team		
Type:	CAR	Number:	01	Reference:	A.1.3
Lead Assessor Comment:					
The 1 st page of the PDD lists only ITPC as the PP whereas Tata Africa was found to be mentioned in Appendix-1 of the webhosted PDD, version 1 dated 19/11/2012. PP has to clarify this inconsistency as per requirement of EB 66 Annex 8.					
The current implementation status is not clear from the webhosted PDD. PP has to clarify in this regard.					
Project Participant Response:			Date: 07/08/2014		
<i>Reference to Tata Africa has been removed from Appendix 1, as ITPC is the sole PP.</i>					
<i>New contact details have been provided in appendix 1 for contact person on behalf of ITPC.</i>					
<i>Document entitled "Project Brief" is submitted, which details the current implementation status of the project, including relevant pictures.</i>					
Documentation Provided by Project Participant:					
<i>"Project Brief", dated August 6 2014, page 26 (ITEZHI TEZHI PROJECT BRIEF.pdf)</i>					
Information Verified by Lead Assessor:					
Project Brief", dated August 6 2014, page 26 (ITEZHI TEZHI PROJECT BRIEF.pdf)					
PDD version 02 dated 11/08/2014 (Second webhosted version)					
Note: This finding was raised based on the initial webhosted PDD. However, in continuation to the FO response dated 07/08/2014, PDD, v2 was re webhosted by the PP which was for ISHC from 19/08/2014 until 17/09/2014 based on which the subsequent the assessment was done.					
Reasoning for not Acceptance or Acceptance and Close Out:			Date: 18/09/2014		
The reference to Tata Africa was found to be removed from the PDD and thus accepted. New contact details were checked with the MoC dated 05/08/2014 and found to be consistent hence accepted.					
The project brief document dated 06/08/2014 page 26 was checked however, the PP is requested to clearly mention the current implementation status of the power plant along with the implementation plan of the project in section A.1 of the PDD as per requirement of VVS version 7.0 paragraph 28.					
Acceptance and Close out by Lead Assessor:			Date: 18/09/2014		
Project Participant Response:			Date: 10/10/2014		
Detailed description of current implementation status of the plant has been included in section A.1 of the PDD, along with projected operational start date.					
Note that VVS version 7.0 paragraph 28 relates to forward action request, and it is not clear the relevance to this CAR.					
Documentation Provided by Project Participant:					
PDD version 03 dated 09/10/2014					
Information Verified by Lead Assessor:					
PDD version 03 dated 09/10/2014					
Reasoning for not Acceptance or Acceptance and Close Out:			Date: 10/10/2014		
The detailed implementation status of the plant was checked and found to be consistent as per the implementation plan checked on site and thus accepted.					
However, Appendix 1 of the PDD and MOC has not included the contact details of ZESCO Ltd., this contradicts with Section A.4 of the PDD which states ZESCO Ltd. is one of the project participant. Please clarify. CAR#01 is re-opened.					
Acceptance and Close out by Lead Assessor: Open			Date: 12/07/2015		

Project Participant Response:	Date: 12/07/2015
Section A.4 amended and Zesco Ltd removed from table	
Documentation Provided by Project Participant:	
Revised PDD, version 7 dated 07/07/2015	
Information Verified by Lead Assessor:	
The PP had excluded ZESCO as the PP from section A.4 and the project participant details are found to be consistent with Appendix 1 of the PDD and the MOC. Thus, CAR#01 is closed out.	
Reasoning for not Acceptance or Acceptance and Close Out: Closed	Date: 14/07/2015

Date:	20/06/2013	Raised by:	Assessment Team		
Type:	CAR	Number:	02	Reference:	A.3.2 & A.3.4
Lead Assessor Comment:					
The region mentioned in the PDD is not matching with the political location of the site. PP has to clarify in this regard as per the requirement of VVS para 40-42 Coordinates provided in the PDD are in decimals. PP is requested to provide coordinates in Degree, minute seconds as per the provisions of EB 66 Annex 8					
Project Participant Response:			Date: 07/08/2014		
Section A.2.2 has been updated to reflect that project is in Central Province following realignment of districts. Coordinates for the hydropower plant have now been provided in degree, minute and seconds.					
Documentation Provided by Project Participant:					
PDD version 02 dated 11/08/2014 (Second webhosted version)					
Information Verified by Lead Assessor:					
PDD version 02 dated 11/08/2014					
Note: This finding was raised based on the initial webhosted PDD. However, in continuation to the FO response dated 07/08/2014, PDD, v2 was re webhosted by the PP which was for ISHC from 19/08/2014 until 17/09/2014 based on which the subsequent the assessment was done.					
Reasoning for not Acceptance or Acceptance and Close Out:			Date: 18/09/2014		
The region mentioned in the PDD is consistent with the location of the site and as per the requirement of VVS para 40-42 and thus accepted. Coordinates provided in the PDD was found to be corrected and also checked and found to be correct and thus accepted.					
PDD, section B.2: PP has to mention the correct identification of meth as ACM0002 along with version number. The applicability conditions described twice in this section. Is there any specific reason (just for my knowledge). Please clarify					
P. 15, 16: PP to clarify keep comma b/w foot note number (if more than one).Issue not for FO.					
P.20 -Step 4: Common practice analysis PP to clarify discuss/define the following before starting discussion in Step <u>1</u> :					
<ul style="list-style-type: none">Geographical area selected for CP analysis with justification or reference of guidelinesCriteria to select the projects under category “different technology”.					
P.22: The project will reduce 424,975 tCO2/year, not clear how this was calculated.					
P.23: please confirm if both parameters are same or different EG _{pj, y} and EG _{PJ,y} PP has to rectify the formatting error in the last 2 lines on page 23.					
Section B.6.3: PP to correct the version of the methodology.					
Section B.7.1: Please clarify why the monitoring frequency, source of data and QA/QC procedure for the parameter “Net calorific value of diesel” and “Emission factor for diesel in year y” is not mentioned as per the “Tool to calculate project or leakage CO2 emissions from fossil fuel combustion”. If reference of the tool is to be mentioned in this section then please report the version of the tool too.					
Section B.7.3:					
P.31 Para 1					

