

Alkumru Hydroelectric Power Plant, Turkey

VALIDATION REPORT SOCIALCARBON Standard - Point Zero -



Document Prepared by TÜV Rheinland Energie und Umwelt GmbH

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Prepared by	TÜV Rheinland Energie und Umwelt GmbH
Validator	Andrea Nüsse
Contact	Am Grauen Stein 33; 51105 Cologne; Germany Tel +49 221 806-4729; Fax +49 221 806-1349, carbon@tuv.com, www.tuv.com/carbon
Email	Andrea.Nuesse@de.tuv.com

Project Information

Indicators	Hydro indicators version 4.1 Modified for Alkumru HPP
Project Name	Alkumru Hydroelectric Power Plant (Alkumru HPP)
Year - Point of Project	2012 - Point Zero
Monitoring period (SOCIALCARBON)	10 March 2011 to 31 October 2012
Corresponding Monitoring Report (Carbon Accounting Standard)	10 March 2011 to 31 May 2013 (VCS Version 3.3)
Location	Siirt, Turkey

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1 Introduction

1.1 Scope and Criteria

This report represents the initial (Point Zero) SOCIALCARBON validation of the project Alkumru Hydroelectric Power Plant, Turkey. The Social Carbon validation was commissioned by the project owner Limak Hidroelektrik Santral Yatirimlari A.Ş and TÜV Rheinland Energie und Umwelt GmbH has been contracted as an independent validation/verification body to validate the project against the Social Carbon standard in order to demonstrate the social and environmental benefits of the project in relation to its surroundings.

SOCIALCARBON is a holistic assessment of the impact of a project on its surroundings and takes into consideration (voluntary) actions taken by the project owner to maximize positive side-effects and mitigate against adverse ones. The criteria assessed are categorized into six groups: social, human, natural, biodiversity, financial and carbon. The guidelines "SOCIALCARBON – Indicators for Hydroelectric Power Plants, v4.1" have been applied to evaluate the score of the index for each category. The auditing process is limited to the information described in or required by the indicator (as specified in the SOCIALCARBON standard) to avoid the scope of validation to become "virtually unlimited".

The project has been assessed against the SOCIALCARBON standard version 4.2 and the guidelines presented in the document "SOCIALCARBON - Introduction to criteria and procedures for certification". To ensure compliance with the SOCIALCARBON standard TÜV Rheinland Energie und Umwelt GmbH evaluated if:

- The report contains all information required by the template and guidance for elaborating SOCIALCARBON reports;
- The information disclosure in each indicator is relevant and true;
- The score is in accordance with the described scenario for the indicators published in the document "Indicators for the Hydroelectric Power Plants Version 4.1" with underlying Standard Indicators.

The report assesses the criteria against the conditions present during the period of 10th March 2011 and 31 October 2012.

1.2 Project Description

The Alkumru hydroelectric power plant (HPP) project is located in the Eastern Anatolia Geographical District of Turkey at the Botan River, one of the major tributaries of the Tigris.

A concrete weir dams the Botan River to a maximum water level of 647 m (above sea level). A 124m long penstock with bottom trifurcation channels the water past the three vertical Francis turbines to a tail water level of 541.8m. The power house (with geographic coordinates 37° 57' 25.24"N 42° 5' 30.08"E) is therefore located in close proximity to the reservoir which has a maximum area of 10.99 km².

Each one of the three existing Francis turbines has a capacity of 87.09 MWe, resulting in an overall capacity of 261.27 MWe and an expected annual electricity production of 875.84 GWh. A fourth, horizontal Francis turbine with a 14.25 MWe capacity is currently under construction and is expected to become operational beginning of 2014. By this year the total project capacity will reach 275.52 MWe and is estimated to produce 881.21 GWh per year.

The project has been developed by Limak Hidroelektrik Santral Yatirimlari Anonim Sirketi.

Environmental Law No. 2872 (Issued in 1983), Annex 2 of Environmental Impact Assessment (EIA) Regulation defines that a run-of-river hydro power plant with installed capacity more than 50MW is subject to complete full EIA. Thus, the Alkumru HPP has gone through the full EIA process and was granted the EIA affirmative certificate on 15/08/2008.

At the time of the on-site visit Alkumru HPP was completed and operational. It started supplying electricity to the Turkish national grid on 10 March 2011.

2 Methodology

The methodology for the validation of the SCR included the collection of all relevant information to confirm statements made in the SCR through a combination of a document review, an on-site assessment and interviews with the relevant stakeholders.

The SC methodology requires validating the information related to socioeconomic aspects based on the matrix evaluation grid of the indicator documentation. Therefore, the collated information was used to assess the project parameters against the indicator definitions and checked against the index scores assigned by the carbon consultant. The validation team's findings either confirmed the initial score or illustrated any inconsistencies in which case the score was revised. The best possible match of the actual on-site situation with the least deviation from the reference scenario shall represent the awarded score. Where a direct match could not be identified, information was not available or insufficient or the indicator was not applicable this is mentioned explicitly.

