Koyulhisar Hydro Electrical Power Plant

VERIFICATION REPORT
SOCIALCARBON Standard
- Point ONE -

Document Prepared By TÜV Rheinland Energie und Umwelt GmbH

Project Title	**Koyulhisar Hydro Electricity Power Plant**
Client	Özgün Gül Koparan Bereket Enerji Üretim A.Ş.
Report Title	Social Carbon – Point ONE – Verification report 21222980 - Koyulhisar Hydro Electricity Power Plant
Report ID	21222980
Version	1
Date of Issue	15/09/2013
Pages	21
Prepared by	TÜV Rheinland Energie und Umwelt GmbH
Auditor	Denitsa Gaydarova-Itrib
Contact	Am grauen Stein, 51105 Cologne, Germany Tel +49 221 806-3553; Fax +49 221 806-1349; www.tuv.com/carbon
Email	denitsa.gaydarova-itrib@de.tuv.com

Project Information	
Indicators	Indicators for Hydropower Plants, Version 4.1 Indicators adapted for Multiple Hydroelectric Power Plant Projects, Turkey[1]
Project Name	Koyulhisar Hydro Electricity Power Plant
Year - Point of Project	2013 – Point ONE
Monitoring period (SOCIALCARBON)	01/11/2011 to 31/07/2013
Corresponding Monitoring Report (Carbon Accounting Standard)	Verification report 21222980 - Koyulhisar Hydro Electricity Power Plant (VCS Standard 3.3) Monitoring period 01/11/2011 to 31/07/2013
Location	Koyulhisar – Sivas - Turkey

[1] The Koyulhisar HPP is one of the Multiple Hydroelectric Power Plant Projects for which the indicators were adapted

Table of Contents

1 INTRODUCTION 3
1.1 SCOPE AND CRITERIA 3
1.2 PROJECT DESCRIPTION 3
2 METHODOLOGY 5
2.1 DOCUMENT REVIEW 5
2.2 ON-SITE INSPECTION AND INTERVIEWS 6
3 VALIDATION RESULT 6
3.1 EVALUATION OF CONSISTENCY AND COMPLETENESS OF INDICATORS 6
3.2 ASSESSMENT OF INDICATORS 7
3.2.1 Social Resource 7
3.2.2 Human Resource 9
3.2.3 Financial Resource 10
3.2.4 Natural Resource 11
3.2.5 Biodiversity / Technology Resource 13
3.2.6 Carbon Resource 15
4 VALIDATION STATEMENT 16
ANNEX A – LIST OF PARTICIPANTS TO THE SITE ASSESSMENT ON 26/08/2013 & 27/08/2013 18
ANNEX B 20

1 Introduction

1.1 Scope and Criteria

Bereket Enerji Üretim A.Ş. has contracted TÜV Rheinland Energie und Umwelt GmbH to verify the Koyulhisar Hydro Electricity Power Plant, Turkey against the SocialCarbon standard version 4.2 in order to demonstrate the social and environmental benefits on local level. The Verification scope is defined as an independent and objective review of the SocialCarbon Point ONE Report, which involves among others the assessment of indicators' scoring and evaluation.

Although SocialCarbon is a holistic assessment the organization is not obligated to demonstrate legal conformity within all the six aspects: social, human, natural, biodiversity, financial and carbon. The auditing process must be limited to the information described or required in the indicator or else the scope of validation becomes "virtually unlimited" and a never ending process, because project developers have to demonstrate conformity with all the existent laws. This decision by the SocialCarbon was also taken to avoid that SocialCarbon became an excuse to audit other issues not related to the impacts of the carbon project, such as: fiscal, salary, social security or confidential information.

Therefore the verification team (VVB) constrained the Verification of the SocialCarbon report to:

- Confirm the completeness of the report in order to comply with the template and guidance for elaborating SocialCarbon Reports;
- Attest relevance and correctness of the disclosed information to each indicator
- Evaluate the scoring of indicators within described scenario in accordance with the "Indicators for the Hydroelectric Power Plants Version 4.1" and the "Indicators adapted for Multiple Hydroelectric Power Plant Projects[2], Turkey

Following approaches have been applied, where applicable and information was available:

- Documentation:
  - All documentation mentioned in the SCR must be available for auditors
  - Documentation not mentioned in the SCR may be also required to evidence some information (i.e. if the project developer states that is planning to implement a project /program the "plan of activities" may be required)
- Questionnaires:
  - Always specify in the report the name, organization and position of people responsible for providing any type of information (not just the responsible) and ask for a signature whenever is possible.
- Meetings:
  - With local stakeholders: list of presence and tape it whenever is possible.
  - With project owners: another option is to summarize in a report and ask for a approval of the content.

1.2 Project Description

Koyulhisar HPP is planned and implemented, by Bereket Enerji Üretim San. Ve Tic. A. Ş, as hydroelectricity power plant on the Kelkit Stream, within the jurisdiction of Koyulhisar town of Sivas Province, with geographic coordinates 40º16"13,48' N and 37º50"55,58' E.

The project consists of following main units

- a set of open canals and tunnels
- a reservoir, with area of ca. 1.2 km^2
- a head pond from which water is loaded to the penstock
- a powerhouse station with 3 Francis-type turbines, 21 MWe each, and total installed capacity of 63 MWe.

