Initial Verification Checklist

This document is to be used during the initial verification.

The document is designed as a step wise approach to the first verification and should be used in combination with the Verification checklist UK.AU4.CDM Verification

Steps:

Step number	Description
1	Collection of the project details
2	Identification of parameters to be checked
3	General determination of project status
4	Strategic review and Risk Assessment
5	Finalizing the verification protocol

Before this generic checklist can be applied for the first verification of a specific project, the verifier must review and adjust/amend the checklist to make it applicable to individual project characteristics and circumstances as well as individual investor criteria. The application of the verifier's professional judgement and technical expertise should ensure that checklist amendments cover all necessary specific project requirements that have impact on project performance. Given the above, the check-list is neither exhaustive nor prescriptive.

Step 1: Project information

Project title: Ceran`s Monte Claro Run-of-River Hydropower Plant CDM Project Activity.	**Project No:** CDM.Ver.0277
Project summary and technology used: Ceran project is a run-of-river hydropower with installed capacity of 130MW; located in the cities of Bento Gonçalvez, Nova Roma do Sul and Veranópolis, state of Rio Grande do Sul, Brazil. The project was based on the ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", 19 May 2006, version 6.	
Notes: Site visit was carried out on 30th and 31st July 2007. Audit team: Fabian Gonçalves – Lead Assessor Geisa Príncipe – Trainee Lead Assessor	

Step 2: Identification of the parameters to be checked

Based on the approved monitoring methodology and the validated PDD and monitoring plan, determine the parameters to be monitored and how these will be checked. Identify each parameter in Section 2 of the UK.AU4.CDM and complete the yellow sections.

Step 3: General determination of project status

Aspect	Ref.	COMMENTS	Concl.(incl NIRs/CARs)
A. General Status			
A.1. Contractors for equipment and installation works	Site visit DR	The project is installed and started operation on 29th December 2004 (first turbine – 65MW) and 29th November 2006 (second turbine – 65MW). See references 4 and 5.	Ok
A.2. Actual status of installation works	Site visit	The project is installed and generating emission reductions since March 2005.	Ok
B. Open issues indicated in validation report			
B.1. Missing steps to final approval	Site visit	Not applicable. The project was registered on 08th April 2007.	Ok

Aspect	Ref.	COMMENTS	Concl.(incl NIRs/CARs)
C. Implementation of the project			
C.1. Physical components .	Site visit	During site visit was verified the installed equipments, substation, operation room. The physical components were checked and compared with the equipment described in the PDD. Description of the equipments: 1. Generator: Alstom, 72.609kVA; 163.6/386rpm; model SAV710/104/44; number TBTG0035/2004. Turbine: Alstom; 67,1MW; 163,6 rpm; 2004. 2. Generator: Alstom, 72.609kVA; 163.6/386rpm; model SAV710/104/44; number TBTG0036/2004. Turbine: Alstom; 67,1MW; 163, 6 rpm; 2004.	Ok
C.2. Project boundaries	Site visit	The project boundaries are in compliance with the methodology, validation report and registered PDD.	Ok
C.3. Monitoring and metering systems	Site visit DR	The project has four meters: • 2 meters to gross energy (not applicable for this project, only for internal control). • 2 meters for the energy exported to the grid (principal and backup meter). The meters were verified on site: ZIV, 5CTE-E5A-2F640UC model; serial numbers 490006 and 490177.	Ok
C.4. Data uncertainty	Site Visit DR	Error verified in the calibration certificate < 1%. The error is in accordance with national standard INMETRO and RBC (Rede Brasileira de Calibração). See reference 6.	Ok
C.5. Calibration and	Site visit	There are two meters installed on	CAR 3