Upon receipt of the draft SCR a list of CAR/CL was forwarded to the responsible party derived from the desk review of the draft SCR and available supplementary information. Additionally the (interview)-records drafted during the on-site assessment were considered during the validation. Where documentation was still insufficient the document request was included in the CAR/CL and eventually by providing all requested documentation, TUV Rheinland Energie und Umwelt GmbH was able to validate the assertions made in the draft SCR.

2.1 Document Review

Table 1: List of reviewed documents

No.	Document	Date submitted
1	SOCIALCARBON Standard, v4.2	
2	SOCIALCARBON – Indicators for Hydroelectric Power Plants, v4.1	
3	SOCIALCARBON – Introduction to criteria and procedures for certification	
4	SOCIALCARBON – Additional information for auditors of SOCIALCARBON Reports, v2.2	
5	UNFCCC ACM0002 “Consolidated methodology for grid-connected electricity generation from renewable sources”, v.13, EB67	
6	UNFCCC “Tool to calculate the emission factor for an electricity system”. V.03.0.0, EB 70 Annex 22	
7	SOCIALCARBON Report (SCR) for Alkumru HPP v1.0	07/11/2012
8	Alkumru SocialCarbon Data v1.0	01/11/2013
9	VCS Project Description for Alkumru HPP v2.1 (final version)	14/12/2012
10	VCS Validation Report for Alkumru HPP v1 (final version)	14/12/2012
11	SOCIALCARBON – Indicators adapted for Alkumru HPP	06/11/2011
12	ISO 14001:2004 certification (29 Nov 2010)	01/11/2012
13	ISO 9001:2008 certification (30 Nov 2010)	01/11/2012
14	BS OHSAS 18001:2007 certification (16 Dec 2010)	01/11/2012
15	Feasibility report for Alkumru HPP (2012)	25/03/2013
16	Final EIA Report for Alkumru HPP (2008) – English summary	25/03/2013
17	Company procedure: Staff benefits for discounted holidays	25/03/2013
18	SOCIALCARBON Report (SCR) for Alkumru HPP v2.0	23/04/2013
19	SOCIALCARBON Report (SCR) for Alkumru HPP v2.02	06/06/2013
20	SOCIALCARBON Report (SCR) for Alkumru HPP v3	12/06/2013

2.2 On-site Inspection and Interviews

An on-site inspection was conducted with the purpose to interview relevant stakeholders, review documents and assess the situation in order to validate the statements determining the indicator scores. The site visit took place from 12/11/2012 – 16/11/2012 and included visits to offices of relevant governmental institutions as well as the project site itself.

3 Validation Result

3.1 Evaluation of Consistency and Completeness of Indicators

As a first step of the validation of the Social Carbon Report (SCR) the completeness and consistency of the initial SCR with the standard indicators of the applicable document “Approved Indicators for Hydroelectric Power Plants Version 4.1, June 2011” has been evaluated (see table 2). If indicators have been excluded or are inconsistent with the above mentioned document, the reason has to be clearly stated in the SCR and the approval from Ecologica Institute provided.

Table 2: Comparison of the “Approved Indicators for Hydroelectric Power Plants (Version 4.1)” with the indicators included in the submitted SCR

Indicator	Included in the SCR [Yes / No]	If not, state justification from project proponent
Social Resource: The working networks, the social duties, social relations, relationships of trust, affiliations, and associations.		
Population Displacement	YES	-
Communication with Stakeholders	YES	-
Acceptance	YES	-
Social Demands	YES	-
Social Programs	YES	-
Social Benefits	YES	-
Human Resource: The skills, knowledge, capacities for work and good health that people have. Taken together, these become fundamental for the successful pursuit of different strategies.		
Capacity Building Initiatives	YES	-
Health & Safety	YES	-
Benefits	YES	-
Transfer of New Technology	NO	The Project is using three identical vertical axis and one smaller horizontal axis Francis type turbines, as shown on page 1-7 to 1-8 of the third party feasibility report. 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. Therefore this indicator is not applicable.
Involvement of Employees in the Project	YES	-
Financial Resource: The basic capital in the form of cash, credit/debt and other economic goods which are available or potential.		
Economic Performance	YES	-

Indicator	Included in the SCR [Yes / No]	If not, state justification from project proponent
Market	YES	-
Sale of Credits	YES	-
Natural Resource: The stock of natural resources (soil, water, air, etc.) and environmental services (soil protection, maintenance of hydrological cycles, pollution sinks, pest control, pollination, among others), from which resources for livelihoods are derived.		
Sustainability Principles	YES	-
Environmental Management	YES	-
Environmental Legislation	YES	-
Legal Procedures	YES	-
Environmental Impacts	YES	-
Environmental Risk Management	YES	-
Reservoir and Marginal Areas Management	YES	
Erosion, landslides, silting and floods	YES	-
Water Resources	YES	-
Biodiversity Resource: the combination of species, ecosystems and genes which form the biological diversity. Relevant aspects of this component are: the integrity of natural communities, the way people use and interact with biodiversity, the degree of conservation, pressures and threats imposed on native species and the existence of high priority areas for conservation		
APP and Legal Reserve	NO	There are no APP and Legal Reserve areas within the project area or around it as documented on page 84 in the 3 rd party Project Presentation Document presented to the Ministry of Environment to obtain the EIA Affirmative Certification that was granted to the project.
Recovery of Degraded Areas	YES	-
Biodiversity Conservation	YES	-
Ichthyofauna	YES	-
Carbon Resource: The type of carbon project developed, encompassing the methodologies utilized and project performance.		
Additionality	YES	-
Emissions Reductions Calculations & Monitoring	YES	-
Validation & Verification	YES	-
Project Performance	YES	-