[2]Koyulhisar HPP is one of hte listed Hydroelectric Power Plant Projects

As identified in the FSR, based on water availability, water velocity and the project technical design, the Koyulhisar HPP was foreseen to generate 262,365 MWh of electricity per year. However, in the VCS PD the annual electricity generation is indicated as 220,000 MWh. It is enlightened that the 16% production loss is due to the upstream government owned dams (Kılıçkaya Dam - 124 MW and Çamlıgöze Dam - 33MW) and the specific seasonal and topographic conditions. Based on Turkey's Combined Margin Emission Factor (**EF_{CM}= 0.52826 tCO2e/MWh**), which was proved to be reasonable and conservative during VCS validation, the expected annual GHG Emission reductions generated by the project activity are estimated to 116,217 tCO2/year

During the first monitoring period, for the period 17/11/2009 – 31/10/2011, it was confirmed that the net electricity generation is ca. 403,323 MWh, resulting in measurable and accounting GHG emission reductions of 213,059 tCO, which were reported in the VCS Verification Report for Koyulhisar Hydro Electricity Power Plant for monitoring period 17/11/2009 – 31/10/2011[3] .

Table 1: Project milestones

Date	Milestone	Reference
28/06/2004	The initial Feasibility Approved by DSI	Approval letter of DSI
18/01/2005	Water Usage Agreement co-signed with DSI	DSI Water usage Agreement
02/10/2005	Electricity Production License issued by Energy Market Regulatory Agency (EMRA)	EMRA License
01/06/2005	EIA Exemption Certificate issued	See Annex-3
07/08/2006	Financial Closure and Investment Decision date	Credit Agreement(first Trench)
06/01/2009	Construction Started	NHS Record
03/09/2009	Application for the addition of the third unit and approval of revised feasibility	Application Letter to DSI
August 2009	Final version of Revised Feasibility released	Feasibility Report
17/11/2009	The First two units of the project became operational (Project Start Date)	Provisional Acceptance Protocol by MoENR
17/11/2009	Application for license Revision to EMRA	Application Letter to EMRA
02/09/2011	Turkuaz Contracted for Carbon Finance	Contract
10/09/2011	Validating DOE Contracted	Mail Order
23/08/2012	DSI Approval For Revised feasibility (The adendum to Water usage Agreement))	Adendum to water usage agreement

Table 2: Significant dates to project's monitoring

Date	**Milestone**
11.11.2011	Final Validation Report
17.11.2009	Date of commissioning of the plant /start of 1st monitoring period
13.08.2009	Calibration date of meters (Main Meter-S.n. 53030781 and the control meter-S.n. 53030782)
12.08.2019	End of Calibration validity
31.10.2011	End of the 1st monitoring period (VCS) & Social carbon Point ZERO
1.11.2011	Start of 2nd monitoring period (VCS) & Social carbon Point ONE
31.07.2013	End of the 2nd monitoring period VCS) & Social carbon Point ONE
16.11.2019	**End of first crediting period (VCS)**

[3] VERIFICATION REPORT 21218413 - Koyulhisar HEPP, Turkey v1.0, issued on 21/12/2011

2 Methodology

The validation of the Koyulhisar HPP project against the SocialCarbon Standard version 4.2 /1/ is performed in the following 3 phases:

- desk review of the project SocialCarbon Point ONE Report
- on-site visit (site inspection) and follow-up interviews with relevant project stakeholders
- resolution of outstanding issues including material discrepancies and the issuance of the verification report

The following sections outline each step in more detail.

2.1 Document Review

Ref Nr & Document/Name		Comment
/1/	EB67 ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", v12.1.0.	The CDM approved consolidated baseline and monitoring methodology applied for the development of the Koyulhisar HPP VCS project activity, where the indicated version is the latest available at the time of validation
/2/	EB63 Annex 19 "Tool to calculate the emission factor for an electricity system", v2.2.1	The CDM methodological tool applied for the estimation of the expected GHG emission reductions generated by the Koyulhisar HPP, here the indicated version is the latest available at the time of validation
/3/	VCS Project Description for Koyulhisar Hydro Electricity Power Plant, v1.4	The final VCS PD, which was issued on 08/11/2011 by Turkuaz Karbon Varlık Yönetimi Enerji Proje ve Dan. San. İth. İhr. Ltd. Şti. And approved by the assigned VVB.
/4/	Final VCS Validation Report for Koyulhisar Hydro Electricity Power Plant, v1.0	Final validation report was issued by the assigned VVB on 11/11/2011
/5/	VCS Verification Report for Koyulhisar Hydro Electricity Power Plant for Monitoring period 01/11/2011 – 31/07/2013 v1.0	Final verification report for the 2nd monitoring period, issued on 09/09/2013
/6/	Social Carbon Report - point ONE - Koyulhisar HPP for the period 01/11/2011 – 31/07/2013	The final version, v1.1 was issued on 05/09/2013 and delivered to the VVB for verification.
/7/	Koyulhisar HPP Social carbon report point 1 data	An excel workbook, which was used by the carbon consultant to determine the scoring of each resources.
/8/	Employee Satisfaction Questionnaire	Disclosed to the VVB in order to substantiate the indicator 'Human Resource Availability Capacity Building Initiatives' and indicator Benefits
/9/	Results of employees satisfaction questionnaire	Disclosed to the VVB in order to substantiate the indicator 'Human Resource Availability Capacity Building Initiatives' and indicator Benefits
/10/	Environmental management plan	Provided to the VVB in order to substantiate indicator 'Environmental Management'
/11/	Environmental awareness leaflet	Provided to the VVB in order to substantiate indicator 'Involvement of Employees in the Project' and 'Sustainability Principles'
/12/	Environmental policy document	Provided to the VVB in order to substantiate indicator '.Environmental Legislation' and 'Legal Procedures'
/13/	Legal follow ups system documents	Provided to the VVB in order to substantiate indicator '.Environmental Legislation' and 'Legal Procedures'
/14/	Response to canal problems – List of Actions	Provided to the VVB in order to substantiate indicator 'Legal Procedures'
/15/	Social demand management SOP	Provided to the VVB in order to substantiate indicator 'Social Demands'
/16/	Year 2012 Training records	Provided to the VVB in order to substantiate indicator 'Benefits', indicator 'Human Resource Availability Capacity Building