Aspect	Ref.	COMMENTS	Concl.(incl NIRs/CARs)
quality assurance	Calibration certificate	site. During site visit was presented the calibration certificates "PS1058806/04 (serial numbers 490006 and 490177)" issued on 21/12/2004. According to the calibration procedure issued by ONS (Manutenção do sistema de medição para faturamento, Submódulo 12.3 Anexo 1, 31/01/2007), the calibration of the meters should be carried out each 2 years; therefore, the calibration certificate is valid until 20/12/2006. Please, provide evidence that the meters were calibrated on the period 21/12/2006 until 31/12/2006. CAR 3 was raised. The Ceran's company provided a declaration from LACTEC that evidences the meters (5CTE-E5A-2F6402UC model, serial numbers 490006 and 490177) complies with standard of the National System Operator (ONS). CAR 3 was close out. Ref. 10	Ok
C.6. Data acquisition and data processing systems	Site visit Interviews Procedure	All data is generated automatically. The meters generate the data continuously and send online to SDCE (Energy Data Collection System). In the first day of the month an operator technician collects the energy data from the system and archive in a file: G:\operaçao\OPERAÇÃO\Registros SE- Medição Energia. The operation department consolidates the data and generates an internal report (Acompanhamento mensal de operação). Ref.11	Ok
C.7. Reporting procedures	Site visit CERAN Report CPFL report CCEE re-	There are 3 reports: 1. CERAN report: generated from data collected by an energy meter calibrated with high precision, transmitted to internal system (Metering Collection Central Unit). Ref	Ok

Aspect	Ref.	COMMENTS	Concl.(incl NIRs/CARs)
	port	12 2. CPFL report: report that confirms the data reported by CCEE about the amount of energy supplied. Ref 13 3. CCEE report: generated energy report. Confirms the energy delivered to the grid. Ref 14	
C.8. Documented instructions	Site visit Procedure	The data is obtained automatically from the system (ZIVERLEC) each 5 minutes and generate an internal report. The energy generation is part of the operational system of the CERAN "Energy generation procedure, version 1.1" (Procedimento de Coleta de Dados de Geração). Ref 11. It was verified the operational procedure "Manual de Operação da Usina Monte Claro, December, 2004".	Ok
C.9. Qualification and training	Site visit Interviews Certificates	Verified training certificates for operators regarding the hydropower plant operation.	Ok
C.10. Responsibilities	Procedures Monitoring report	The responsibilities are clearly defined: CERAN is responsible for check the internal data, calibration of the meters, backup of the energy generated and generate internal report. CCEE (Câmara de Comercialização de Energia Elétrica) responsible for registering the energy data delivered to the National Interconnected System (SIN – Sistema Interligado Nacional) and transfers the energy data information from Energy Data Collection System (SCDE Sistema de Coleta de dados de Energia) to CERAN. CPFL represents CERAN in the CCEE. Ecoinvest is responsible for the monitoring report.	Ok

Aspect	Ref.	COMMENTS	Concl.(incl NIRs/CARs)
C.11. Troubleshooting procedures	Site visit Procedure from CCEE.	There is a backup meter installed. If both meters fail, there is a procedure from CCEE to recuperate the energy information (Procedimento de Comercialização, item 14.3 "Metodologia para Estimativa dos dados de Medição"). Ref 8	Ok
D. Internal Data			
D.1. Type and sources of internal data	Site visit ACM0002 Registered PDD (0773)	Electricity exported to the grid: the data is measured directly through the Metering Collection Central Unit (UCM -Unidade Central de Coleta de Medição), continuously (each 5 minutes) using an energy meter.	Ok
D.2. Data collection	Site visit Procedure	All data is generated automatically. The meters generate the data continuously and sent online to SDCE (Energy Data Collection System). In the first day of the month an operator technician collects the energy data from the system and archive in the file: G:\operaçao\OPERAÇÃO\Registros SE- Medição Energia. The operation department consolidates the data and generates an internal report (Acompanhamento mensal de operação).	Ok
D.3. Quality assurance	Site visit Calibration certificates Procedures	The following measures for quality assurance are adopted: Use of calibrated meters; Use of high precision meters; Automatic transmission of data; Internal auditing from CPFL; Trained personnel to operate the hydropower plant; Cross-checking data (the internal report against the CPFL report and CCEE data).	Ok
D.4. Significance and reporting risks	Site visit Internal reports Monitoring	Low risk. There are calibrated meters installed in the plant and it will be possible to carry out a double check using other sources of data (CPFL and CCEE	Ok