3.2 Assessment of Indicators

3.2.1 Social Resource

3.2.1.1 Population displacement

Statement in SCR

The project activities reservoir area flooded some privately owned land, three public buildings (two security buildings and one school) and 13 houses. The project owner spent more than 10 fold of the number they have initially estimated for the expropriation process. This is indicating that the property owners were fairly compensated. In addition to this the project owner held two meetings at the project site to inform and manage the relocation and expropriation process (Dates of the meetings were: 16.12.2010 and 12.05.2011). They have re-built the public buildings replacing them with better ones. The sum of the area that has undergone expropriation was 12.504.377,70 m² that makes up the Forest, treasury and private ownership lands. The privately owned land was made up of 714 parcels. All of the property owners have been paid their monies via the bank accounts opened to their names. During the expropriation meetings 59 of the owners agreed to the negotiated land prices and for 681 of the parcels the project owner called the court to determine the price. So far half of these cases have been resolved. Also the local authorities have confirmed that the expropriation process was conducted with a participatory approach, with not only organized meetings but also with one to one contacts with right owners.

Validation Opinion to the statement of TÜV Rheinland

The interviews with the village heads confirmed that a small number of inhabitants had their land expropriated and have been compensated. Most of the affected persons were happy with the compensation; a small minority was not satisfied initially but ultimately decided to accept the compensation. As per Turkish regulations the expropriation process involved government agencies who facilitated the procedure.

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 5	Participatory Relocation Program, including negotiations with different actors (owners, public agencies, and civil society organizations).	No targets assigned.	Based on the information received the chosen index is considered as correct.

3.2.1.2 Communication with Stakeholders

Statement in SCR

The project owner is open to dialogue with stakeholders. They communicate regularly with the village heads, and welcome the visitors. Access to the project site is controlled by a gate controlled by security patrol that checks the visitors, since the project is located at a security sensitive area. The operations manager's mobile phone is made available to all the stakeholders including governorship, heads of the villages and the military station. The public can acquire information about the project whenever they want. This type of communication is an informal, unpremeditated communication,

which is based on goodwill. This is a kind of forum that best suits to the cultural structure of the project vicinity.

Validation Opinion to the statement of TÜV Rheinland

Interviews with the village heads, Forest Authority (FA), DSI and SPA confirmed that the frequent, if informal, communication has been taking place throughout the project planning and operations, and continues to take place. The project owner is very open to dialogue, welcomes visitors and reacts swiftly to requests. As this communication takes place ad hoc on a 'needs basis' and depends on personal connections, it is not considered a permanent platform with established procedures.

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 4	Establishment of a permanent forum in order to maintain communication with local stakeholders.	The project owner will continue communicating with stakeholders and will try to improve the mechanism to collect the opinions of different stakeholders about the project, and will establish a standard operation procedure to ensure the permanence of the established forum on a regular basis.	There is an open dialogue between the PO and all stakeholders but there is not an establish forum beyond ad hoc telephonic communication.
Propose Index:3	During the planning and operation stages, the entrepreneur has communication with the stakeholders.		Based on the information received the chosen index is considered as correct.

3.2.1.3 Acceptance

Statement in SCR

Although there is a reaction against all the hydro power plants in some parts of Turkey, there are no project-specific complaints about the project. In general people are happy with the project as they think the project has improved the scenery, provided jobs, lead to the improvement of some of the infrastructure at some locations and contributed to the development of the regional economy & welfare level of the peoples in the subject area. The government officials and the villagers from the nearest settlement mentioned that the community was happy with the project and was supporting the project.

Validation Opinion to the statement of TÜV Rheinland

Interviews with the three village heads, villagers, workers and authorities confirmed that the project is perceived positively and as beneficial for the villagers.

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 6	Strong support from local stakeholders and insignificant opposition.	No targets assigned.	Based on the information received the chosen index is considered as correct.

3.2.1.4 Social Demands

Statement in SCR

Limak is addressing Social demands that originate from different stakeholders such as the military station or the nearby villages. Limak helped villagers for the maintenance of the roads of the surrounding villages and helped its stakeholders with their construction material needs. Limak also built a public school and a guest house for the military staff. The needs are communicated to the project managers at the project activity site and are evaluated first by them. If they are simple requests and within their limited miscellaneous items budget, and if they decide it will benefit the community they immediately react and address the needs. If the scale of the request is relatively larger they communicate the request to the central management and get an approval prior to addressing the demand.

Validation Opinion to the statement of TÜV Rheinland

During the on-site assessment the validation team learnt, that the village heads are welcomed at the plant and that none of their requests (earth movers, building material, etc.) have been denied.

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 4	The entrepreneur takes actions that surpass compulsory activities.	The entrepreneur is developing a policy that will cover the rules and other criteria to address voluntary social actions. In the coming years the project owner is going to prepare an internal document that will outline the standard operating procedures to respond the social demands.	Based on the information received the chosen index is considered as correct.