		Initiatives' and indicator 'Health and Safety'
/17/	Year 2013 Training records	Provided to the VVB in order to substantiate indicator 'Benefits', indicator 'Human Resource Availability Capacity Building Initiatives' and indicator 'Health and Safety'
/18/	Climate change training records, incl. list of participans, pictures and training materials	Provided to the VVB in order to substantiate indicator 'Involvement of Employees in the Project'
/19/	Continuous Grievance Mechanism	Provided to the VVB in order to substantiate indicator 'Communication with Stake Holders'
/20/	Environmental and waste management training materials, records and certificates	Provided to the VVB in order to substantiate indicator 'Sustainability Principles', indicator 'Environmental Management' and 'Environmental Risk Management'

2.2 On-site Inspection and Interviews

The obligatory site visit took place from 25/08/2013 to 27/08/2013 in Sivas, Turkey and on the project site (Koyulhisar HPP) Koyulhisar town, of Sivas Province, Turkey. The objective of the on-site visit is to confirm the validity and authenticity of delivered supporting documents as well as consistency of the monitoring and reporting with the established procedures. The site visit was carried out by means of interviews with the persons indicated inTable 3 and document review as indicated in section 2.1.

In the course of the site inspection, the verification team carried out interviews with plant manager, carbon consultant, and relevant project stakeholders.

Table 3: People involved in the verification process (The signed list of participants is included as ANNEX A – LIST OF PARTICIPANTS TO THE SITE ASSESSMENT ON 26/08/2013 & 27/08/2013)

Participant	Position	Institution
Dr. Aslı Sezer Özçelik	Consultant	Ekobil Ltd
Denitsa Gaydarova-Itrib	VVB	TÜV Rheinland GmbH
Özgün Gül Koparan	Environmental Relations/ Hydro-biologist	Bereket Enerji Üretim A.Ş.
Hüseyin Gürarslan	Environmental engineer	Bereket Enerji Üretim A.Ş.
Sena Polat	Environmental engineer	Bereket Enerji Üretim A.Ş.
Veli Aygül	Civil Engineer	DSI
Ihsan Şeker	Electrical Engineer, Site Manager	Bereket Enerji Üretim A.Ş.
Ahmet Yıldız	Chief of staff	Bereket Enerji Üretim A.Ş.
Hüseyin Özer	Director of forest management	Koyulhisar Forestry Directorate
Mehmet Yılmaz	Chief clerk	Koyulhisar district Governorate
Adnan Alemdar.	Muhtar (Aşağıkale Village head)	Aşağıkale village
Enver Kılıç	Muhtar (Kalebaşi village head)	Kalebaşı Village
Süleyman Coşkun	Worker at Canal maintenance team	Bereket Enerji Üretim A.Ş.

3 Validation Result

3.1 Evaluation of Consistency and Completeness of Indicators

The consistency and completeness of the indicators included in the SC report for the Koyulhisar HPP project is evaluated based on the "Approved Indicators for Hydroelectric Power Plants Version 4.1" /2/.

The PP clearly indicated in the SocialCarbon report v1.1 that the "Approved Indicators for Hydroelectric Power Plants Version 4.1" need to be adapted to the specific project. The indicators alteration was requested to the

Ecologica Institute and consequently the "Indicators adapted for Multiple Hydroelectric Power Plant Projects, Turkey" has been approved and posted on the SocialCarbon website. The adjustment of the "Approved Indicators for Hydroelectric Power Plants Version 4.1" for the Koyulhisar HPP project, consists of exclusion of 2 indicators, namely

- 'APP (Permanent Protected Areas) and Legal Reservation' under the Biodiversity Resource, since no such areas exist around the project vicinity as indicated in the PIF document and observed from the GEODATA GIS based map /15/ from the Ministry of Forestry and Water Affairs Network.
- 'Transfer of New Technology' under the Human Resource, since 2 vertical axis Francis type turbines are used and this kind of technology is not new and the contribution of the project will be limited to training of the staff and some added experience to the project operators

3.2 Assessment of Indicators

3.2.1 Social Resource

3.2.1.1 Population Displacement	
Statement in SCR	
As was pointed out in the point zero report, the project didn't cause people to leave their houses, but only at some places people lost some part of their land where they were using for crop or fruit growing, but these people are compensated. There was a need to extend the borders of the expropriation, along the canals, these lands have undergone the official expropriation process, with which the land owners are compensated fairly enough.	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
6	During the site, VVB was able to confirm, by interviewing the muhtars of the nearest 2 villages and the chief clerk of the Koyulhisar district Government that the expropriation process has been completed and all involved landowners received the agreed compensation. During the current period, no allocation of people and activities was required. The expansion of the expropriation borders along the canals, is not significant. Besides, those landowners also got the respective compensation even though the land was not cultivated. Therefore, VVB approved that the assigned score is reasonable.

3.2.1.2 Communication with Stake Holders	
Statement in SCR	
The project owner is open to dialogue with stakeholders. They communicate regularly with the village heads, and the district governorship and welcome the visitors. The visitors are recorded at the power house gate for the purpose of safety. The landline numbers of the powerhouse and the mobile numbers of the key personnel is made available to the village heads, local governor and the opinion leaders in the vicinity such as the director of the local primary school. There is a continuous and permanent dialogue platform, where all the stake holders are welcome to visit and obtain information about the project.	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
4	In the course of the site visit, it was easily realized that stakeholders and Plant manager has very good relations, and communicate frequently. Mr. Adnan Alemdar (Aşağıkale Village head) and Mr. Enver Kiliç (Kalebaşı village head) as well as Mr. Hüseyin Özer (Director of forest management by Koyulhisar Forestry Directorate) and other authorities representatives, whit whom VVB, confirmed that they can easily reach the plant manager or any other Power Plant employees, since they have their mobile phone numbers. VVB also noticed that almost all stakeholders are aware of the continuous and permanent dialogue platform, however prefer to use the provided mobile phones. VVB consider the score reasonable and observed that PO target an improvement of the score for the following monitoring period