Aspect	Ref.	COMMENTS	Concl.(incl NIRs/CARs)
	report	report).	
E. External Data			
E.1. Type and sources of external data	Registered PDD (0773)	EF (CO2 emission factor of the grid): the baseline emission factor was approved in the validation process (see registered PDD, ref.1). It was calculate ex-ante (0.2647tCO2/MWh). The validated value is correctly applied in the ERs calculation.	Ok
E.2. Access to external data	Registered PDD (0773)	Data obtained from ONS (National System Operator, a federal agency). Data are available, under request. Reproducibility is possible.	Ok
E.3. Quality assurance	Registered PDD (0773)	Official data from ONS (governmental agency).	Ok
E.4. Data uncertainty	Registered PDD (0773)	Official data provide by ONS (governmental agency).	Ok
E.5. Emergency procedures	Registered PDD (0773)	N/A	Ok
F. Environmental and Social Indicators			
F.1. Implementation of measures	Site visit DR	Regarding to the compliance with environmental controls and monitoring which is legally required, it was verified: Operation license, number 6078/2004DL, issued on 14 August 2004 – FEPAM (Fundação Estadual de Proteção Ambiental – RS). Ref 9(a) Operation license, number 3791/2005DL, issued on 03 August 2005 – FEPAM (Fundação Estadual de Proteção Ambiental – RS). Ref 9(b) Operation license, number 5988/2006DL, issued on 03 August 2006 – FEPAM (Fundação Estadual de Proteção Ambiental – RS). Ref	Ok

Aspect	Ref.	COMMENTS	Concl.(incl NIRs/CARs)
		9(c) The reports requested by Environmental Agency were verified during site visit.	
F.2. Monitoring equipment	Site visit DR	N/A	Ok
F.3. Quality assurance procedures	Site visit DR	N/A	Ok
F.4. External data	Site visit DR	N/A	Ok
G. Management and Operational System			
G.1. Documentation	Site visit Procedure Interviews	During site visit was verified the operational procedure of the hydropower plant (Manual de Operação da Usina Monte Claro).	Ok
G.2. Qualification and training	Site visit Interviews certificate	See item C.9	Ok
G.3. Allocation of responsibilities	Site visit	See item C.10	Ok
G.4. Emergency procedures	Site visit CCEE procedure	The project has backup meter for records of the energy data. In the case that both meters fail there is a procedure from CCEE to recuperate the data.	Ok
G.5. Data archiving	Site visit. DR	The energy data will be archived during crediting period plus 2 years. It was verified the internal procedure (Procedimento de coleta de dados de geração). Ref 11.	Ok
G.6. Monitoring report	Site visit Monitoring report	The registered PDD (number 0773) mention that the “Electricity generation of the project delivered to grid EGy” will be collected and archived monthly. During site visit was verified that the monitoring report doesn’t comply with the monitoring plan of	CAR 1 Ok

Aspect	Ref.	COMMENTS	Concl.(incl NIRs/CARs)
		the PDD. The monitoring report version 1, mention that the electricity delivered is verified, monitored and double checked by report emitted by CCEE. During site visit it was not possible to make double check of the internal report against the CCEE report. Provide information about electricity generation according registered monitoring plan. CAR 1 was raised. It was presented a declaration from CPFL that provides information about the electricity generated monthly as requested in the monitoring plan. The declaration complies with electricity generation data provided by CCEE (official data). It was possible to make the cross check data using internal report, CPFL declaration and CCEE data. CAR 1 was closed out. The spreadsheet with emission reduction calculation presented by Ecoinvest doesn't comply with the monitoring plan in the registered PDD. Provide "the spreadsheet emission reductions calculation" detailed with monthly data for year 2006. CAR 2 was raised. A new version of the spreadsheet with emission reduction calculation was presented with monthly data for years 2005 and 2006. All information regarding emission reduction calculation in the spreadsheet is correct. CAR 2 was close out.	CAR 2 Ok
G.7. Internal audits and management review	Site visit	The Operation manager is responsible for checking internal data from CERAN and compare with data reported by CCEE. CPFL is responsible for checking the energy data against CCEE report and when necessary, to carry out eventually correction.	Ok