<p>“ZESCO Ltd will record the electricity at the point of connection to SAPP grid system on monthly and annual basis and <u>record the mass of SF6 leaked that will be equivalent to the amount of SF6 replaced during maintenance</u>. The readings at the generation site and point of dispatch to SAPP grid will be used in estimating the transmission loss between the two points that will be recorded by ZESCO Ltd”.</p> <p>With reference to above paragraph, please clarify purpose and relevance of underlined sentence for project activity. Also clarify why the TL is not included as monitoring parameter in section B.7.1.</p> <p>SECTION C to F. font size is to be corrected in the title.</p> <p>Appendix 1- Contact information of the “Responsible person/ entity for application of the selected methodology” is not consistent with section B.7.4. PP to mention the version of the methodology in the ER calculation sheet.</p>	
Acceptance and Close out by Lead Assessor: Open	Date: 07/05/2015
Project Participant Response:	Date: 19/05/2015
<p>PDD, section B.2: Correct identification of meth as ACM0002 along with version number has been mentioned. Repetition of applicability conditions has been removed, and conditions only mentioned once.</p> <p>P. 15, 16: Comma added between each foot note number.</p> <p>P.20 -Step 4: Common practice analysis PP has clarified:</p> <ul style="list-style-type: none"> Geographical area selected for CP analysis with reference to guidelines Criteria to select the projects under category “different technology”. <p>P.22: Values used for calculation that the project will reduce 424,975 tCO₂/year provided in footnote.</p> <p>P.23: PP confirms that both parameters EG_{pj, y} and EG_{PJ,y} are same, and this has been corrected for consistency. PP has rectified the formatting error in the last 2 lines on page 23.</p> <p>Section B.6.3: PP has corrected the version of the methodology to version 15.</p> <p>Section B.7.1: Monitoring frequency, source of data and QA/QC procedure for the parameters “Net calorific value of diesel” and “Emission factor for diesel in year y” have been amended to be consistent with the “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion”. Version of “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion” has been stated.</p> <p>Section B.7.3:</p> <p>P.31 Para 1 The paragraph in question was not relevant and has therefore been removed.</p> <p>SECTION C to F. Font size of title has been corrected.</p> <p>Appendix 1- Contact information of the “Responsible person/ entity for application of the selected methodology” is now consistent with section B.7.4.</p> <p>PP mentioned the version of the methodology in the ER calculation sheet.</p>	
Documentation Provided by Project Participant:	
Revised PDD, version 6 dated 17/05/2015 (The details not provided by the PP)	
Information Verified by Lead Assessor:	
Revised PDD, version 6 dated 17/05/2015	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 02/06/2015
<ul style="list-style-type: none"> Section B.2 of the PDD: The revised PDD, version 6 now correctly refer the methodology details as ACM0002, version 15.0 in page 7 and hence is accepted. The repetition of the applicability criteria is now removed from page 8 of the revised PDD, version 6 dated 17/05/2015 and hence is accepted. Page 15,16: 	

The footnote has now been found to be clearly separated using proper indexing and commas in the revised PDD, version 6 dated 17/05/2015 and hence is accepted.

- **Page 20-step 4: Common Practice Analysis**

The common practice analysis have now been completed in line with the “Guidelines on common practice”, version 3.1 in page 20 of the revised PDD, version 6 dated 17/05/2015 and hence is accepted.

- **Page 22:**

The detailed calculation to arrive at the annual emission reduction 589,248 tCO₂/ year is now been provided in the footnote correctly in the revised PDD, version 6 dated 17/05/2015 and hence is accepted.

- **Page 23:**

The PP had corrected the parameter EG_{PJ,y} in the revised PDD, version 6 dated 17/05/2015 and was found to be consistent with the methodology ACM0002, version 15, page 14 and hence is accepted.

- **Section B.6.3:**

The version of the methodology has now been corrected in the revised PDD, version 6 dated 17/05/2015 and hence is accepted.

- **Section B.7.1:**

The monitoring frequency, source of data and QA/QC procedure for the parameters “net calorific value of diesel” and “emission factor for diesel in year y” have now been made consistent with the “tool to calculate the project or leakage CO₂ emissions from fossil fuel combustion”, version 2 and hence is accepted.

- **Section B.7.3,Page.31 Para 1:**

The PP has now deleted the para related to SF₆ leakage as it is not related to ACM0002, version 15 monitoring requirements and hence is accepted.

- **SECTION C to F.**

The font size has now been made consistent throughout in the revised PDD, version 6 dated 17/05/2015.

- **Appendix-1:**

The contact information has been made consistent with section B.7.4 of the revised PDD, version 6 dated 17/05/2015.

The PP have now mentioned the version of the methodology in the ER calculation sheet correctly and hence is accepted.

Thus, **CAR02** was closed out.

Acceptance and Close out by Lead Assessor: Closed	Date: 02/06/2015
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Date:	20/06/2013		Raised by:	Assessment Team		
Type:	CAR	Number:	03		Reference:	A.3.5
Lead Assessor Comment:						
The MOC was not provided during the initial desk review. PP is requested to provide MOC as per the requirements of EB 48 Annex 60						
LoA date is mentioned as 18/06/2012 whereas the actual LoA is on 17/01/2013.PP has to clarify in this regard						
Project Participant Response:				Date: 07/08/2014		
Signed MOC submitted with revised PDD.						
Date of LoA corrected to 17/01/2013 (see table 10).						
Documentation Provided by Project Participant:						
MOC signed on 05/08/2014 (Modalities of Communication Statement0002.pdf)						
Information Verified by Lead Assessor:						
MOC dated 05/08/2014						
PDD version 02 dated 11/08/2014						
Note: This finding was raised based on the initial webhosted PDD. However, in continuation to the FO response dated 07/08/2014, PDD, v2 was re webhosted by the PP which was for ISHC from 19/08/2014 until						

17/09/2014 based on which the subsequent the assessment was done.	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 18/09/2014
MOC dated 05/08/2014 was checked and found to be consistent with the information in Appendix 1 of the PDD and thus accepted. LoA date was found to be corrected in the PDD and thus accepted.	
Acceptance and Close out by Lead Assessor: Closed	Date: 18/09/2014