3.2.1.3 Acceptance	
Statement in SCR	
After the reinforcement of some part of the water conveying canal, in our site visit we have observed that the local stakeholders were more supportive to the project as the project provided irrigation water and supported local community.	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
6	The VVB constitute significant improvement of this parameter. The interviewed stakeholders pointed out that their concerns were appropriately handled during the monitoring period. Thus, it was obvious that stakeholders, i.e. authorities as well as local people, are pleased with the on-going project activity. Mr. Mehmet Yılmaz (chief clerk by Koyulhisar district Governorate) as well as the headmen of the nearest villages mentioned that the project is very well accepted by locals and authorities. Therefore VVB confirm the appropriateness of the score and was delighted to observe the positive attitude to the Koyulhisar HPP

3.2.1.4 Social Demands	
Statement in SCR	
The project owner have a standard operating procedure to address social demands. During the monitoring period project owner helped the nearby villages and addressed most of the social demands, such as sending earth movers or helping the villagers with company cars (transport from village to town in emergency cases) or asking for menforce, within their capability limits. Target - The project owner will develop an integrated plan to elaborate and execute compulsory and voluntary social actions, as much as their capacities will allow them to develop such a plan	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
5	VVB witnessed that a simple but very practical standard operating procedures to address social demands has been developed for and in operation at the Koyulhisar HPP. It basically determines how the plant manager shall response to a given social demand. The villages' headmen were grateful that plant manager meets their demands as far as possible. Some examples were mentioned as well, i.e. provision of construction material, emergency transportation, etc. Thus the assigned score is determined to be reasonable.

3.2.1.5 Social Programs	
Statement in SCR	
The caper bushes program that was developed in cooperation with the forest authority started to give its results. The project owner is still in close co-operation with the local forest authority and they are supporting the tree and schrub plantations by providing seeds. Also research is undergoing to understand if it would be possible to develop a program where villagers will learn how to grow edible mushrooms over dead tree trunks. There is still a need to develop better social programs that will support the community.	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
4	The initiated social program and the further planned programs were discussed in details with Dr. Aslı Sezer Özçelik (carbon consultant), Mrs. Özgün Gül Koparan (Env. Relations/representative of PO), Mr. Ihsan Şeker (plant manager) and Mr.Hüseyin Özer (Director of forestry management). The aim of the social program is to contribute to additional income generation for the villagers. During the site visit, VVB was able to observe that the caper plantation cover huge area along the cannel. The interviewed muhtars state that the villagers are informed about the plantations and appreciate the program. It was further discussed that the caper bushes are still small and the benefits to the locals are still restricted, which prove the appropriateness of the indicator's score.

3.2.1.6 Social Benefits	
Statement in SCR	
The project owner, supplied irrigation water to the local community, in coordination with the DSI. Local Stakeholders stated that they were happy because of this support as they were able to grow more crops since they are able to irrigate their gardens. In addition to this the stakeholders stated that the project helped them improve their roads.	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
5	It was clearly observed that Mr. Adnan Alemdar (Aşağıkale Village head) was apparently glad that additional irrigation water was provided to the locals from the projects canal. The DSI representative, Mr. Veli Aygül also highlighted that the extra supplied irrigation water solved a lot of irrigation problems and complains from the local stakeholders. In addition it was further explained that sufficient water supply push up the production of some local tomato species and other local crops, from which local generate profit as well.

3.2.2 Human Resource

3.2.2.1 Human Resource Availability Capacity Building Initiatives	
Statement in SCR	
The employee is qualified for the job and they are receiving regular trainings to keep them up to date. It is observed that the number of internal trainings were more frequent during this monitoring period, compared to the previous (point zero) monitoring period.	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
6	During the site visit, it was determined that the employees are qualified for their positions. In addition, it was stated that the staff have the possibility for position-specific trainings, and all employees undergo the obligatory Health & Safety trainings on regular bases.

3.2.2.2 Health and Safety	
Statement in SCR	
The project has improved its occupational health and safety sytem, as they have increased the frequency of Health and safety trainings. Compared to point 0 period there was no life treathening accident. This is attributable to the increased frequency of H&S trainings. However it is also observed that there is no performance monitoring or set targets to improve the health and safety system.	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
4	PO declared that they have improved the occupational health and safety at the Koyulhisar HPP project, by providing Health and Safety Trainings more frequent than before. PO also pointed out that no crucial accidence occurred for the monitoring period in question.

3.2.2.3 Benefits
Statement in SCR
The project employee are provided with free lunch and dinner depending on their shift, with free transfer to their house. In addition to this they are offered inhouse health and safety and environment related trainings to improve their capacity. These trainings are beneficial to the employee, however, since these are not directly related to improve their ocupational skills we only considered Free meal and free transportation as the major benefits provided to all the employees. In other words, all employees benefit in two of the areas. In addition to these, during this monitoring period the project owner have measured the employee satisfaction. But since the number of the benefits offered to the employees has not changed we didn't increase the score. But have observed that the

target was realized.	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
4	VVB discussed the profits of employees by working for the Project proponent. Indeed, it was finally concluded that the project is beneficial to all employees only in 2 areas. The 3rd contribution, i.e. occupation specific trainings, is not available to all employees, and therefore the project activity is considered to be scored accordingly.

3.2.2.4 Involvement of Employees in the Project	
Statement in SCR	
The project management have organized a training regarding the climate change and carbon finance and informed all the employees about the project.	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
5	Since PO pay huge attention to the renewable energy, it was important that most employees are aware of the electricity generation, renewable energy, etc. Therefore the Koyulhisar HPP's employees were introduced to those topics. Specified training, incl. presentation and flyers were developed and presented by Mrs. Özgün Gül Koparan. Besides, the attendance lists and presentation slides and flyers were disclosed to the VVB. Eventually the score deems realistic.

