VERIFICATION REPORT

SREDEN ISKAR CASCADE HPP PORTFOLIO PROJECT IN BULGARIA

(ITL Project ID: 0063)

Verification Period:
1 January 2009 to 31 December 2009

REPORT NO. 2010-9054
REVISION NO. 01

DET NORSKE VERITAS

VERIFICATION REPORT

Date of first issue: 8 March 2010	Project No.: PRJC-212910-2010-CCS-CZE
Approved by: Ole Andreas Flagstad	Organisational unit: Climate Change Services
Client: Vez Svoghe OOD	Client ref.: Plamen Dilkov

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Summary:

Det Norske Veritas Certification AS (DNV) has performed the verification of the emission reductions reported for the "Sreden Iskar Cascade HPP Portfolio Project in Bulgaria" (ITL Project ID 0063) for the period 1 January 2009 to 31 December 2009.

In our opinion, the GHG emission reductions reported for the project in the monitoring report (version 02) of 10 March 2010 are fairly stated.

The GHG emission reductions were calculated correctly on the basis of the approved monitoring methodology ACM0002 (version 06 and 07) and the monitoring plan contained in the Project Design Document of 8 November 2006.

Det Norske Veritas Certification AS is able to verify that the emission reductions from the "Sreden Iskar Cascade HPP Portfolio Project in Bulgaria" during the period 1 January 2009 to 31 December 2009 amount to 18 796 tonnes of CO_2 equivalent.

Report No.: 2010-9054	Subject Group: Environment	
Report title: Sreden Iskar Cascade HPP Portfolio Project in Bulgaria		
Work carried out by: Zuzana Andrtová and Lumír Němeček		
Work verified by: Andrea Leiroz		
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Table of Content *Page*

Abbreviations

AIE	Accredited Independent Entity
CAR	Corrective Action Request
CEF	Carbon Emission Factor
CL	Clarification Request
CO_2	Carbon dioxide
CO_{2e}	Carbon dioxide equivalent
DNV	Det Norske Veritas
DNA	Designated National Authority
ERU	Emission Reduction Units(s)
FAR	Forward Action Request
GHG	Greenhouse gas(es)
HPP	Hydro Power Plant
IPCC	Intergovernmental Panel on Climate Change
JI	Joint Implementation
MP	Monitoring Plan
MVP	Monitoring and Verification Plan
NGO	Non-governmental Organisation
NEK	National Elektricheska Kompania (National Electricity Company)
ODA	Official Development Assistance
PDD	Project Design Document
UNFCCC	United Nations Framework Convention for Climate Change
GWP	Global Warming Potential

1 INTRODUCTION

Vez Svoghe OOD has commissioned Det Norske Veritas Certification AS (DNV) to carry out the verification and certification of emission reductions reported for the "Sreden Iskar Cascade HPP Portfolio Project in Bulgaria" (the project) in the period 1 January 2009 to 31 December 2009. This report contains the findings from the verification and a certification statement for the certified emission reductions.

1.1 Objective

Verification is the periodic independent review and *ex post* determination by an Accredited Independent Entity (AIE) of the monitored reductions in GHG emissions that have occurred as a result of a Joint Implementation (JI) project activity during a defined verification period.

Certification is the written assurance by a DOE that, during a specific period in time, a project activity achieved the emission reductions as verified.

The objective of this verification was to verify and certify emission reductions reported for the "Sreden Iskar Cascade HPP Portfolio Project in Bulgaria" for the period 1 January 2009 to 31 December 2009.

DNV is an accredited Designated Operational Entity (DOE) under the Clean Development Mechanism (CDM) and accredited AIE under Joint Implementation (JI).

1.2 Scope

The scope of the verification is:

- To verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.
- To verify that reported GHG emission data is sufficiently supported by evidence.

The verification shall ensure that reported emission reductions are complete and accurate in order to be certified.