Date:	20/06/2013	Raised by:	Assessment Team		
Type:	CAR	Number:	04	Reference:	B.1.2, B.2.1
Lead Assessor Comment:					
The PP is requested to refer, quote and apply the methodology (and the tools) correctly by comparing it to the latest available tools throughout the PDD as per requirement of VVS para 71 The approved methodology was found to be applicable to the project activity. However, it was not clearly mentioned how the conformance with each criterion has been met in particular towards the documentary evidence. The PP is requested to clarify the same as per VVS para 76					
Project Participant Response:				Date: 07/08/2014	
<i>The version of the tool has been updated to reflect the current valid version (version 15.0) of the methodology, and amendments have been made to the PDD to reflect that version and latest available tools at time date above.</i> <i>Documentary evidence is submitted in the form of document entitled "Project Brief", which clearly describes the project and confirms that the project activity involves installation of a Greenfield power plant using an existing reservoir/dam (i.e. no new dam or increase in volume of existing reservoir).</i>					
Documentation Provided by Project Participant:					
<i>"Project Brief", dated August 6 2014, page 26 (ITEZHI TEZHI PROJECT BRIEF.pdf), pages 6 – 23.</i> <i>PDD version 02 dated 11/08/2014 (Second webhosted version)</i>					
Information Verified by Lead Assessor:					
<i>"Project Brief", dated August 6 2014, page 26 (ITEZHI TEZHI PROJECT BRIEF.pdf), pages 6 – 23.</i> <i>PDD version 02 dated 11/08/2014</i>					
Note: This finding was raised based on the initial webhosted PDD. However, in continuation to the FO response dated 07/08/2014, PDD, v2 was re webhosted by the PP which was for ISHC from 19/08/2014 until 17/09/2014 based on which the subsequent the assessment was done.					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 18/09/2014	
The PDD version 02 dated 11/08/2014 was checked and found to be covering the aspects of versions of tools related to the methodology ACM0002 version 15.0 and thus accepted. Further the applicable criteria for the methodology was found to be justified with regard to the project activity and thus accepted as per provisions of para 78 of VVS 7.0.					
CAR#04 is re-opened due to the following discrepancies observed:					
<ul style="list-style-type: none">As per the Tool to calculate project or leakage CO2 emissions from fossil fuel combustion", (Version 02) the IPCC default values for the parameter IPCC 2006 default values for $NCV_{i,y}$ and $EF_{CO2,i,y}$ at the upper limit of the uncertainty at a 95% confidence interval should be considered. Please justify the compliance in the PDD and ER sheet (Cell D21, D22).In the project case FCi,j,y will be measured in a volume unit, please clarify why the Density of Diesel has not been included as the parameter to be monitored which is actually used in the ex-ante ER calculation sheet.Under Section B.7.1 of the PDD, regarding choice of Data sources for the parameters $NCV_{i,y}$ and $EF_{CO2,i,y}$ it has not been explained why the IPCC default value has been chosen over the preferred data sources as per Tool to calculate project or leakage CO2 emissions from fossil fuel combustion", (Version 02). Please clarify the same.					

Acceptance and Close out by Lead Assessor: Open	Date: 02/07/2015
Project Participant Response:	Date: 07/07/2015
<ul style="list-style-type: none"> Default values have been for $NCV_{i,y}$ and $EF_{CO2,i,y}$ have been changed and are now at the upper limit of the uncertainty at a 95% confidence interval According to option B from the tool which is the option used, FCi,j,y can be measured in mass or volume unit, and therefore density does not need to be monitored. Density was used in spreadsheet for illustration purposes and has now been removed and calculation based on direct mass unit Option a) has been added and will be the preferred option, and d) will be used if a) not possible. 	
Documentation Provided by Project Participant:	
PDD and spreadsheet amended	
Information Verified by Lead Assessor:	
Revised PDD, version 7 dated 07/07/2015	
Revised emission reduction spreadsheet dated 07/07/2015	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 14/07/2015
<p>Please clarify In the spreadsheet it has been observed that the Diesel values in Litre are converted to Tonnes now. It's not clear on the conversion factor used to convert the volume to mass. With this logic, it's also not clear how the Diesel consumption will be measured directly in mass basis as this does not seem practical.</p> <p>Please clarify why Diesel Density is not being as one of the ex-post monitoring parameter as per the tool and not mentioning the public traceability of the density of Diesel used for ex-ante ER calculation. Also, why the PP should include a small note on the default Diesel Density value used for ex-ante analysis along with its traceability under PDD and ER sheet CAR#04 remains open.</p>	
Acceptance and Close out by Lead Assessor: Open	Date: 14/07/2015
Project Participant Response:	Date: 16/07/2015
The density of diesel has now been included as ex-post parameter and diesel consumption is now measured in volume basis which is in line with the project emission tool.	
Documentation Provided by Project Participant:	
Information Verified by Lead Assessor:	
Revised PDD, version 8 dated 13/07/2015 (the PP had not mentioned the details of the revised PDD in the row above for Documentation Provided by the Project Participant while responding to Findings)	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 16/07/2015
<p>The PP had correctly included the density of the diesel as one of the ex-post parameters and has now included the monitoring of the diesel in volume basis in line with the "Tool to calculate the project or leakage emissions, version 2". Also, the PP had used the latest methodology ACM0002, version 16 correctly which was checked and was found consistent.</p> <p>The PP have also corrected the start date of the crediting period and has now included the text "or the date of registration whichever is later" which was found accepted.</p> <p>Thus, CAR#04 was closed out.</p>	
Acceptance and Close out by Lead Assessor: closed	Date: 16/07/2015

Date:	20/06/2013		Raised by:	Assessment Team		
Type:	CAR	Number:	05	Reference:	B.3.3	
Lead Assessor Comment:						
The PP is requested to clarify why the updated version of the tool to calculate emission factor of electricity system, version 3.0, EB70, annex22 has not been applied for calculation of emission factor.						
Project Participant Response:				Date: 07/08/2014		
As the standardized baseline entitled “Grid emission factor for the Southern African power pool” version 01.0. (CDM EB73, annex 3) has been used as the basis for calculation of the emission factor, reference to the tool to calculate emission factor of electricity system is no longer relevant.						