3.2.3 Financial Resource

3.2.3.1 Economic Performance	
Statement in SCR	
The project owner claimed to have an improved performance for this monitoring period	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
5	It was the PP statement, that the project met the stakeholder expectations. Carbon consultant also analyzed the annual electricity generation and substantiated PP statement. VVB witnessed that the electricity generation by Koyulhisar HPP corresponds to the one estimated by carbon consultant in the VCS Validation Report.

3.2.3.2 Market	
Statement in SCR	
The carbon asset of the project is developed considering the CDM rules and the project is validated to the Voluntary Carbon Standard and can only reach to the voluntary markets.	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
3	It is well-known that emission reduction projects in the Republic of Turkey are only eligible for the voluntary market, because of the status of the country by the UNFCCC. Therefore the indicator is scored properly.

3.2.3.3 Sale of credits
Statement in SCR
The project owner sold out the yield of the previous vintage. The price was in an accordance to the market averages for similar projects.

Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
4	During site visit, carbon consultant as well as PP declared that the VER generated from the previous vintage were sold on the average market price. Since these information is confidential, no precise numbers were mentioned

3.2.4 Natural Resource

3.2.4.1 Sustainability Principles	
Statement in SCR	
As mentioned in the previous point zero report, the sustainability concept and principles are appreciated and practiced as environmental protection, improved working environments, in-house trainings and improving the quality of life in the vicinity of the project area. These are applied as common sense and as part of the company culture. This situation remained and the company could not make more efforts to integrate sustainability concepts into company culture, because during this monitoring period they were more focused in finding resources for governance related topics such as this one. Therefore the score and the target remained the same.	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
3	By the interviews with plant manager as well as Mrs Gül Koparan (Environmental relations) and Mr Hüseyin Gürarslan (Environmental Engineering), VVB was able to confirm that the sustainability values are integrated during the operation of Koyulhisar HPP . However, the implementation of the sustainability principle, is problematic, so far.

3.2.4.2 Environmental Management	
Statement in SCR	
In our latest investigations we have observed that the project site and the project owner Bereket energy have shown efforts to improve their EMS. They have a documented system, and we also have observed that they have given some internal trainings about the components of the EMS, such as the solid waste handling and management, however the implementation of the documented system does not have yet a targeting and reporting component.	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
3	The Environmental Management Plan as well as Environmental Policy Plan and Environmental Awareness Leaflet were disclosed to the VVB. Thus a simple environmental management system is developed, however monitoring and reporting still not performed. As it was substantiated by the training records, where indoor trainings on waste management, environmental management and global climate change were provided in 2012 & 2013.

3.2.4.3 .Environmental Legislation	
Statement in SCR	
The project complies with the Turkish environmental regulations and rules. All the environmental permits and licenses are valid and up to date.	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
5	In the course of the on-site visit, the Plant manager as well as the environmental relations team leader, Mrs Gül Koparan, claimed that the project complies with the Turkish national law and consequently, all required permits are available. It was further explained that a system on following up the latest environmental legislation is developed and in use. In addition, all representatives of contacted authorities, confirmed that the project activity is in line with the latest revision of the national legislation.

	Therefore, VVB affirms that the assigned score is reasonable.

3.2.4.4 Legal Procedures	
Statement in SCR	
During the assessment period for the point year zero report, some of the citizens that perceived the canal structure to be risky have applied to the governors office and the governorship set up an investigation committee and issued a warning via DSI who is the authority tat the project owner has a water usage agrement. The letter sent to the project owner was aiming to ensure that project owner strengthens the canal system and ensures its safety and is not posing any risks to nearby settlements. The project owner genuinely reacted to this request and reinforced some parts of the canal structure and solved the problem. This is also documented by a letter sent back to DSI. The mitigation was implemented during our monitoring period, but there were no new cases or complaints during this monitoring period. Therefore we can say that the project didn't suffer from any judical action.	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
6	For the monitored period, it was clearly indicated, that no legal procedures are on-going or even initiated. In addition, it was mentioned by the DSI representative that the case from the previous monitoring period, was quickly analyzed, the necessary action undertaken and the suit case was closed.

3.2.4.5 Environmental Impacts	
Statement in SCR	
The project has submitted a project description file to the Sivas Province General Directorate of MoEF. The file is studied and the project received an EIA exemption certificate. Target - The project owner will ensure to keep the impacts at a minimal level	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
5	As it was indicated during the SC Point Zero validation report, the project activity obtained EIA exemption certificate. Though a Project Identification File (PIF) was prepared and the potential environmental impacts analyzed. During the site-visit, Mr Hüseyin Özer (director of forestry management) confirmed that the project activity has no inverse impact on the nearest environment, pointing out that they are glad that PP supports the stabilization of slopes in cooperation with the Koyulhisar Forestry Directorate. Therefore, the assigned score deems reasonable, i.e. the performed study (PIF) indicate insignificant impact on environment.

3.2.4.6 Environmental Risk Management	
Statement in SCR	
As we have explained in the point zero report, the company culture of the project owner has the sincere perception of the environmental risk management concept. There are also new warning signs that were due to arrive by the time we were finalizing this report. We have also observed the documentable efforts of the central management towards drafting an Environmental Risk Management system, but these were not yet completed at the time we have drafted this report. As a result, also taking into consideration that the monitoring, evaluation and reporting systems were not yet in place we kept the score of the point zero year. It is also observed that there were no environmental emergencies in the project site during this monitoring period	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
4	The Emergency management plan was provided to the VVB. Furthermore it was clarified that the Environmental risk management system is under construction. It was commented that the PP, i.e. Bereket Enerji Üretim A.Ş., employed responsible person, who is taking care of the projects risk management. VVV assured that the environmental risk management is accordingly discussed

	and scored, however no monitoring and/or reporting system exits so far.