1.3 Description of the Project Activity

Project Parties:	*Bulgaria (Host) and Netherlands (Sponsor Party)*
Title of project activity:	*Sreden Iskar Cascade HPP Portfolio Project in Bulgaria*
ITL Project ID:	*0063*
CDM baseline and monitoring methodology:	*ACM0002 (version 06 and 07)*

Project Entity:	*Vez Svoghe OOD, Strt. St. Karadja 7, 1000 Sofia, Bulgaria and EBRD, One Exchange Square London EC2A 2JN, United Kingdom*
Location of the project activity:	*Individual planned stages are placed on the river Iskar near Sofia, Bulgaria*
Project's crediting period:	1 July 2008 to 31 December 2012

Period verified in this verification: 1 January 2009 to 31 December 2009

The project involves the installation and commissioning of 9 small run-of-the-river hydro power plants on the river Iskar near the town of Sofia in Bulgaria. The total installed capacity of the project is 25.65 MW. The project is expected to generate 415.5 GWh of electricity over the entire crediting period starting from 1 January 2008 and extending to 31 December 2012 and is expected to reduce an average of 74 194 t CO_2 emissions per year by displacing electricity produced by existing and upcoming fossil fuel fired power plants connected to the electrical grid.
Construction of the first two HPPs started in July 2006. The first HPP (Lakatnik) was commissioned at 2 July 2008 and the second HPP (Svhrazen) was commissioned in May 2009. All HPPs from second phase have defined construction sites and connection point now. As the phase will start later, Vez Svoghe supposes that their operational date will be in line with schedule proposed in PDD /1/, October 2010. Third phase covers the last four HPPs and expected to start construction in May 2010.

1.4 Methodology for Determining Emission Reductions

The emission reductions are calculated as the difference between baseline emissions and project emissions and leakages. The baseline emissions are calculated as the product of the net electricity generation supplied to the Bulgarian grid and the emission factor for Bulgarian grid established by Ministry of Environment and Water of Bulgaria (MoEW). Hereinto, project emissions and leakages for the project are considered to be zero as per the methodology ACM0002 /21/.

The emission factor was calculated *ex-ante* by NEK for Bulgarian government and it was supposed in the registered PDD that the emission factor will be annually ex-post renewed by MoEW of Bulgaria. MoEW have not renewed the emission factor yet and MoEW confirms validity of the old calculation for this period /13/. Thus the values presented in Baseline Carbon Emission Factor of Bulgarian Electricity and Heat Power System (NEK "Study") /14/ is still valid for this project.

The delivered electricity of the project is monitored continuously for each plant and sum of delivered amounts is total value of delivered electricity to the grid.

2 METHODOLOGY

The verification of the emission reductions has assessed all factors and issues that constitute the basis for emission reductions from the project. These include:

i) Records related to measuring quantity of delivered electricity to grid /3/;

ii) Emission factor issued by NEK (0.947 tCO_2/MWh for 2009) /14/;

iii) Calculation of the baseline emissions based on the determined and validated baseline emission factor;

iv) Records on validation and/or calibration of the used measuring equipment, etalons and calculation software.

Verification team

				Type of involvement					
Role	***Last Name***	***First Name***	***Country***	Desk review	Site visit	Reporting	Supervision of work	Technical review	Expert input
Project manager / Technical team leader / JI verifier	Andrtová	Zuzana	Czech Republic	✓	✓	✓			
Sector expert	Němeček	Lumír	Czech Republic	✓		✓			✓
Technical reviewer	Leiroz	Andrea	Brazil					✓	

Duration of verification

Preparations: *3 March 2010*

On-site verification: *From 4 March 2010 to 5 March 2010*

Reporting, calculation checks and QA/QC*: From 8 March 2010 to 19 May 2010*

2.1 Review of Documentation

Project owner provided DNV all needs document for document review. The monitoring reports (webhosted version 1 dated 25 January 2010 and version 2 dated 10 March 2010) /3/ and the monthly electricity sales receipts, which was included in the monitoring report, were assessed as part of the verification. In addition, the project's Project Design Document /1/ and its Monitoring procedures /2/, as well as the project's determination report /18/ and verification report for the first issuance /12/ were also reviewed. The monitoring report also contains NEK study and records from internal audit.

Supporting documents, such as, daily logbooks for both plants, calibration protocols /5/ /6/, obligatory permits /7/ /8/ /9//10/, training records /11/ and power purchase agreement /4/ were available during the site visit.

Information and formulas provided in the monitoring report was compared with PDD and electricity sales receipt. The using of emission factor from NEK study /14/ was discussed with project owner and new confirmation of its validity was requested /13/. Open FAR from previous verification was closed on basis of provided record in monitoring report /3/.