Documentation Provided by Project Participant:					
PDD version 02 dated 11/08/2014 (Second webhosted version)					
Information Verified by Lead Assessor:					
PDD version 02 dated 11/08/2014					
Note: This finding was raised based on the initial webhosted PDD. However, in continuation to the FO response dated 07/08/2014, PDD, v2 was re webhosted by the PP which was for ISHC from 19/08/2014 until 17/09/2014 based on which the subsequent the assessment was done.					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 18/09/2014	
PP is requested to provide the emission reduction excel sheet for the calculation of the emission reduction based on the Grid emission factor for the Southern African power pool" version 01.0					
Acceptance and Close out by Lead Assessor: Open				Date: 18/09/2014	
Project Participant Response:				Date: 10/10/2014	
<i>Emission reductions excel spreadsheet prepared by GFA Envest and which was submitted with standardized baseline entitled "Grid emission factor for the Southern African power pool" version 01.0. has been provided</i>					
Documentation Provided by Project Participant:					
<i>See excel spreadsheet entitled "sadatabase". This is exactly the same as found on the UNFCCC site (see http://cdm.unfccc.int/methodologies/standard_base/new/sb8_index.html)</i>					
Information Verified by Lead Assessor:					
PDD version 03 dated 09/10/2014 Sadatabase Excel Sheet					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 10/10/2014	
The excel sheet titled "sadatabase" was checked and the emission reduction calculation of the project activity was not found to be included in the response. PP is requested to provide the emission reduction excel sheet for the calculation of the emission reduction of the project activity					
Acceptance and Close out by Lead Assessor: Open				Date: 10/10/2014	
Project Participant Response:				Date: 03/11/2014	
Excel spreadsheet showing calculation of emission reductions based on electricity production and the "Grid emission factor for the Southern African power pool" version 01.0 has been provided.					
Documentation Provided by Project Participant:					
Excel spreadsheet entitled "APPENDIX 4_ITEZHI TEZHI EMISSION REDUCTIONS_OCTOBER 2012" PDD version 04 dated 03/11/2014					
Information Verified by Lead Assessor:					
Excel spreadsheet entitled "APPENDIX 4_ITEZHI TEZHI EMISSION REDUCTIONS_OCTOBER 2012" PDD version 04 dated 03/11/2014					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 13/11/2014	
The emission reduction sheet provided by PP was checked and found to be consistent with the ER mentioned in the PDD version 04 dated 03/11/2014 and thus accepted.					
Acceptance and Close out by Lead Assessor: Closed				Date: 13/11/2014	

Date:	20/06/2013		Raised by:	Assessment Team	
Type:	CAR	Number:	06	Reference:	B.5.3
Lead Assessor Comment:					
All the assumptions and data used by the project participants are not listed in the PDD, including their references and sources as per para 94 and 95 of the VVS 3.0. The PP is requested to clarify the same. PP has not specified the start date of the project activity as per the definition of project start date EB 70 Annex 7. PPA date was found to be 08/04/2011 as compared to 05/05/2011 in the PDD. Request for LoA from DNA is on 21/11/2012 whereas PDD mentions as 22/03/2012. It is not clear from the PDD when the prior consideration was intimidated to DNA of Zambia as per the requirements of VVS para 105 and EB 65 Annex 4.					
Project Participant Response:				Date: 07/08/2014	

Further references and sources have been included in relation to assumptions and data used. The start date for the project activity has been specified as 8 April 2011, which is the date when the PPA was signed. Date for PPA has been corrected to 08/04/2011. Date of 22/03/2012 as mentioned in the PDD is stated as being date of request for LoNO, not LOA. Date of request of LoA from DNA (21/11/2012) has been added to table. E-mail trail is submitted showing when prior consideration was sent to DNA in Zambia (03/05/2011).					
Documentation Provided by Project Participant:					
E-mail trail (RE ITEZHI TEZHI HYDRO POWER PROJECT PIN) PDD version 02 dated 11/08/2014					
Note: This finding was raised based on the initial webhosted PDD. However, in continuation to the FO response dated 07/08/2014, PDD, v2 was re webhosted by the PP which was for ISHC from 19/08/2014 until 17/09/2014 based on which the subsequent the assessment was done.					
Information Verified by Lead Assessor:					
Email dated 03/05/2011 sent to DNA in Zambia PDD version 02 dated 11/08/2014					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 18/09/2014	
The reference and sources related to the assumptions and data used in the PDD were checked and found to be consistent. PP has not demonstrated additionality as per financial analysis and has demonstrated with regard to the barrier analysis hence all assumptions were found to be acceptable. The start date of the project activity of 08/04/2011 was found to be consistent with the requirement of EB 70 Annex 7 definition of start date and hence accepted. Date of PPA was found to be corrected to 08/04/2011 in the PDD and thus accepted. Prior consideration details for the request to the DNA was found to be consistently mentioned in the PDD version 02 dated 11/08/2014 and thus accepted.					
Acceptance and Close out by Lead Assessor: Closed				Date: 18/09/2014	

Date:	20/06/2013	Raised by:	Assessment Team		
Type:	CAR	Number:	07	Reference:	B.5.16
Lead Assessor Comment:					
PP is requested to clarify the additionality of the project stepwise as per the Tool for the demonstration and assessment of additionality VVS Para. 124 125a-b/126					
Project Participant Response:				Date: 07/08/2014	
Section B.5. has been updated and follows a stepwise approach as presented in the “Tool for the demonstration and assessment of the additionality”, Version 07.0.0					
Documentation Provided by Project Participant:					
PDD version 02 dated 11/08/2014 (Second webhosted version)					
Information Verified by Lead Assessor:					
PDD version 02 dated 11/08/2014					
Note: This finding was raised based on the initial webhosted PDD. However, in continuation to the FO response dated 07/08/2014, PDD, v2 was re webhosted by the PP which was for ISHC from 19/08/2014 until 17/09/2014 based on which the subsequent the assessment was done.					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 10/12/2014	
The stepwise assessment of the Additionality has been done in the PDD version 02 dated 11/08/2014. Also, the demonstration of additionality in terms of barrier analysis for financial barrier and assess to finance barrier, were found to be done stepwise and as per EB 50 Annex 13.					
1. Reference/ traceability of the statements mentioned while demonstrating additionality of the project activity under Section B.5 is not found to be reported transparently:					
a. Traceability of the information on “The last hydropower plant to be commissioned in Zambia dates from 1976 (Kariba North)” not reported.					
b. No objective traceability has been reported for the statement “.....ZESCO Ltd has					

approached lenders to access loan to cover part of the power plant investments and construction of the transmission line"