3.2.4.7 Reservoir and Marginal Area Management	
Statement in SCR	
There is no intrusion to the project area. The project owner have established a remote observation system to observe and monitor the security of the areas around the regulator and along the canal.	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
5	The extent of the marginal areas is limited. Fences and security cameras have been set up to protect and observe the weir structures. Special team is appointed to observe and maintain the canal, so that 24 hours canal supervision is ensured. The power house has been separately fences and security gates. No invasions have been registered.

3.2.4.8 Erosion, landslides, silting and floods	
Statement in SCR	
As was indicated in the PDD and in the point zero report, The project is located within North Anatolian Fault Zone (NAF) where the rocks and formations are not stable and are prone to land slides and mass flows. Major land slide and erosion related problems occur along the canal that conveys water to the powerhouse. The area surrounding the reservoir is also prone to erosion, but both along the canals and around the reservoir area, the project owner has earlier started measures such as schrub and three plantations. We have observed that these plantations have started to grow up and be effective. The project management is continuing their close co-operation with the forest authority to improve these areas.	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
5	the VVB observed that the slopes along the canal, as well as the marginal area around the reservoir are planted with bushes and other vegetation in order to stabilize the slopes, and therefore prevent or at least minimize the occurrence of landslides and erosion. The local forestry directorate confirmed that PP undertook due actions to stabilize slopes along the canal. Furthermore, it was mentioned that initially some difficulties were caused by flooding. However the problem was solved by building of additional and better drainages, whereby the impacted villagers were compensated accordingly. Therefore VVB concludes that the score for this indicator corresponds to the observed situation.

3.2.4.9 Water Resources	
Statement in SCR	
The project has no negative impact on the water quality and quantity. The project increases the oxygen content of the river water at the down stream site that the fish populations are observed to improve at the tail water stream of the project. It is observed in this monitoring period that the situation has not changed. The water awareness campaign that was targeted in the point zero stage was not achieved due to lack of budget. Therefore target remained the same.	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
4	As run of river HPP, the project has no significant impact on water quality and quantity. Indeed, the defined water quality is released between the weir structure and the power plant, which deems sufficient to sustain the aquatic flora and fauna. Therefore, PP claims to cause minimum deterioration of water quality and quantity in the reservoir and downstream.

3.2.5 Biodiversity / Technology Resource

3.2.5.1 Recovery of Degraded Areas

Statement in SCR	
As was mentioned in the point zero report, the project has relatively small footprint compared to power plants with similar capacity. However, there were some areas that were disturbed to construct the canal or other project structures. These areas are being reclaimed and the project management is working to improve the project landscape. In addition to this The project owner is trying to improve the surrounding areas in order to avoid mass flow and improve slope stability. The tree plantation campaign that was targeted in the previous report was not realized due to lack of budget. Therefore the target and score remained unchanged.	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
4	VVB clearly observed that real actions are undertaken to maintain project area. One of the main aims is to improve slope stability by planting vegetation along the canal and on slopes. Newly planted bushes were identified along the length of the canal, as well as on the reservoir slopes and around the power plant. The undertaken activities are initialized by PP and generally performed in cooperation with the forestry directorate, as revealed by Mr. Hüseyin Özer

3.2.5.2 Biodiversity Conservation	
Statement in SCR	
As mentioned in the point zero report. The project owner is safeguarding the project boundaries and watching for illegal hunters and fishers. This way they are supporting the local wildlife. Due to lack of budget the target set at the previous report (point zero report), was not realized and the score and target therefore remained same.	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
3	PP claimed that its actions are limited to the legal obligations, so far. Basically, it was mentioned that in long-term, the HPP could be considered to have positive impact on the environment and biodiversity, since it expands the green belt around the river bed. Eventually, the assigned score is seen as reasonable.

3.2.5.3 Ichthyofauna	
Statement in SCR	
As was mentioned in the point zero report, the project is supporting the fish life by preventing illegal fishing in the project area. They have an active fish ladder at their spill way and they have observed fish activity in that fish passage. In the early project history the piece of regulation that ask all the hydropower facilities to have a fish ladder was not existing but later the authorities asked the project owner to built one. This is the reason why they are now trying to incorporate one fish ladder after the completion of the weir construction. The set target at the point zero stage was to construct a fish passage at the weir location. The project started the construction of the fish passage, and completed most of it except the connection of the ladder to the reservoir. Therefore it is not operational. Therefore the score and the target remained same. Target – Complete the fish passage and ensure it is operational	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
5	VVB discussed in details the ichthyofauna issues, since the last causes always a lot of concerns and confusions among the local stakeholders. PP explained the situation for the Koyulhisar HPP project activity and illustrated the actual state. Basically, the DSI representative (Mr Veli Aygül) that at the time of construction, the existence of fish passage was not complimentary, and therefore it was not designed and constructed during the construction phase. Indeed, the VVB witnessed that the fish passage is almost completed, i.e. the passage only needs to be connected to the reservoir. It is worth mentioning that per Turkish legislation, the specific project (Koyulhisar HPP) was initially not obliged to have a fish passage, and therefore designed without such. However at later stage, the legislation was amended. Thus the responsible national authorities kindly requested the construction of a fish passage in order to comply with the latest Turkish regulations and the PP responded accordingly.

3.2.6 Carbon Resource

3.2.6.1 Additionality	
Statement in SCR	
The project is validated to the VCS version 2007 standard and implementing CDM Approved tools to demonstrate additionality the project is under VCS version 3.0 Verification.	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
6	A positive VCS validation report and statement was issued to the Koyulhisar HPP project activity on 11/11/2011, where project's additionality was carefully assessed against the latest version of the approved CDM methodology ACM0002 at the time of issuance of the VCS PD.