3.2.1.5 Social Programs

Statement in SCR

The project management has very good relations with the local inhabitants, and the entrepreneur is highly committed to such issues; yet, such social programs are at the planning stage since the project itself is at the very early stages of operation.

Validation Opinion to the statement of TÜV Rheinland

During the on-site visit the project manager stated that some ideas are on the planning stages and they are taking close advise from the villages heads to accomplish meaningful results

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 2	Actions are in planning	The Entrepreneur is	Based on the

	stage with high uncertainty, that benefits can be delivered.	going to be identifying such activities together with the local stakeholders. They will assess the situation taking into account socio economical characteristics of the area.	information received the chosen index is considered as correct.
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3.2.1.6 Social Benefits

Statement in SCR

The project owner constructed one health cabin (one action that serves majority), 18 km of highway (second action that serves many) to connect some of the villages to the town, helped those people that need to re-build their homes by providing them with construction material. Helped to improve the living conditions of a widow that used to live in a cave like dwelling, by providing her and her family a proper housing. In addition to that the project is also providing scholarships to the students who are keen to continue their education but have difficulty finding finance.

Validation Opinion to the statement of TÜV Rheinland

Interviews with representatives from DSI and SPA confirm the benefits that the population receives by the health cabin and the highway improvement. They also commented and increase in the regional security due to the presence of the project security staff and the construction of the military quarters.

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 5	Project delivers in two major areas to a large number of local stakeholders.	The project owner will identify the social needs together with the stakeholders and local authorities and will determine actions that will benefit more people.	Based on the information received the chosen index is considered as correct.

3.2.2 Human Resource

3.2.2.1 Capacity Building Initiatives

Statement in SCR

The project owner is recruiting most of the employees from the local area or close proximity of the project site. The capacity of the employee is sufficient and Limak is supporting its employees by providing frequent and regular trainings that would improve the quality of their staff.

Validation Opinion to the statement of TÜV Rheinland

The PO is interested in recruiting local people to ensure long-term employment. All employees recruited at Alkumru HPP are required to prove that they have undergone the necessary education (mechanical/electrical technicians). The PO presented certificates from a third party proving the realization of seminars.

Interviews with employees at the plant confirmed that they undergo regular trainings according to their needs, and with their new skill they can experience professional development within the project.

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 6	Operations and Maintenance: Employees of the project have experience and have participated in more than one training or course in intervals of one year or less..	The project owner will maintain the situation	Based on the information received the chosen index is considered as correct.

3.2.2.2 Health and Safety

Statement in SCR

There were no accidents in the last one-year of the project activity and the project owner has a system supported by their consultant company. The consultants provide regular trainings to the employee of the Alkumru HEPP. And they are certified to the OSHA standard, by a third party.

Validation Opinion to the statement of TÜV Rheinland

During the visit the PO presented the according certificates of a third party company proving the implementation of health and safety programs. Employees confirm this information and the conduction of regular HSE seminars.

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 6	Existence of an Occupational Health and Safety Management System certified by a third	The project owner will keep implementing the OSHA Management System and renew its certification as deemed	Based on the information received the chosen index is considered as correct.

	party.	necessary.	
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3.2.2.3 Benefits

Statement in SCR

In addition to their salary the employees are provided with trainings that improve their capacity and the project owner provides its employees with free housing, free lunch & dinner, free shuttle service and reduced priced holiday opportunity at Limak holiday resorts (with a significant 50% price reduction). This indicates that all the employees benefit in three of the areas. In addition to that, project coordinator and also the president of the company regularly visit the site and question the satisfaction of the employees and help to solve any problems they may have. It is also observed in our site visit that the employees are highly satisfied in their jobs.

Validation Opinion to the statement of TÜV Rheinland

During the onsite visit it was confirmed that all employees receive a free transfer from their homes to work and that lunch is delivered to the workers. During interviews with workers and PO it was proved that the employees have a preferential access and pricing to leisure facilities.

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 5	Benefits are offered to all employees involved in the project in to three of the areas.	The project owner will establish a workers satisfaction assessment questionnaire to be implemented once in a year.	Based on the information received the chosen index is considered as correct.

3.2.2.4 Involvement of the Employees in the Carbon Project

Statement in SCR

The management is aware of the carbon project. In addition to that during the preparation of the VCS PD and Social Carbon reports, when a document or data was needed the central / management in Ankara explained the process to all the engineers at the project site.

Validation Opinion to the statement of TÜV Rheinland

The on-site visit confirmed that the plant manager is very much involved in the carbon project, but that the other employees are not aware of it.

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 2	Only management and employees directly involved in the carbon project are aware.	The project management will include an in-house training addressing climate change and the contribution of renewable energy	Based on the information received the chosen index is considered as correct.

		projects to tackle the climate change issue. This will ensure the involvement of employees to the carbon project	
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3.2.3 Financial Resource

3.2.3.1 Economic Performance

Statement in SCR

The project owner had fiscal targets for the project activity. Checking the production and electricity sales predictions against those targets they claim that the targets are achieved by a really high rate. Therefore we interpreted the situation that the project performance was highly adequate.

Validation Opinion to the statement of TÜV Rheinland

The project owner stated that the Alkumru HPP project has reached an electricity production realization rate of 94%. The anticipated goals have therefore almost been accomplished.