- c. Public traceability of the information reported under Table 4 not clear.
- d. Source of information related to 231 million USD investment required for the power plant and transmission line not provided. Also please clarify on the breakup of the stated estimated project cost.
- e. Traceability on Fitch and Standard & Poor rating on Zambia not provided.
- f. The traceability of the prevailing inflation rates during 2010 not provided.
- g. The justification on the statement [...the loan will be in foreign currency...] is not clear enough. Please explain further.
- h. Several weblinks specified as information source in the footnotes (# 5, 8, 15, 18, 19, 29, 30) are not opening/ showing error. Please reconfirm those information sources and please ensure that all weblinks should be hyperlinked.

- 2. Section B.5: Please clarify if any of the local or international financial organisation has been approached by the PP for the project investment in actual and if received any feedback due to unfavourable/investment climate in Zambia.

Acceptance and Close out by Lead Assessor: Open

Date: 10/12/2014

Project Participant Response:

Date: 15/12/2014

1. *Issues resolved as follows:*

- a. *Traceability of the information on "The last hydropower plant to be commissioned in Zambia dates from 1976 (Kariba North)" not reported.*
Footnote added with reference to relevant source
- b. *No objective traceability has been reported for the statement ".....ZESCO Ltd has approached lenders to access loan to cover part of the power plant investments and construction of the transmission line"*
Footnote added with reference to relevant source from AfDB
- c. *Public traceability of the information reported under Table 4 not clear.*
Footnote added with reference to relevant source
- d. *Source of information related to 231 million USD investment required for the power plant and transmission line not provided. Also please clarify on the breakup of the stated estimated project cost.*
Links to various sources provided giving different estimates, but all close to USD 230 million, with clarification added to text
- e. *Traceability on Fitch and Standard & Poor rating on Zambia not provided.*
Footnote added with reference to relevant source
- f. *The traceability of the prevailing inflation rates during 2010 not provided.*
Footnote added with reference to relevant source
- g. *The justification on the statement [...the loan will be in foreign currency...] is not clear enough. Please explain further*
Footnote added with reference to relevant source, and amendments made to text to clarify
- h. *Several weblinks specified as information source in the footnotes (# 5, 8, 15, 18, 19, 29, 30) are not opening/ showing error. Please reconfirm those information sources and please ensure that all weblinks should be hyperlinked.*
All specified links have been update. For reference no. 32 electronic copy of report sent to DOE

- 2. *Applications for loans were only made to Banks who expressed an interest in providing loans once informal approaches and talks had been undertaken. Banks which expressed an interest and to whom applications were made agreed to provide loans. There is therefore no formal and written evidence that any banks provided negative feedback.*

Documentation Provided by Project Participant:	
Most references provided are directly hyperlinked in the PDD. For reference no. 32 electronic copy of report sent to DOE PDD version 5.0 dated 15/12/2014	
Information Verified by Lead Assessor:	
PDD version 5.0 dated 15/12/2014 Power sector reform in Africa: assessing the impact on poor people March 2005 by Alix Clark, Mark Davis, Anton Eberhard, Katharine Gratwick & Njeri Wamukonya, A study managed by the Graduate School of Business, University of Cape Town for ESMAP/World Bank	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 19/12/2014
<p>Information from the document Burian, M., Zhou, P.; Masawi, F., Yamba, F. and Baumgard, F. (2012). Analysis of grid emission factors for electricity sector in sub Saharan Africa: The case of the Southern African Power Pool, UNEP Risoe was checked and the aspect that the last hydro power plant commissioned in Zambia dated from 1976 and is the Kariba North was found justified. http://www.afdb.org/en/news-and-events/article/zambia-signs-energy-sector-agreement-for-itezhi-tezhi-power-generation-project-13002/ was checked and it was found that ZESCO has approached lenders to access loan to cover part of the power plant investments and thus accepted. The information on the existing power plant in Zambia was checked with Burian, M., Zhou, P.; Masawi, F., Yamba, F. and Baumgard, F. (2012). Analysis of grid emission factors for electricity sector in sub Saharan Africa: The case of the Southern African Power Pool, UNEP Risoe and found to be consistent and thus accepted. http://www.eu-africa-infrastructure-tf.net/activities/grants/itezhi-tezhi-hydro-power-and-transmission-line-project.htm, http://www.hydroworld.com/articles/2012/02/alstom-wins-bid-for.html, http://ppi-re.worldbank.org/data/project/tata-itezhi-tezhi-hpp-5927 and http://www.eib.org/attachments/pipeline/20080263_eia2_en.pdf were checked and the fact that investment of around USD 231 million was required for the project was found to be justified and thus accepted.</p> <p>Information on the Fitch and Standard & Poor rating of Zambia was found to be justified through the weblinks https://www.creditwritedowns.com/2011/07/sovereign-credit-ratings.html and http://www.boz.zm/%5CPublishing%5CSpeeches%5CZambiaSovereignCreditRating.pdf and http://www.bloomberg.com/news/2011-03-02/fitch-assigns-zambia-b-sovereign-rating-and-says-it-has-stable-outlook.html and thus accepted. http://www.afdb.org/en/news-and-events/article/zambia-signs-energy-sector-agreement-for-itezhi-tezhi-power-generation-project-13002/ justified that the loan for Itzhi Tezhi would be in US dollars and not in Zambian Kwacha and thus accepted.</p> <p>All footnotes were checked and found to be working. For footnote 32, link requires to subscribe and the PP provided the document Clark, A., Davis, M., Eberhard, A., Gratwick, K., and Wamukoya, N. (2005), Power sector reform in Africa: assessing the impact on poor people, A study managed by the graduate school, University of Cape Town for ESMAP/World Bank which was checked and found to be consistent and hence accepted.</p> <p>Considering the non-conducive investment conditions in the Zambian perspective due to which funding of the project is required to be done from foreign investment agencies outside of Zambia and Zambia being a LDC the justification for investment barrier was found to be acceptable.</p>	
Acceptance and Close out by Lead Assessor: Closed	
Date: 19/12/2014	