2.2 Site Visits

Both constructed plants (Lakatnik and Svrazhen hydro power plants) and the other three sites, where construction will start in second phase, were visited on 4 March 2010 by Zuzana Andrtová of DNV. Supporting documents related to projects were presented at Vez Svoghe's office in Sofia on 5 March 2010. During this site visit, representative of DNV has interviewed key personnel of the plants and verified that Lakatnik and Svrazhen plants started to fully operate in July 2008 and May 2009, respectively. It means that first phase has a delay against original plan presented in the PDD /1/ in the case of Svrazhen plant. The second phase would be started and implemented according to plan.

The personnel interviewed are summarized in the table below:

Name	Organization and position	Topic of interview
Patrick Pauletto	Project Manager, Vez Svoghe OOD, Bulgaria.	QA/QC of the project, Project management
Vassil Shumanov	Chief Engineer, Vez Svoghe OOD, Bulgaria.	Operational reporting, logbooks, SCADA system, plants visit, monitoring equipments
Anton Milchev	Building department, Civil Engineer, Vez Svoghe OOD, Bulgaria.	Preparation of new constructions, construction sites presentation, documentation of permits, internal audit
Dario Dilucia La Perna	Project Manager, MWH S.p.A, Italia.	QA/QC of the project, Project management, site visit

2.3 Reporting of Findings

A corrective action request (CAR) is issued, where:

i. Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
ii. Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;
iii. Issues identified in a FAR during validation to be verified during verification have not been resolved by the project participants.

A clarification request (CL) shall be raised if information is insufficient or not clear enough to determine whether the applicable JI requirements have been met.

A forward action request (FAR) is issued for actions if the monitoring and reporting require attention and/or adjustment for the next verification period.

During this verification, one corrective action request (CAR) and two clarifications requests (CL) have been identified. These CAR and CLs were satisfactorily addressed by Vez Svoghe by revising the monitoring report. One forward action request (FAR) has been identified (refer to Appendix A). This FAR should be addressed by the project participants during the next monitoring period(s) in order to ensure that reported emission reductions can be verified and certified. This FAR will also have special attention during the next verification of reported emission reductions.

3 VERIFICATION FINDINGS

This section summarises the findings from the verification of the emission reductions reported for the "Sreden Iskar Cascade HPP Portfolio Project in Bulgaria" for the period 1 January 2009 to 31 December 2009.

3.1 Remaining Issues, CARs, FARs from Previous Validation or Verification

There remained two forward action request (FAR 1) from the first periodic verification (refer to Appendix A). The FAR 1 has been adequately addressed by the project owner and thus is closed.

3.2 Project Implementation

The first phase of the project was implemented. It means that hydropower plants Lakatnik and Svrazhen are fully operational as confirmed by DNV during the site visit. Lakatnik hydropower plant was commissioned in July 2008 /9/ as described in the previous verification report /12/. Svrazhen hydropover plant was commissioned in May 2009 /10/ with a delay of one year in related to the original schedule. The sites for second phase are defined include connection points now and project owner supposed that all three hydropower plants' operation start will be keep the schedule presented in the PDD /1/ for operational date.

The actual operation of the project activity is in line with the registered PDD /1/.

Electricity was generated and supplied to the Bulgarian grid. The net generated electricity of 19 848 MWh was supplied to the grid during the monitored period from 1 January 2009 to 31 December 2009.

Both hydropower plants generate electricity, however the request from the grid is lower than estimated in the PDD /1/.

The total emission reductions reported for the period 1 January 2009 to 31 December 2009 was verified to be 18 796 tCO_2e. The emission reductions are lower than that the emission reduction of 37 321 tCO_2e predicted in the registered PDD. The lower emission reductions for the verification period are attributed to the lower demand of the grid company and delay of operation from Svrazhen hydropower plant.

The data presented in the monitoring report is in compliance with the information in the PDD /1/ except that the grid emission factor that was not determine *ex-post* as stated in PDD. As stated in PDD on page 25, "the baseline grid emission factors will be monitored using the document "Baseline Study of Joint Implementation projects in the Bulgarian energy sector" performed annually by the NEK" /14/. However, DNV was able to confirm directly from the MoEW /13/ that this baseline study was not updated and is still valid for JI projects in Bulgaria. Hence, the emission factor of this study published on the web sites of the Ministry is the most recent baseline emission factor determined for Bulgaria. DNV was also able to confirm that the necessary data to recalculate the emission factor based on more recent data is not publicly available.