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Revised Index: 4	Adequate Performance. Goals and expectations established with shareholders have been accomplished.	To be able to improve the efficiency of the project maximum care will be spent for the maintenance of the components of the project.	Based on the information received the chosen index is considered as correct.

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 Verified Carbon Standard and can only reach to the voluntary markets.

Validation Opinion to the statement of TÜV Rheinland

The validation team can confirm that the project has been developed and verified under the VCS standard. It is therefore eligible for the voluntary markets.

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 3	Project activities are eligible for the voluntary market.	The project owner is hoping to have an opportunity to bring the project into compliance	Based on the information received the chosen index is considered as correct.

		market. However, this depends mainly on the change of the status of Turkey.	
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3.2.3.3 Sale of Credits

Statement in SCR

The project owner started to probe potential buyers by the help of their carbon finance consultant.

Validation Opinion to the statement of TÜV Rheinland

Ekobil confirmed that they are acting as an agent for the PO. Negotiations have started and marketing documents under preparation.

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 2	Carbon credits are being negotiated, with little uncertainty regarding its commercialization.	The project owner is targeting to differentiate the project activity from the similar projects in the market and therefore to increase the value of the VCUs.	Based on the information received the chosen index is considered as correct.

3.2.4 Natural Resource

3.2.4.1 Sustainability Principle

Statement in SCR

Limak has its quality, environmental and safety management systems and in this context, they carry out periodically the necessary endeavours to maintain their clear set sustainability targets. Sustainability is a principle emphasised in the company policy and procedures, including a written action plan. Natural resource consumption is monitored on a regular basis and measures are being taken to minimize consumption. In addition, to that during the construction phases of their projects they always implement the environmental and social impact assessments that need to be done in order to ensure sustainability measures are defined and implemented. Examples from the good track record of sustainable actions of Limak is Provided in Attachment 1 and the Alkumru HEPP specific sustainability policy and the general goals set forth for Alkumru HEPP Project are provided as Attachment 2.

Validation Opinion to the statement of TÜV Rheinland

Limak has a general grasp of the concept of sustainability. A set of principles and goals have been developed for Alkumru HEPP.

Index setting by	Wording by definition	Perspective	Validation Opinion
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project owner			
Initial Index: 5	In addition to the items in Index 4, the values, strategy or principles of the project owner are effectively incorporated by some collaborators.	The project owner will make sure that their collaborators also adapt and implement their sustainability principles effectively.	Limak incorporates general sustainability principles in all of its projects but not in a specific way in the project.
Proposed Index: 4	Incorporation of sustainability in the values, strategy and principles of the project owner.		The PO demonstrates the comprehension of sustainability principles but the application remains limited by the project's collaborators. Index is downgraded to 4

3.2.4.2 Environmental Management

Statement in SCR

The project is implementing an environmental management system and has a third party certification.

Validation Opinion to the statement of TÜV Rheinland

PO has provided the VVB with a valid ISO 14001 certificate by TÜV Rheinland

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 6	Certified environmental management system.	The project owner will ensure the perfection of the Environmental Management system, and renew its certification periodically.	Based on the information received the chosen index is considered as correct.

3.2.4.3 Environmental Legislation

Statement in SCR

Environmental permits are not only followed up the by the responsible staff (Mr. Kasım Eren & Ms. Hatice Çınar) for the collection of the necessary work within the company but also are carried out through a consulting firm. All relevant changes to the current legislation and compliance to the environmental regulations are followed up by the management at the central office, and by the help of the intranet system, such changes are shared with the relevant project managers. This way all environmental permits are ensured to be complete and on time. The project's compliance with all the environmental rules and regulations has also been testified by the relevant government officials that were interviewed during the site visit.

Validation Opinion to the statement of TÜV Rheinland

During the on-site visit the validation team learned that the environmental requirements are handled from the corporate headquarters. During interviews with DSI, Environmental Agency and Agriculture Ministry it was clear that the project complies fully with the appropriate environmental legislation.

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 6	In addition to the items in Index 5, the entrepreneur has systematic control of the licensing process.	The project owner will maintain the present situation.	Based on the information received the chosen index is considered as correct.

3.2.4.4 Legal Procedures
Statement in SCR

There are no complaints and therefore no court cases open related to the negative effects of the project to human and environmental health.

Validation Opinion to the statement of TÜV Rheinland

DSI, SPA, Governor's office stated that the project has no legal matters pending

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 6	The project did not suffer from public civil or judicial action or receive any warnings due to potential risk or effective damage to human health or the environment.	No targets assigned.	Based on the information received the chosen index is considered as correct.

3.2.4.5 Environmental Impacts
Statement in SCR

The project has submitted an EIA report to the MoEUP. The file is studied and the project received an EIA affirmative certificate. The report is suggesting very minimal damage to the environment; in addition to that there are remedial actions to some of the damage made to clay quarries. The site where the material for the dam body is taken was remedied and the top soil is placed and the area is planted to be used by the local community.

Validation Opinion to the statement of TÜV Rheinland

Due to the relatively large reservoir of the project environmental impacts are inevitable as a large area of land is now covered by water. However, during on-site visit remediation measures were observed and information presented by the PO corresponds with the stated.