Step 4: Strategic Review and Risk Assessment

Please complete the table below to ensure that an adequate overview has been obtained

Does the team:	Yes / No	Comments / Justification / Qualifications
Understand the project's products and processes	Yes	The project was implemented as described in the PDD. During site visit was verified the 2 sets (turbine-generator) with 130MW installed capacity. The electricity generated is delivered to the grid.
Understand the project's emission reduction objectives (including baseline etc.).	Yes	The project was implemented as described in the registered PDD and ACM0002 version 6. ER= electricity sold to the grid during the monitoring period* baseline emission factor. EF=0.2647tCO2/MWh (calculated ex-ante). This value is approved during validation process.
Understand and accept the project's identification and evaluation of its GHG sources and emissions data (also referring to the approved methodology)	Yes	The project emissions and leakage are zero. It was possible to verify the parameter monitored and check against the methodology requirements.
Understand how the project has treated data from specific GHG sources	Yes	The only source is related to the emission factor for the grid (emission from baseline).
Understand the GHG information system sufficiently to identify and appreciate: • events, transactions and practices that may have a significant effect on the environmental information upon which the verifier will have an opinion, and • how such information is processed through to its inclusion in the GHG report	Yes	The system is simple. There is only one internal data to be monitored (electricity delivered to the grid). The calculation of ERs involves the equation: ER = electricity sold to the grid during the monitoring period*baseline emission factor.
For annual inventory assessments, understand the key changes to the participants structure throughout the year (e.g. acquisitions, disposals, product changes, process changes)	N/A	N/A

Please complete the following table to ensure that control, or a lack of control over potential sources of material misstatement has been identified:

Cause of risk of material misstatement:	Comments / Justification / Qualifications
Management approach and commitment to monitoring and reporting of GHGs	Low risk. The monitoring energy is the business of CERAN. There is a CDM specialized consultant contracted by Ceran to assist the company.
Organisational structure and approach to assigning responsibilities to monitor and report GHG emissions (e.g. competence of individuals, resources available etc)	Low risk. There is an Operational Manager responsible for the hydropower plant and to check the internal data. There is a CDM specialized company that assist Ceran in the monitoring and reporting activities.
Development of policies and procedures for monitoring and reporting	Low risk. Is not required complex procedures. The procedures implemented are sufficient to ensure the project operation, data collection and reporting.
Processes for checking and reviewing data calculation methods	Low risk. Calculations are not complex (ER = energy sold to the grid during the monitoring period * baseline emission factor (EF). There is a CDM experienced consultant company contracted to review data and prepare the monitoring report.
Monitoring and calibration processes	Low risk. The meters used are high precision and submitted to calibration procedures. Only one internal data should be monitored in the plant.
Other assurance processes (e.g. internal audits, external audits etc)	Low risk. The Operational Manager is responsible for the data, and CPFL is responsible for verifying the electricity invoices (report from CPFL). The energy delivered to the grid is also monitored by a second party (CCEE). It is possible to cross check data to confirm the total energy generated.
The complexity and nature of operations	Low complexity. Includes the energy generation from hydropower plant and dispatching to the grid.
Reliability and availability of input data required to calculate reported GHG emissions	Low risk. Data about energy are recorded and are available for verification purposes. It is possible to trace daily data and confirmed if the values used to ERs calculation and reporting are correct.

Step 5: Finalizing the verification protocol

Based on step 3 and 4, now complete in section 2 of the UK.AU4.CDM the grey fields for each parameter.