Date:	20/06/2013		Raised by:	Assessment Team		
Type:	CAR	Number:	08	Reference:	B.5.19	
Lead Assessor Comment:						
Common practice analysis has not been done as per the requirements of EB 69 Annex 8 and VVS para 128. PP has to clarify in this regard.						
Project Participant Response:				Date: 07/08/2014		
<i>Common practice analysis has now been undertaken and is included in section B.5.</i>						
Documentation Provided by Project Participant:						
<i>PDD version 02 dated 11/08/2014</i> (Second webhosted version)						

Information Verified by Lead Assessor:					
PDD version 02 dated 11/08/2014					
Note: This finding was raised based on the initial webhosted PDD. However, in continuation to the FO response dated 07/08/2014, PDD, v2 was re webhosted by the PP which was for ISHC from 19/08/2014 until 17/09/2014 based on which the subsequent the assessment was done.					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 18/09/2014	
PDD version 02 dated 11/08/2014 was checked and found to be stepwise analysed for the common practice guideline as per the requirement of EB 69 Annex 8 and thus accepted in line with VVS para 128.					
Acceptance and Close out by Lead Assessor: Closed				Date: 18/09/2014	

Date:	20/06/2013		Raised by:	Assessment Team	
Type:	CAR	Number:	09	Reference:	B.6.15
Lead Assessor Comment:					
The PP is requested to provide information and justify on the expected PLF considered for the ITPC in line with the guidance provided in EB48 Annex 11.					
Project Participant Response:				Date: 07/08/2014	
<i>The PLF is understood to be the same as the “dispatch factor” used in the financial model and is stated as being 100%. No reference to PLF is found in the PDD however, so no changes made to PDD.</i>					
Documentation Provided by Project Participant:					
<i>Screen shot of financial model showing dispatch factor (file name: Dispatch factor). Financial model is highly confidential and cannot be provided in its entirety.</i>					
<i>PDD version 02 dated 11/08/2014 (Second webhosted version)</i>					
Information Verified by Lead Assessor:					
Screen shot of financial model showing dispatch factor (file name: Dispatch factor).					
PDD version 02 dated 11/08/2014					

Note: This finding was raised based on the initial webhosted PDD. However, in continuation to the FO response dated 07/08/2014, PDD, v2 was re webhosted by the PP which was for ISHC from 19/08/2014 until 17/09/2014 based on which the subsequent the assessment was done.					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 18/09/2014	
Justification for PLF was not found to be as per the requirement of EB 48 Annex 11 and PP is requested to clarify the aspect stepwise as per the requirement of EB 48 Annex 11.					
Acceptance and Close out by Lead Assessor: Open				Date: 18/09/2014	
Project Participant Response:				Date: 10/10/2014	
EB 48 Annex 11 states that: The plant load factor shall be defined ex-ante in the CDM-PDD according to one of the following three options: (a) The plant load factor provided to banks and/or equity financiers while applying the project activity for project financing, or to the government while applying the project activity for implementation approval; (b) The plant load factor determined by a third party contracted by the project participants (e.g. an engineering company); III. Validation of plant load factors 4. In assessing whether a plant load factor has been defined correctly in a CDM-PDD, a DOE shall verify whether it derives from the above requirements under sections 3(a) and 3(b). The PLF is understood to be the same as the “dispatch factor” used in the financial model which was submitted to banks, such as the African Development Bank, while applying the project activity for project financing. The screen shot provided to the validator is of the aforementioned financial model, and is therefore consistent with option 3(a) stated above.					
Documentation Provided by Project Participant:					
PDD version 03 dated 09/10/2014					
Information Verified by Lead Assessor:					
PDD version 03 dated 09/10/2014					

Reasoning for not Acceptance or Acceptance and Close Out:	Date: 10/12/2014
PLF mentioned in the PDD was found to be as per the requirement of EB 48 Annex 11 and thus acceptable. As there is no financial calculation in the additionality to the PLF used for calculation was accepted as it has been sourced from financial model which has been sent to the bank and thus accepted. The appropriate source of the information related to amount of electricity to be dispatched to the SAPP grid i.e. 611,000 MWh/ annum has not been reported and the Plant Load factor assumed for the same has not been made clear	
Acceptance and Close out by Lead Assessor: Open	Date: 10/12/2014
Project Participant Response:	Date: 15/12/2014
<i>Chapter 5 of the feasibility study has been sent to the DOE which provides information related to the amount of electricity dispatched to the SAPP grid, and how the figure of 611,000 MWh was calculated. The Plant Load factor is the same as used for the financial calculation, for which evidence has already been provided.</i>	
Documentation Provided by Project Participant:	
Chapter 5 of feasibility study PDD version 05 dated 15/12/2014	
Information Verified by Lead Assessor:	
Chapter 5 of feasibility study prepared by TCE Consulting Engineers PDD version 05 dated 15/12/2014	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 19/12/2014
The chapter 5 of the feasibility study prepared by TCE Consulting Engineers were checked and found to be justifying the figure of 611,000 MWh and the calculation has been done based on the rated discharge, head loss turbine efficiency being considered correctly and was found to be justified and thus accepted..	
Acceptance and Close out by Lead Assessor: Closed	Date: 19/12/2014