Project owner updated used version of methodology ACM0002 /21/ in its monitoring procedures /2/ and in the monitoring report /3/ to version 7 against version 6 used in the PDD /1/. DNV assesses difference from version 6 to version 7 /21/ and confirms that the provided documents following those version 7 fulfills requirement of version 6 except emission factor calculation, as is presented below. The version update does not have any influence to emission reduction calculation.

3.3 Completeness of Monitoring

The monitoring procedure is described in monitoring report /3/ and it was verified during the site visit. The electricity meters owned by ČEZ and placed close by the hydropower plants are used for continuously measurement. The values are recorded on a monthly basis to protocols, which are provided by ČEZ employee together with responsible person from Vez Svoghe. The correctness of the electricity amount is confirmed in writing by both parties.

The values are compared with data provided by SCADA system, which stored electricity measurement from devices owned by Vez Svoghe. Electricity meters installed in hydropower plants are not included in the monitoring plan and they are used for internal crosschecking only. The delivered electricity was evidenced by invoices and the protocols, which are mentioned above.

The power purchase agreement /4/ contains a paragraph for the situation, when the electricity meter will be out of function. However, it is not clear if metering system of Vez Svoghe can be used in this case since the Vez Svoghe's meters are not under any calibration procedure now. This situation should be clarified (FAR1) and the calibration procedures should be established, so the meters could be used as back up if such a situation occurs.

The electricity meters owned by ČEZ are calibrated according to local legislation. The detailed information is provided in following tables. It was not clear whether the laboratory that calibrated the devices has authorization for it. The situation was investigated by the project owner and it was confirmed that the laboratory is authorized for calibration (CL2).

The emission factor did not change according to decision of Bulgarian MoEW /13/ as was presented in chapter above and thus it was not object of monitoring.

The metering system owned by ČEZ meets requirements of the monitoring plan and it is in accordance with ACM0002 methodology version 7 /21/.

	Assessment/ Observation
Data / Parameter: (as in monitoring plan of PDD):	Electricity delivered to the grid - Lakatnik
Measuring frequency:	Continuously measured.
Reporting frequency:	Every month.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes.
Type of monitoring equipment:	Actaris SL761C071 (model SL 7000).
Is accuracy of the monitoring equipment as stated in the PDD? If the PDD does not	No meter accuracy is defined in the registered PDD. The accuracy of the meter is 0.5s, which

specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	represents a good monitoring practice and additionally it is according to local Commercial Code and metrology rules since it is invoicing measurement.
Calibration frequency /interval:	Annually.
Is the calibration interval in line with the monitoring plan of the PDD? If the PDD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	No calibration frequency is defined in the registered PDD. The statement in the Monitoring plan is that calibration will be according to Metering legislation and this corresponds with information provided on site. The project owner is not owner of the metering device and access to monitoring device is mainly possible every month, when is in last day checked measurement amount of electricity. The calibration frequency of once per year used by this project meets the requirement and represents a good monitoring practice in Bulgaria.
Company performing the calibration:	Otdel Merene – CEZ.
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	Yes.
Is(are) calibration(s) valid for the whole reporting period?	It is from 18 May 2009 /5/ and after changing of meter it is from 8 June 2009 /5/. Previous certificate was presented during 1st verification.
If applicable, has the reported data been cross-checked with other available data?	The data are internally cross-checked with internal electricity meter, which is not calibrated yet (FAR1).
How were the values in the monitoring report verified?	The values from the monthly electricity invoices were cross-checked with monthly protocols.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	No, it is not own electricity meter.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA.

	Assessment/ Observation
Data / Parameter: (as in monitoring plan of PDD):	Electricity delivered to the grid – Svrazhen.
Measuring frequency:	Continuously measured.
Reporting frequency:	Every month.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes.
Type of monitoring equipment:	Actaris SL761C071 (model SL 7000).
Is accuracy of the monitoring equipment as stated in the PDD? If the PDD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	No meter accuracy is defined in the registered PDD. The accuracy of the meter is 0.5s, which represents a good monitoring practice and additionally it is according to local Commercial Code and metrology rules since it is invoicing measurement.
Calibration frequency /interval:	Annually.
Is the calibration interval in line with the monitoring plan of the PDD? If the PDD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	No calibration frequency is defined in the registered PDD. The statement in the Monitoring plan is that calibration will be according to Metering legislation and this corresponds with information provided on site. The project owner is not owner of the metering device and access to monitoring device is mainly possible every month, when is in last day checked measurement amount of electricity. The calibration frequency of once per year used by this project meets the requirement and represents a good monitoring practice in Bulgaria.
Company performing the calibration:	Otdel Merene – CEZ.
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	Yes.
Is(are) calibration(s) valid for the whole reporting period?	It is from 30 March 2009, where was installed measurement for test delivery /6/ and from 9 June 2009 /6/, where was changed.
If applicable, has the reported data been cross-checked with other available data?	The data are internally cross-checked with internal electricity meter, which is not calibrated yet (FAR1)
How were the values in the monitoring report verified?	The values from the monthly electricity invoices were cross-checked with monthly protocols.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct	No, it is not own electricity meter.

transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA.