3.2.6.2 Emissions Reductions Calculations & Monitoring	
Statement in SCR	
The projects emission reductions are to be calculated and monitored based on CDM approved Methodology "ACM0002 version10: Grid-connected electricity generation from renewable sources	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
6	The emission reduction calculation and monitoring are discussed in details in the corresponding VCS verification report for the monitoring period 01/11/2011 – 31/07/2013. It was performed in accordance to the approved CDM methodology ACM0002 and the corresponding methodological tools. The corresponding verification report indicate the amount of real and accountable CO2 emission reduction generated by the Koyulhisar HPP.

3.2.6.3 Validation and Verification	
Statement in SCR	
The project is validated by a UNFCCC accredited DOE, and an other UNFCCC accredited DOE is assigned for the verification of the project.	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
6	The validation and verification was conducted by TUV Rheinland accredited under DOE-E-0013 and ANSI 14065

3.2.6.4 Project Performance	
Statement in SCR	
Comparing the project performance to the corresponding vintage year estimates provided in the validated VCS-PD we observe that the project underperformed about 11 % for the 2011, and performed just as expected (about 100.34 % more) for year 2012, and again performed 17 % more than estimated for the first 7 months of year 2013. However comparing the overall performance it is observed that the project performed a little over (7%) than estimated in the validated PDD.	
Final score Point 1	*Verification Opinion to the statement of TÜV Rheinland*
6	Carbon consultant enlightened the computation of project performance and eventually showed that Koyulhisar HPP performed excellently during the monitoring period.

4 Validation Statement

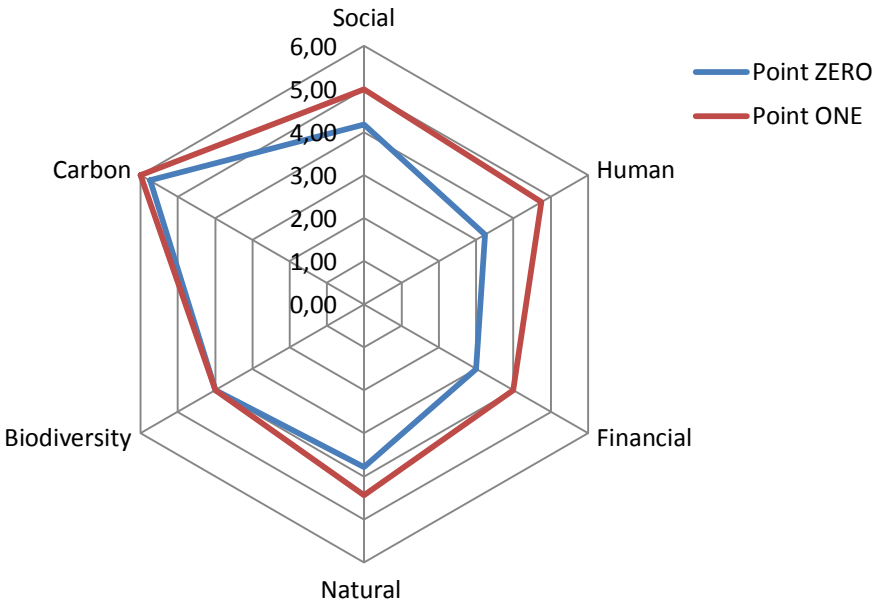
Bereket Enerji Üretim San. Ve Tic. A. Ş.
15 Mayıs Mh. 832 Sk. No:2 K:2 75. Yıl Esnaf Sarayı
DENİZLİ /Türkiye 15/09/2013

RE: SOCIALCARBON Standard - Point ONE verification of Koyulhisar HPP, Turkey

Bereket Enerji Üretim San. Ve Tic. A. Ş.with registered office at 15 Mayıs Mh.. 832 Sk. No:2 K:2 75. Yıl Esnaf Sarayı Denizli, Turkey has engaged TÜV Rheinland Energie und Umwelt GmbH to review and verify the SCR Point ONE and all assertions related to the GHG project under SOCIALCARBON Standard respectively. The assertions made in the SCR Point ONE Version 1.1, submitted 05/09/2013, indicate a Social Carbon performance as follows:

	Average score Point ZERO	Average Score Point ONE	General Performance
Social	4,17	5.00	Improved - Sustainable
Human	3.25	4.75	Improved - Sustainable
Financial	3.00	4.00	Improved - Satisfactory
Natural	3.78	4.44	Improved - Sustainable
Biodiversity	4.00	4.00	No change - Satisfactory
Carbon	5.75	6.00	Improved - Sustainable

The VVB witnessed that the Koyulhisar HPP project activity comply with Criteria 4 – Continual Improvement of Project Performance during the second periodic assessment, i.e. the performance of the project in the six area during the Point ONE period has improved in comparison to the baseline scenario Point ZERO (please see the figure below).



The VVB have conducted the verification of the SOCIALCARBON assertion in accordance with the requirements of the SOCIALCARBON program requirements. The project information verified includes the

SOCIALCARBON Report (SCR) delivered to TÜV Rheinland Energie und Umwelt GmbH and all relevant information and evidence acquired during the validation process as stated in the verification report "Social Carbon – Point ONE – Verification report 21222980 - Koyulhisar Hydro Electricity Power Plant" as of 15/09/2013.

We have come to the conclusion that based on our review and all available documentation the assertions are made in accordance with the requirements of the Social Carbon program, are material correct and fairly represents the socioeconomic parameters without material discrepancies.

Cologne, 15/09/2013

ANNEX A – LIST OF PARTICIPANTS TO THE SITE ASSESSMENT ON 26/08/2013 & 27/08/2013

/ Koyulhisar HPP

Monitoring Period 01/11/2011 to 31/07/2013
VCS Verification
Social Carbon Point ONE

TÜVRheinland®
Precisely Right.