Index setting by	Wording by definition	Perspective	Validation Opinion
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project owner			
Initial index: 6	Studies show minimal environmental impact. The project implements new technologies or innovative processes to control environmental impacts.	No targets assigned.	Despite the mitigation actions of the project owner, the project as a considerable impact on the natural environment.
Proposed index: 4	Studies show high environmental impact, yet compensation and mitigation measures for such impacts are satisfactory (i.e. Efficient execution of environmental programs).		Based on the information received the chosen index is considered as correct.

3.2.4.6 Environmental Risk Management

Statement in SCR

As general a company policy, environmental risk assessments are performed before the commencement of construction works. In addition to this, a risk assessment for the operation stage of the Alkumru HEPP project was commissioned. Necessary control measures are developed to manage the identified risks for the project activities, and these risk management activities are carried out by the project site employees. These activities are monitored and controlled by the central office authorized personnel. Hence, there were no environmental emergency situations during the specified assessment period. The Emergency action plan is also provided to the attention of the Ministry of Environment and Urban Planning, as part of the EIA report. On top of that the project has ISO 14001, OSHAS 18001 and ISO 9001 certifications that also partially matches the evaluated period.

Validation Opinion to the statement of TÜV Rheinland

During on-site visit it was observed that contingency plans are known by the personal, there are teams with designated task in case of emergency and the certificates are also visible to the personal.

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 6	Periodic internal and external audits of environmental risks and technical reports regarding environmental management are conducted.	No target assigned.	Based on the information received the chosen index is considered as correct.

3.2.4.7 Reservoir and marginal areas management

Statement in SCR

There are no invasions around the marginal areas, and the project owner surveys the area for safety and security purposes. In addition to that the sacred land piece is at the reservoir banks and Limak contributed significantly for the planning and management of that area.

Validation Opinion to the statement of TÜV Rheinland

There is no invasion on the project area. The project area is secured and invasion on the marginal areas is not a problem. The whole project area is delimited by fences avoiding invasion.

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 5	Satisfactory plan, but it only contemplates monitoring, safety and control activities.	The project owner will be in close co-operation with DSI and Forest authorities to improve fishery potential of the reservoir.	Based on the information received the chosen index is considered as correct.

3.2.4.8 Erosion, landslides, silting and floods

Statement in SCR

As a general company policy, Limak implements, rehabilitation and reclamation procedures for the degraded areas along the construction phase and implements the necessary erosion controls. Especially areas where large excavations are made are reclaimed and the slopes with mass flow risks are rip-rapped or steep slopes are broken to reduce mass flow risks. Such measures and the erosion control actions are made after the acquisition of the project. Such erosion control measures that also involve slope plantation are carried out in co-ordination with the related institutions such as forest authority and DSI.

Validation Opinion to the statement of TÜV Rheinland

The Forest Authority (FA) confirmed that they check for erosion as part of their annual site visit and that no problems have been identified at Alkumru. Slopes have been converted to terraces and the FA has provided trees to counteract erosion. These trees also produce goods that the villagers exploit.

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 6	Program is supported by external Stakeholders (i.e. regulators, ngos, etc.).	The project owner will coordinate with the local stakeholders and DSI for implementing the erosion control programme.	Based on the information received the chosen index is considered as correct.

3.2.4.9 Water Resources

Statement in SCR

The general company policy involves protection of water quality. Therefore, untreated wastewater discharge is not at all allowed. To avoid discharge of untreated wastewater, depending on the size of the operation either sanitary septic tanks are constructed for temporary storage and the effluent is then transferred to the nearest wastewater treatment site or on site water treatment facilities are established. During Alkumru construction period, a package wastewater treatment plant was established for the sanitary wastewater generated from construction activities. Additionally, settlement ponds were constructed for purpose of treatment for wastewater generated from batching plant. Limak also makes sure that the discharges are to be made in compliance with the nationally allowed limits and monitoring checks are carried out by performing analysis, with the competent laboratories and in collaboration with the Provincial Directorates of Environment. Additionally, precautions are taken to avoid contamination of the reservoirs or other water resources from other construction related rubble and wastes. Construction of protective barriers, waste management practices and activities are carried out for the protection of water quality. These preventive actions have also been outlined in the Environmental Impact Assessment Report, and the project owner is not only bound by regulations to protect water resources but also have undertakings stating that they will take the necessary measures and precautions to protect water quality. In addition to this the project owner is bound by the undertakings of the water usage agreement and needs to release the promised amount of lifeline water at all times.

Validation Opinion to the statement of TÜV Rheinland

During on site visit the preventive measures were corroborated and the EA (Environmental Agency) reported that the project complies with governmental standards. The project owner takes great care to mitigate against impacts of its power plant. Therefore, the operations either enhance or cause minimal deterioration to the reservoir or the downstream water quality.

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Initial index: 5	Program includes preventive actions.	The project owner will maintain the existing situation and will keep existing water quality in coordination with the relevant public bodies.	There are no preventive actions beyond their own operations to include the local communities.
Proposed index: 4	Operations either enhance or cause minimal deterioration to reservoir or downstream water quality.		Based on the information received the chosen index is considered as correct.