3.4 Accuracy of Emission Reduction Calculations

The emissions reduction was correctly calculated during the reporting period with the validated calculation formulae and baseline emission factors given in the PDD /1/.

The emission factor was derived from the "Baseline Study of Joint Implementation projects in the Bulgarian energy sector" issued in May 2005 /14/ by NEK. The study determined an operating margin emission factor by applying a model to forecast the emission factor based on a dispatch analysis applying actual generation and fuel consumption data from 2000-2004. The model takes into account new capacities.

It must be noted, as in previous DNV verification report /12/, that the approach selected by NEK in the "Baseline Study of Joint Implementation projects in the Bulgarian energy sector" is not in full compliance with the requirements of ACM0002 to which the monitoring plan in the final PDD refers to /1/. The emission factor determined for the years 2006-2012 and thus the emission factor for 2009 selected by the project participants for this monitoring period i) is based on a model and not actual generation and fuel consumption data for these years and ii) represents the operating margin only although considering likely future capacities in the dispatch analysis model applied.

Nonetheless, the use of model data instead of actual generation and fuel consumption data is in DNV's opinion acceptable as the model uses conservative assumptions and the Bulgarian Ministry of Environment and Water confirmed again that the baseline study published in 2005 was not updated and is still valid for JI projects in Bulgaria /13/.

In the context of the project activity, DNV finds it also acceptable to not consider the build margin and only future capacity additions in the dispatch analysis model applied to estimate the operating margin emission factor. Due to the small generation of the project, it is reasonable to assume that the project will not have any effect on other power sector investments /22/ and thus the build margin. Moreover, in Bulgaria, like in many Eastern European countries, the number of new plants in recent years is also very low, given the decrease in electricity demand /22/.

The average load factor for this period is 51.15% for Lakatnik hydropower plant and 35.65% for Svrazhen hydropower plant. Plant load factor for individual months are listed bellows in the tables as well as electricity production and emission reductions.

DNV was able to confirm that the load factors varied for different months due to river water flow and machinery operation conditions. The power stations invoices from January 2009 to

December 2009 /3/ were checked and crosschecked by protocols /15/ /16/ during the on site visit.

Lakatnik hydropower plant:

Period	Max possible Power Generated (MWh)	Net Power Supplied (MWh)	Load Factor	Emission Reductions (tCO_2)
2009				
January 2009	2 157.60	818.97	37.96%	775.56
February 2009	1 948.80	774.53	39.74%	733.48
March 2009	2 157.60	1 928.82	89.40%	1 826.60
April 2009	2 088.00	1 807.72	86.58%	1 711.91
May 2009	2 157.60	1 523.78	70.62%	1 443.02
June 2009	2 088.00	858.75	41.13%	813.24
July 2009	2 157.60	979.95	45.42%	928.01
August 2009	2 157.60	714.28	33.11%	676.42
September 2009	2 088.00	629.85	30.17%	596.47
October 2009	2 157.60	765.46	35.48%	724.89
November 2009	2 088.00	1 057.22	50.63%	1 001.19
December 2009	2 157.60	1 154.84	53.52%	1 093.63
Total	**25 404.00**	**13 014.18**	**51.15%**	**12 324.42**

Svrazhen hydropower plant:

Period	Max possible Power Generated (MWh)	Net Power Supplied (MWh)	Load Factor	Emission Reductions (tCO_2)
2009				
April 2009 (72h test)	2 088.00	157.69	7.55%	149,33
May 2009	2 157.60	603.50	27.97%	571,52
June 2009	2 088.00	624.58	29.91%	591,48
July 2009	2 157.60	428.98	19.88%	406,24
August 2009	2 157.60	830.76	38.50%	786,73
September 2009	2 088.00	712.65	34.13%	674,88
October 2009	2 157.60	925.07	42.88%	876.04
November 2009	2 088.00	1 166.59	55.87%	1 104.76
December 2009	2 157.60	1 384.46	64.17%	1 311.09
Total	**25 404.00**	**6834.29**	**35.65%**	**6 472.07**

3.5 Quality of Evidence to Determine Emission Reductions

The calculation is based on the quantity of electricity supplied to the grid and the grid emission factor /14/. The quantity of electricity is measured and recorded into a protocol,

which is signed by representatives both of parties (ČEZ and Vez Svoghe) and this is the base for the invoice. Invoices are official documents for quantity calculation and they are included in monitoring report for 2009 /3/.