Date:	20/06/2013	Raised by:	Assessment Team		
Type:	CL	Number:	10	Reference:	B.7.1
Lead Assessor Comment:					
It is not clear from the PDD with regard to how many meters will be installed as there are two units of power generation as per the project plan. Meter accuracy class is not clear and also the frequency of calibration and internal audit is not clear from the description in the PDD section B.7 and B.8. PP has to clarify in this regard as per the requirement of VVS para 72e.					
Project Participant Response:				Date: 07/08/2014	
<i>Information on meters is being collected</i>					
Documentation Provided by Project Participant:					
PDD version 02 dated 11/08/2014 (Second webhosted version)					
Information Verified by Lead Assessor:					
PDD version 02 dated 11/08/2014					
Note: This finding was raised based on the initial webhosted PDD. However, in continuation to the FO response dated 07/08/2014, PDD, v2 was re webhosted by the PP which was for ISHC from 19/08/2014 until 17/09/2014 based on which the subsequent the assessment was done.					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 18/09/2014	
Issue has not been addressed by PP in the PDD version 02 dated 11/08/2014. PP is requested to clarify with regard to VVS para 72e as it is not clear from the PDD with regard to how many meters will be installed as there are two units of power generation as per the project plan. Meter accuracy class is not clear and also the frequency of calibration and internal audit is not clear from the description in the PDD section B.7 and B.8.					
Acceptance and Close out by Lead Assessor:				Date: 18/09/2014	
Project Participant Response:				Date: 10/10/2014	
Two trivector energy meters will be installed on the 220 kV outgoing line just before it leaves the switchyard. The same meters will measure both import & export (i.e. the energy taken from the grid & supplied to the grid). One will be the “main meter” & the other “check meter”. The accuracy class of both meters is specified as 0.2 s.					
The meters will be calibrated just before installation at the factory and thereafter will be calibrated as per the					

national standard of calibration by the authorized calibration agency. Meter readings will be taken on a daily basis by ITPC staff, while readings will also be taken by ZESCO staff once a month. These meter readings will also be available online through the SCADA system. The PDD has been updated with the above information in section B.7.3.	
Documentation Provided by Project Participant:	
PDD version 03 dated 09/10/2014	
Information Verified by Lead Assessor:	
PDD version 03 dated 09/10/2014	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 10/10/2014
The monitoring was checked and found to be in line with requirement of the methodology and thus accepted. Information in PDD version 03 dated 09/10/2014 section B.7.3 was checked and found to be consistent with the requirement of the methodology and thus accepted.	
Acceptance and Close out by Lead Assessor: Closed	Date: 10/10/2014

Date:	20/06/2013		Raised by:	Assessment Team		
Type:	CL	Number:	11	Reference:	E.1.1	
Lead Assessor Comment:						
The PP is hereby requested to illustrate the stake holders consultation process and provide information as a mandatory requirement of the CDM project activity categorically with regard to the following as appended hereunder;						
<div><div>1. Appropriate media been used to invite comments by local stakeholders.</div><div>2. The undertaken stakeholder process described in a complete and transparent manner.</div><div>3. Summary of the stakeholder comments received during such consultation process.</div><div>4. How has due account been taken of any stakeholder comments if received any.</div></div>						
Kindly provide information comprehensively under section E of the web hosted version of the PDD and provide supportive evidence towards substantiation of the same as per VVS para 138						
Project Participant Response:				Date: 07/08/2014		
<i>Comments from stakeholder consultation addressed</i>						
Documentation Provided by Project Participant:						
<i>PDD version 02 dated 11/08/2014 (Second webhosted version)</i>						
Information Verified by Lead Assessor:						
PDD version 02 dated 11/08/2014						
Note: This finding was raised based on the initial webhosted PDD. However, in continuation to the FO response dated 07/08/2014, PDD, v2 was re webhosted by the PP which was for ISHC from 19/08/2014 until 17/09/2014 based on which the subsequent the assessment was done.						
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 18/09/2014		
PDD version 02 dated 11/08/2014 is not clear with regard to the comments raised above. PP has to clarify with regard to VVS version 7.0 para 140 the following:						
The PP is hereby requested to illustrate the stakeholders consultation process and provide information as a mandatory requirement of the CDM project activity categorically with regard to the following as appended hereunder;						
<div><div>1. Appropriate media been used to invite comments by local stakeholders.</div><div>2. The undertaken stakeholder process described in a complete and transparent manner.</div><div>3. Summary of the stakeholder comments received during such consultation process.</div><div>4. How has due account been taken of any stakeholder comments if received any.</div></div>						
Kindly provide information comprehensively under section E of the PDD and provide supportive evidence towards substantiation						

Acceptance and Close out by Lead Assessor: Open	Date: 18/09/2014
Project Participant Response:	Date: 03/11/2014
Further information has been provided on media used to invite stakeholders to consultation workshops and to invite comments from stakeholders. A summary of the comments received and who made the comments is also provided in the PDD, as is a summary of how stakeholder comments and concerns have been addressed.	
Documentation Provided by Project Participant:	
Please see amended PDD version 04 dated 03/11/2014	
Information Verified by Lead Assessor:	
PDD version 04 dated 03/11/2014	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 13/11/2014
Details of the stakeholder meeting held on 08/11/2012 and 09/11/2012 was checked and the attendance of the local stakeholders was found to be consistent and thus accepted. Invitation of the local stakeholder was done through independent newspaper publication done on The Times of Zambia on 02/11/2012 which was checked by the assessment team on site and found to be consistent and thus accepted.	
Acceptance and Close out by Lead Assessor: Closed	Date: 13/11/2014

A.4 Annex 4: Team Members Statements of Competency

Name: Sauvik
Banerjee

Status

- Lead Assessor	<input checked="" type="checkbox"/>	- Expert	<input type="checkbox"/>
- Assessor	<input type="checkbox"/>	- Financial Expert	<input type="checkbox"/>
- Local Assessor	<input type="checkbox"/>	- Technical Reviewer	<input type="checkbox"/>

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	<input type="checkbox"/>
Technical Area(s):	
2. Energy Distribution	<input type="checkbox"/>
Technical Area(s):	
3. Energy Demand	<input type="checkbox"/>
Technical Area(s):	
4. Manufacturing	<input type="checkbox"/>
Technical Area(s):	
5. Chemical Industry	<input type="checkbox"/>
Technical Area(s):	
6. Construction	<input type="checkbox"/>
Technical Area(s):	
7. Transport	<input type="checkbox"/>
Technical Area(s):	
8. Mining/Mineral Production	<input type="checkbox"/>
Technical Area(s):	
9. Metal Production	<input type="checkbox"/>
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	<input type="checkbox"/>
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	<input type="checkbox"/>
Technical Area(s):	
12. Solvent Use	<input type="checkbox"/>
Technical Area(s):	
13. Waste Handling and Disposal	<input type="checkbox"/>
Technical Area(s):	
14. Afforestation and Reforestation	<input type="checkbox"/>
Technical Area(s):	
15. Agriculture	<input type="checkbox"/>
Technical Area(s):	