3.2.5 Biodiversity Resource

3.2.5.1 Recovery of Degraded Areas

Statement in SCR

The project area is not densely vegetated as the harsh Eastern Anatolia climate is not promoting growth of dense forests due to extremely warm and dry summers and extremely cold winters. Therefore there are not much degraded areas. But still the project owner is improving the surroundings of the project area by tree plantations, but these activities are limited within the close proximity of the project.

Validation Opinion to the statement of TÜV Rheinland

In the interviews with DSI and village heads during the on-site visit it was confirmed the presence of extensive plantations on the project site (50,000 trees). These trees were planted with the help of the FA and provided by the same.

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 4	Voluntary recovery of degraded areas but only in areas of project ownership.	The project owner is planning to implement a tree planting campaign together with the local inhabitants of the area, thus improving areas that are outside the project borders in coordination with the relevant public bodies.	Based on the information received the chosen index is considered as correct.

3.2.5.2 Biodiversity Conservation

Statement in SCR

The project owner is safeguarding the project boundaries and watching for illegal hunters and fishers. This way they are supporting the local wildlife. In addition to that the HPP management is communicating with local inhabitants and organizing tree planting campaigns and promoting biodiversity conservation in the area. In their extensive tree planting campaigns they choose trees that will also support local wildlife.

Validation Opinion to the statement of TÜV Rheinland

The FA stated that they conduct checks of the state of the forests (e.g. pests) and obvious signs of wildlife as part of their annual site visit. According to the plant manager staff pays attention to poachers and illegal fishers and expulse them from the area.

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 4	Actions to support research on local biodiversity	The project owner is seeking reasonable ways to support local	The PO's actions are limited to legal obligations; measures

		wildlife in coordination with the forestry department and DSI.	with positive externalities comply with other aspects of the project development and operation but do not directly support biodiversity conservation or research.
Proposed Index: 3	Limited to legal obligation.		Based on the information received the chosen index is considered as correct.

3.2.5.3 Ichthyofauna

Statement in SCR

The project is supporting the fish life by preventing illegal fishing in the project area. They have an active fish ladder at the body of the weir. They have observed and pictured fish using the fish ladder. In addition to this they have co-operated the restocking activities of DSI and accordingly DSI has delivered 100,000 young fish to the reservoir lake.

Validation Opinion to the statement of TÜV Rheinland

During the onsite visit, the VVB could confirm that the PO has built a fish ladder and photographic evidence was presented to show that the fish are using it. The PO collaborated with DSI to release 100,000 fish to the reservoir to restock the population. Although no monitoring activities regarding the Ichthyofauna of the reservoir are being carried out by the PO, the VVB deems the assigned score of 4 acceptable due to the one-time restocking activity in this monitoring period.

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 4	Program for corrective actions (restocking, transposition, aquaculture, for example).	The project owner is going to cooperate with local authorities and/or local universities to monitor and/or research the state of the fish population in the river.	Based on the information received the chosen index is considered as correct.

3.2.6 Carbon Resource

3.2.6.1 Additionality

Statement in SCR

The project is validated to the VCS version 3.3 standard and implementing CDM Approved tools to demonstrate additionality the project is under VCS version 3.3 Verification.

Validation Opinion to the statement of TÜV Rheinland

The validation team can confirm that the project has been validated according to the VCS version 3.3 standard and is therefore considered additional. Verification of the project is currently underway.

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 6	It is considered additional according to criteria stated in a monitoring methodology approved by the CDM Executive Board.	The project is targeting to comply with the VCS rules and will be monitored and verified to be in compliance with CDM approved emission reduction methodology.	Based on the information received the chosen index is considered as correct.

3.2.6.2 Emissions Reductions Calculations

Statement in SCR

The projects emission reductions are calculated and monitored based on CDM approved Methodology "ACM0002 version 13: Grid-connected electricity generation from renewable sources"

Validation Opinion to the statement of TÜV Rheinland

The validation team can confirm that the emission reductions calculations have been made in accordance with the CDM approved ACM0002 v.13 methodology.

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 6	The project has a methodology to calculate emissions reductions and a monitoring plan based on a methodology approved by the CDM Executive Board.	The project owner is targeting to keep complying with the VCS and CDM rules.	Based on the information received the chosen index is considered as correct.

3.2.6.3 Validation and Verification

Statement in SCR

The project is validated by a UNFCCC accredited DOE, and the same UNFCCC accredited DOE is

also assigned for the verification of the project.

Validation Opinion to the statement of TÜV Rheinland

The validation is being carried out by TÜV Rheinland Energie und Umwelt GmbH (under the UNFCCC accreditation of TÜV Rheinland China Ltd. as DOE).

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 6	Validation and Verification are conducted by a Designated Operational Entity according to UNFCCC specifications.	The project owner is targeting to keep complying with the VCS and CDM rules.	Based on the information received the chosen index is considered as correct.

3.2.6.4 Project Performance

Statement in SCR

Comparing the produced VCUs with the values indicated in the VCS PD it reveals that the project performance was 99% and in year 2012 it performed 86.2%. The average performance revealed as 92.7%.

Validation Opinion to the statement of TÜV Rheinland

The validation team can confirm that the actual emission reductions meet the stated emission reductions.