3.6 Management System and Quality Assurance

Due to the relatively simple management system requirements for this project, all procedures related to management and operational system were described in the project owner's monitoring procedures /2/. The procedures are fully implemented now. Internal audit has been conducted; two internal auditors have been properly trained /11/.

4 VERIFICATION STATEMENT

Det Norske Veritas Certification AS (DNV) has performed the verification of the emission reductions that have been reported for the "Sreden Iskar Cascade HPP Portfolio Project in Bulgaria" (ITL project ID 0063) for the period 1 January 2009 to 31 December 2009.

The project participants are responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project.

It is DNV's responsibility to express an independent verification statement on the reported GHG emission reductions from the project..

DNV conducted the verification on the basis of the CDM monitoring methodology ACM0002 (version 06 and 07), the monitoring plan contained in the registered Project Design Document of 8 November 2006 and the monitoring report (version 02) dated 10 March 2010. The verification included i) checking whether the provisions of the monitoring methodology and the monitoring plan were consistently and appropriately applied and ii) the collection of evidence supporting the reported data.

DNV's verification approach draws on an understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. DNV planned and performed the verification by obtaining evidence and other information and explanations that DNV considers necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.

In our opinion the GHG emissions reductions of the "Sreden Iskar Cascade HPP Portfolio Project in Bulgaria" (ITL project ID 0063) for the period 1 January 2009 to 31 December 2009 are fairly stated in the monitoring report (version 02) dated 10 March 2010.

The GHG emission reductions were calculated correctly on the basis of the approved CDM baseline and monitoring methodology ACM0002 (version 06 and 07) and the monitoring plan contained in the registered PDD of 8 November 2006.

Det Norske Veritas Certification AS is able to verify that the emission reductions from the "Sreden Iskar Cascade HPP Portfolio Project in Bulgaria" during the period 1 January 2009 to 31 December 2009 amount to 18 796 tonnes of CO_2 equivalent.

Prague and Oslo, 19 May 2010

Zuzana Andrtová
JI Verifier
DNV Prague, Czech Republic

Ole Andreas Flagstad
Approver,
Det Norske Veritas Certification AS

5 REFERENCES

Documents provided by the Project Participants that relate directly to the GHG components of the project. These have been used as direct sources of evidence for the periodic verification conclusions, and are usually further checked through interviews with key personnel.

/1/ MWH Global: PDD – Sreden Iskar Cascade HPPs portfolio Project Rev. 1 dated 8 November 2006, Rev. 2 dated 15 October 2007.

/2/ MWH Global: Sreden Iskar Cascade Hydropower Plants Monitoring Procedures – Final version, 26 February 2010.

/3/ MWH Global: Monitoring report Sreden Iskar Cascade HPPs portfolio Project, version 2 dated 10 March 2010 and version 1 dated 25 January 2010.

/4/ Agreement for purchase of electricity energy No.78 dated 14 July 2008 and its prolongation where is included Svrazhen dated 18 May 2009.

/5/ Protocols for electricity measurement provided by ČEZ – Lakatnik:
No. 1000002688 from 8 April 2009
No. 1000002717 from 18 May 2009
No. 1000005960 from 8 June 2009

/6/ Protocols for electricity measurement provided by ČEZ – Svrazhen:
No. 1000002679 from 30 March 2009
No. 1000005961 from 8 June 2009

/7/ Water Permit for Lakatnik – No. 100950 dated 16 May 2005 and prolongation by Decision No. 52/04.04.2007 dated 4 April 2007.

/8/ Water Permit for Svrazhen – No. 100949 dated 16 May 2005 and prolongation by Decision No. 51/04.04.2007 dated 4 April 2007.

/9/ Use Permit for Lakatnik No. CT-12-612 2008 of 2 July2008.