On-Site-Assessment
Date: 26/08/2013

LIST OF PARTICIPANTS

KATILIMCI LISTESI

Participant (name) Katılımcı (adi)	Position Meslek	Institution Kurum/İşveren	Signature Imza
Aslı Özuelik	Consultant	Ekobil Ltd.	[signature]
Özgün GÜL KOPALAN	Hidrobiyolog	Bereket Enerji Üretim A.Ş.	[signature]
Hüseyin GÜRARSLAN	Environmental Engineer	Bereket Enerji Üretim A.Ş.	[signature]
Sena POLAT	Environmental Engineer	Bereket Enerji Üretim A.Ş	[signature]
~~İhsan SE~~			

/ Koyulhisar HPP

Monitoring Period 01/11/2011 to 31/07/2013
VCS Verification
Social Carbon Point ONE

TÜVRheinland®
Precisely Right.

On-Site-Assessment
Date: 27.8.2013

LIST OF PARTICIPANTS

KATILIMCI LISTESI

Participant (name) Katılımcı (adi)	Position Meslek	Institution Kurum/İşveren	Signature Imza
Aslı Özgeliz	Consultant	Ekobil Ltd.	
Veli Aygül	İnşaat Müh.	DSİ 192 Şube Müdürü	
İhsan ŞEKER	Elektrik Müh	Bereket Enerji	
Özgün GÜL KOPARAN	Hidrobiyolog	Bereket Enerji Üretim A.Ş.	
Ahmet YILDIZ	Personel Şefi	Bereket Enerji Üretim A.Ş	
Sena POLAT	Çevre Mühendisi	Bereket Enerji Üretim A.Ş	
Hüseyin GÜRARSLAN	Çevre Mühendisi	Bereket Enerji Üretim A.Ş.	
Murat Özçelik	Consultant	Ekobil Ltd.	
Denitsa Gaydarova-Iteif	DOE / VVB	TÜV Rheinland GmbH	
Hüseyin ÖZER	Orman İşletme Müdürü	Koyulhisar Orman İş.Md.	
Mehmet YILMAZ	Orman İşl. Md.	Koyulhisar Kaymakamlığı	
Adnan ALEMDAR	Aşağıdere muhtarı	Eta Listesi	
Enver Kılıç	Kalebaşı Köyü. Mh.	Çiftçi	
Süleyman Coşkun	Kamal kantarcı ekibi	Bereket enerji üretim	

ANNEX B

Table 4

CAR	CL	Observation (CAR/CL)	Doc Reference No.	Summary of project owner response	Validation team comments	Validation team conclusion
x		Please revise the future target for the indicators, so that they are related to the precise indicator and based on the current situation (for instance indicator Social Demands)	SC P1 section 4.1	Corrected Plese see version 1.1 of the Koyulhisar Social Carbon Report	Ok	Closed
x		Please develop the comment on current situation for the indicator ' Social Demands', so that examples on communicated social demands are provided	SC P1 section 4.1 *Social Demand*	Corrected Plese see version 1.1 of the Koyulhisar Social Carbon Report	Ok	Closed
	x	Please clarify the comments on indicator H&S. Please based on which criteria is it judged that the H&S has improved?	SC P1 section 4.1 *Health & safety*	During point 0 monitoring period there was one serious accident, but diring this point 1 monitoring period the frequency of H&S trainings were increased thus there were no life threatenning accidents . This is a significant improvement but we have also observed that there were no targets or monitoring system for the H&S indicating gaps. Please see version 1.1 of the Koyulhisar Social Carbon Report, we have improved the wording of the explanation to clarify the situation.	OK	Closed
x		Please clearly indicate in which areas the employees face additional benefits, and clarify what type of trainings did they have t he opportunity to participate (it was mentioned sth about E-cards?) Please consider revision of the score if necessary	SC P1 section 4.1 *Benefits*	We have gone trough all the employee training records, and realized that these trainings were inhouse HSE related trainings, but he only belnefit all the employee are receiving was free meal and free transportation. We have revised the explanation and kept the score as it is, please see version 1.1 of the Social Carbon Report.	Ok	Closed
	x	Please clarify if periodical monitoring of environment aspects is not required by the MoEUP as part of the Exemption letter	SC P1 section 4.1 *Environmental impacts*	Due to change in the new structure of the ministry of Ennvironment, The MoEUP is implementing these monitorings as regular auditory visits to the facilities.	Ok	Closed
x		Please revise the comment on indicator ' Environmental Risk Managememnt'. During the site visit it was determined that there is no ERM plan	SC P1 section 4.1 *Environmental risk management*	The Environmental Risk Management plan is under development but we have observed the efforts of the project owner towards it, and we have also seen that they have a decent Emergency Action Plan. Please see version 1.1 of the report we have updated the indicator explanation.	Ok	Closed
	x	Please clarify the situation with the fish ladder, and the legal aspect behind	SC P1 section 4.1 *Ichtyofauna*	When the Koyulhisar project activity was planned the regulation that forces thhydroelectric	ok	Closed

				power plants to have a fish ladder was not in place. However after the construction was completed the DSI auditing team, wanted the PO to construct one. This was the reason why the fish ladder was not constructed at the first place. This year they have constructed most of it but they were not able to complete its connection. This is therefore indicated as a new target.		
x		Please make the statement regarding the price of credits from the previous crediting period consistant, see section 5.2.3 & indicator '*Sale of credits*'	SC P1 section 4.1 *Sale of credits*	We do not want to disclose the price of the credits that were sold out, so that we can negotiate relatively higher prices this year. But we rephrased the statement to be more explicit please see version 1.1 of the SCS report.	Ok	Closed