Index setting by project owner	Wording by definition	Perspective	Validation Opinion
Index: 5	Good: 76% to 95% of carbon credits predicted for the period were effectively generated.	No target assigned.	Based on the information received the chosen index is considered as correct.

4 Validation Statement

Limak Hidroelektrik Santral Yatirimlari A.Ş

Hafta Sokak No:9 GOP

06700 Ankara

Turkey

12 June 2013

RE: Social Carbon Validation of Alkumru Hydroelectric Power Plant, Turkey

Limak Hidroelektrik Santral Yatirimlari A.Ş with registered office at Hafta Sokak No:9 GOP 06700 Ankara, Turkey, has engaged TÜV Rheinland Energie und Umwelt GmbH to review and validate the SCR and all assertions related to the GHG project under SOCIALCARBON Standard respectively. The assertions made in the SCR Version 3, submitted 12 June 2013, indicate a Social Carbon performance as follows:

Resource	Average Score	General Performance
Social	4.17	Satisfactory
Human	4.75	Sustainable
Financial	3.00	Satisfactory
Natural	5.22	Sustainable
Biodiversity	3.67	Satisfactory
Carbon	5.75	Sustainable
Overall Assessment	4.43	Sustainable

We have conducted the validation of the SOCIALCARBON assertion in accordance with the requirements of the SOCIALCARBON program requirements. The project information validated 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 validation report "Social Carbon Validation of Alkumru HPP – Point Zero" as of 12/06/2013.

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, 12 June 2013



Andrea Nüsse

5 Annex: List of Corrective Action Requests (CAR) and Clarification (CL)

CAR	CL	List of Requests for Corrective Action (CAR) and Clarification (CL)			
		Observation (CAR/CL)	Reference	Summary of project owner response	Validation team conclusion
1		There is not an establish communication forum between the PO and stakeholders. (Communication with Stakeholders)	Section 3.2., p9	The project owner has provided the cell phone numbers of all the staff that can help and answer questions that come from local stakeholders, including villagers, and government officials, or military forces that protect the area. This is the best practice that works in the area. The definition of established forum in the case of this project is the unpremeditated communications and dialog established based on goodwill. Therefore we insist for the existence of such a forum.	Index will be downgraded to 3 given that a forum is not established even if constant communication takes place.
2		Provide a clear proof of sustainable principles incorporated into the project not just excerpts from company communications with the word "sustainable" (Sustainable Principles)	Section 3.2, p16	The project owner's mother company has sustainability mentioned several times in their annual reports, indicating that they are aware of the concept and are willing to bring it from top to bottom. Besides some of their core business such as tourism have already been awarded with a "sustainable tourism" award. (see latest annual report at the following link http://www.limakenerji.com.tr/docs/Limak%20Holding%20Faaliyet%20Raporu%20-%202010%20-%20ENG.pdf). Also on the mother company's web site they have declared to follow sustainability as a strategy: http://www.limak.com.tr/sustainability/limak-sustainability-strategy	The PO demonstrates the comprehension of sustainability principles but the application remains limited by the project's collaborators. Index is downgraded to 4
	1	Please provide TÜV certificate (Environmental Management)	Section 3.2, p17	Please find attached the OSHAS 18001, ISO 14001 and ISO 9001 certifications attached.	OK CL closed

CAR	CL	List of Requests for Corrective Action (CAR) and Clarification (CL)			
		Observation (CAR/CL)	Reference	Summary of project owner response	Validation team conclusion
	2	Please name the prevention measures that go beyond legal obligation (Water Resources)	Section 3.2, p23	The preventive measures that protect the water quality and the quantity are outlined in the EIA document, and the water rights usage agreement. The project owner is bound by these rules and undertakings and they are implementing the solid, liquid, and hazardous waste management procedures meticulously. As it is stated in the guidelines the EIA report, the list of regulations and the water usage agreement are the „ <i>Regulatory requirements; agreements with stakeholders.</i> ” That supports this situation.	OK CL closed
3		PO does not support local biodiversity research, actions are limited to compulsory obligations. (Biodiversity Conservation)	Section 3.2, p24	The compulsory obligations are stated in the EIA report. The project owner conducted a baseline study to check whether there are endangered flora or fauna elements or critical habitats that needs to be protected. The EIA surveys indicated that the project has no or limited impact during the construction phase but has no significant impact over the biodiversity. Their regular undertaking was to reclaim the degraded areas such as quarries, and they have done that as was explained in the site visit. On top of that the project owner is conducting an intensive tree plantation campaign whereby they are supporting wild birds and the reservoir and the tail water area is creating a new habitat for the water birds such as egrets, herons, and especially for waterfowl during the migration season. The protection of the area to ban illegal hunting also helps the migratory birds that are depressed by the hunters. These are deemed as actions beyond obligations. On the other hand it is very difficult for the project owner to find and support researchers for biodiversity research, as the area is relatively remote. Yet to be conservative the score is lowered to 3 and the target is set „as to look for ways of cooperating and supporting local wildlife research.“	The PO limits lo legal obligations, measures with positive externalities comply with other aspects of the project development and operation but are not carried to directly benefit biodiversity conservation or proper research, index is adjusted to 3.