/10/ Use Permit for Svrazhen No. CT-05-518 of 16 May 2009.

/11/ Certificate of training for internal audits of the monitoring plan of Sreden Iskar Cascade Hydro Power plants for Anton Milchev and Marina Dimitrova, dated 29 October 2008.

/12/ DNV: Verification report for Sreden Iskar Cascade HPP Portfolio Project in Bulgaria, Verification Period: 1 January 2008 - 31 December 2008 No. 2009-9059.

/13/ E-mail from Yasen Stoyanov, Expert in Climate Change Policy Department dated 9 March 2010 – confirmation that the EF for Bulgaria from NEK study is still valid.
E-mail from Ministry of Environment and Water (Ivan Terziiski) for confirmation of emission factor dated 20 February 2009.

/14/ Baseline Carbon Emission Factor of Bulgarian Electricity and Heat Power System (NEK "Study").
http://www.moew.government.bg/recent_doc/climate/Baseline%20CEF%20Summary.pdf

/15/ Protocols from electricity meter reading – Lakatnik (from January to December).

/16/ Protocols from electricity meter reading – Svrazhen (from April to December).

/17/ Authorisation No. A-G-015 for CEZ LABORATORIES BULGARIA EOOD, issued by State Agency for Metrology and Technical Supervision on 7 March 2008, valid for 5

years.

/18/ DNV: Determination report for Sreden Iskar Cascade HPP Portfolio Project in Bulgaria No. 2006-1811, revision 3b dated 3 December 2007.

Background documents related to the design and/or methodologies employed in the design or other reference documents.

/19/ JI Supervisory Committee, Determination and verification manual, version 01 adopted at JISC 19.

/20/ JI Supervisory Committee, Guidance on criteria for baseline setting and monitoring, version 02 adopted at JISC18.

/21/ CDM Executive Board: ACM0002 “Consolidated baseline methodology for grid connected electricity generation from renewable sources”, version 6 of 19 May 2006 and version 7.

/22/ Organisation for Economic Co-operation and Development (OECD) and International Energy Agency (IEA), Practical baseline recommendations for greenhouse gas mitigation projects in the electric power sector. Information paper of 2002. (http://www.oecd.org/dataoecd/45/43/1943333.pdf)

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APPENDIX A

CORRECTIVE ACTION REQUESTS, CLARIFICATION REQUESTS AND FORWARD ACTION REQUESTS

Corrective action requests

CAR ID	Corrective action request	Response by Project Participants	DNV's assessment of response by Project Participants
CAR 1	The amount of electricity from 72 hours test, which was delivered to the grid, has to be included to calculation of emission reduction.	The revised monitoring report with included recalculation was provided by project owner.	A revised monitoring report was checked and DNV confirms that the emission reductions calculation is correct. The CAR is closed.

Clarification requests

CAR ID	Corrective action request	Response by Project Participants	DNV's assessment of response by Project Participants
CL 1	The validity of the emission factor have to be confirmed clearly for 2009 year from MoEW.	The confirmation of the validity for emission factor was obtained form Yasen Stoyanov from MoEW on 9 March 2010.	The e-mail clearly confirmed that the EF sourced from NEK study is still valid and it is applied for JI projects in Bulgaria. The CL is closed.
CL 2	Vez Svoghe has to obtain information about ČEZ authorization of laboratory, which provided calibration of measurement devices.	The authorisation of the CEZ laboratory was sent to DNV as evidence.	The obtained authorization /17/ was issued on 7 March 2008 and it is valid for 5 years and covers all types of devices, which are used in this project. The CL is closed.

Forward action requests from previous verification

FAR ID	Forward action request	Summary of how FAR has been addressed in this reporting period	Assessment of how FAR has been addressed
FAR 1	The formal appointment of internal auditor is pending and the internal audit of project was not conducted yet.	The audit will be executed during this year and the results will be included in the next monitoring report.	Audit was provided on 26 November 2009. The audit records were provided during the site visit and electronic copy is attached in monitoring report for this crediting period. The FAR is closed.

Forward action requests from this verification

FAR ID	Forward action request	Response by Project Participants	DNV's assessment of response by Project Participants
FAR 1	Vez Svoghe should clarify with ČEZ, how delivered electricity from plants will be calculated if ČEZ electricity meters break down. The paragraph in PPA /4/ does not contain the exact way of calculation. If the Vez Svoghe's meters will be used, the meters have to be calibrated (include calibration period setting).		

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