Approved Member of Staff by:	Siddharth Yadav	Date:	02/08/2013
Continued Compliance confirmation	Lisa Brough		30/01/2015

Name: Shivaji
Chakraborty

Status

- Lead Assessor	<input type="checkbox"/>	- Expert	<input checked="" type="checkbox"/>
- Assessor	<input type="checkbox"/>	- Financial Expert	<input type="checkbox"/>
- Local Assessor	<input type="checkbox"/>	- Technical Reviewer	<input type="checkbox"/>

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	<input checked="" type="checkbox"/>
Technical Area(s): TA 1.2 Energy generation from renewable energy sources	
2. Energy Distribution	<input type="checkbox"/>
Technical Area(s): TA 2.2 Heat distribution	
3. Energy Demand	<input type="checkbox"/>
Technical Area(s):	
4. Manufacturing	<input type="checkbox"/>
Technical Area(s):	
5. Chemical Industry	<input type="checkbox"/>
Technical Area(s):	
6. Construction	<input type="checkbox"/>
Technical Area(s):	
7. Transport	<input type="checkbox"/>
Technical Area(s):	
8. Mining/Mineral Production	<input type="checkbox"/>
Technical Area(s):	
9. Metal Production	<input type="checkbox"/>
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	<input type="checkbox"/>
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	<input type="checkbox"/>
Technical Area(s):	
12. Solvent Use	<input type="checkbox"/>
Technical Area(s):	
13. Waste Handling and Disposal	<input type="checkbox"/>
Technical Area(s):	
14. Afforestation and Reforestation	<input type="checkbox"/>
Technical Area(s):	
15. Agriculture	<input type="checkbox"/>
Technical Area(s):	

Approved Member of Staff by:	Siddharth Yadav	Date:	19/09/2012
Continued Compliance confirmation	Lisa Brough		16/01/2015

Name: Philip
Otieno
Abuor

Status

- Lead Assessor		- Expert	
- Assessor		- Financial Expert	
- Local Assessor	Zambia	- Technical Reviewer	

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	
Technical Area(s):	
2. Energy Distribution	
Technical Area(s):	
3. Energy Demand	
Technical Area(s):	
4. Manufacturing	
Technical Area(s):	
5. Chemical Industry	
Technical Area(s):	
6. Construction	
Technical Area(s):	
7. Transport	
Technical Area(s):	
8. Mining/Mineral Production	
Technical Area(s):	
9. Metal Production	
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
Technical Area(s):	
12. Solvent Use	
Technical Area(s):	
13. Waste Handling and Disposal	
Technical Area(s):	
14. Afforestation and Reforestation	
Technical Area(s):	
15. Agriculture	
Technical Area(s):	

Approved Member of Staff by:	Siddharth Yadav	Date:	10/07/2013
Continued Compliance confirmation	Lisa Brough		20/03/2015

Name: Ajoy Gupta

Status

- Lead Assessor	<input type="checkbox"/>	- Expert	<input type="checkbox"/>
- Assessor	<input type="checkbox"/>	- Financial Expert	<input type="checkbox"/>
- Local Assessor	<input type="checkbox"/>	- Technical Reviewer	<input checked="" type="checkbox"/>

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	<input type="checkbox"/>
Technical Area(s):	
2. Energy Distribution	<input type="checkbox"/>
Technical Area(s):	
3. Energy Demand	<input type="checkbox"/>
Technical Area(s):	
4. Manufacturing	<input type="checkbox"/>
Technical Area(s):	
5. Chemical Industry	<input type="checkbox"/>
Technical Area(s):	
6. Construction	<input type="checkbox"/>
Technical Area(s):	
7. Transport	<input type="checkbox"/>
Technical Area(s):	
8. Mining/Mineral Production	<input type="checkbox"/>
Technical Area(s):	
9. Metal Production	<input type="checkbox"/>
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	<input type="checkbox"/>
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	<input type="checkbox"/>
Technical Area(s):	
12. Solvent Use	<input type="checkbox"/>
Technical Area(s):	
13. Waste Handling and Disposal	<input type="checkbox"/>
Technical Area(s):	
14. Afforestation and Reforestation	<input type="checkbox"/>
Technical Area(s):	
15. Agriculture	<input type="checkbox"/>
Technical Area(s):	

Approved Member of Staff by:	Siddharth Yadav	Date:	22/02/2012
Continued Compliance confirmation	Lisa Brough		12/01/2015

Name: Nareshkumar Suneja

Status

- Lead Assessor	<input type="checkbox"/>	- Expert	<input checked="" type="checkbox"/>
- Assessor	<input type="checkbox"/>	- Financial Expert	<input type="checkbox"/>
- Local Assessor	<input type="checkbox"/>	- Technical Reviewer	<input type="checkbox"/>

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	<input checked="" type="checkbox"/>
Technical Area(s): TA 1.2 Energy generation from renewable energy Sources-	
2. Energy Distribution	<input type="checkbox"/>
Technical Area(s):	
3. Energy Demand	<input type="checkbox"/>
Technical Area(s):	
4. Manufacturing	<input type="checkbox"/>
Technical Area(s):	
5. Chemical Industry	<input type="checkbox"/>
Technical Area(s):	
6. Construction	<input type="checkbox"/>
Technical Area(s):	
7. Transport	<input type="checkbox"/>
Technical Area(s):	
8. Mining/Mineral Production	<input type="checkbox"/>
Technical Area(s):	
9. Metal Production	<input type="checkbox"/>
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	<input type="checkbox"/>
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	<input type="checkbox"/>
Technical Area(s):	
12. Solvent Use	<input type="checkbox"/>
Technical Area(s):	
13. Waste Handling and Disposal	<input type="checkbox"/>
Technical Area(s):	
14. Afforestation and Reforestation	<input type="checkbox"/>
Technical Area(s):	
15. Agriculture	<input type="checkbox"/>
Technical Area(s):	

Approved Member of Staff by:	Siddharth Yadav	Date:	25/04/2013
Continued Compliance confirmation	Lisa Brough		16/01/2015