

# VALIDATION REPORT POINT 0 BOYABAT HYDROELECTRIC POWER PLANT PROJECT



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## Summary:

The project was verified according to the Social Carbon Standard Indicators adapted for Boyabat Hydropower Plant Project, Turkey. This report reflects Point 0 Validation, complementary to the initial Validation against VCS v.3. Two indicators were adjusted during the course of Validation.

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## 1 INTRODUCTION

### 1.1 Scope and Criteria

The Validation against the Social Carbon standard is applied to the scope of the project as identified in the project SCS project-description. In general this is the hydropower plant project activity of the project owner “Boyabat Elektrik” (Boyabat Elektrik Üretim Ve Ticaret A.Ş.) with the main sites being a large dam with radial gate structures and a submerged intake structure incorporated into the dam body. The 3 turbines and generators are also located inside the dam body whereas the water outlet is partially or fully submerged, depending on the tail-water level. All areas and fields which are operated under the responsibility of the project owner or which are directly affected by him are subject to the assessment. The details to which extent the project owner has effects on entities in proximity to the geographical or operational scope of the project are also defined within the indicator assessment description of the SCS.

Validation criteria are extracted or included in the methodological approach that is derived from the Social Carbon Methodology. This includes mainly the assessment of the current project implementation with regard to the applied approved Social Carbon indicators. The indicator scoring published in the document “Indicators for the Hydroelectric Power Plants Version 4.1” with underlying Standard Indicators adapted for Boyabat Hydropower Plant Project, Turkey will be used (This indicator set is being used as the project is in the same region and the applicability of the indicators has been confirmed) to verify the awarded score based on the findings that were made during the on-site assessment and the review of related documents. The removal of two indicators, namely “APP and Legal Reservation” and “Transfer of New Technology” reflect those adaptations of the indicators. This is reasonable as the area around the project is not subject to any restrictions as was discussed during the on-site visit and dialogue with Mr Halil Ibrahim Yavuz of the Samsun DSI office. Transfer of new technology is irrelevant for this project since also other projects in the vicinity facilitate similar technology. It was agreed upon to use the approved indicators for the Niksar HPP as they exactly apply this set of indicators with the mentioned changes.

### 1.2 Summary Description of the Project

The proposed project activity, Boyabat Hydroelectric Power Plant (HPP) is a dam type HPP. It has an installed capacity of 513 MWe facilitating three vertical shaft Francis turbines with a nominal output of 3 x 171 MWe. This was verified by physical evidence of the three turbines inside the power-house. On 27/11/2007 the Energy Market Regulatory Authority (EMRA) issued the Energy Generation License for the Boyabat HPP to Boyabat Elektrik.

Boyabat HPP was commissioned on 29/11/2012 and is estimated to annually generate 1,370,000 MWh of renewable energy. Based on the latest available CDM methodologies on grid-connected electricity generation from renewable sources, the PO estimated the combined emission factor of the Turkish national electricity grid of  $E_{FCM,grid} = 0.514 \text{ tCO}_2/\text{MWh}$  and determined an annual average net emission reduction generated by the proposed project activity of 580,882 tCO<sub>2</sub>e.

The project entails a large reservoir of approximately 55 km length which is mostly inaccessible and only some roads enable access to the shore. According to the official volume-area diagram the maximum surface area is 65,4 km<sup>2</sup> and the minimum surface area is 47.5 km<sup>2</sup>. The project owner however is conducting a reservoir wildlife patrol along the entire reservoir which is deployed by boat and documented in a daily report.



Figure 1: Dam body visible from the switch-hub with part of the reservoir.

### 1.3 Site inspection and Interviews

A site visit was conducted on August 27<sup>th</sup>-29<sup>th</sup> where also the site visit for the Verification against VCS took place. Investigated places were the dam and power facility of the plant itself, the switchgear station of the project, parts of the downstream river-area, two local villages including one newly established neighbourhood, the town of Durağan, the DSI state hydraulic works office in Samsun and the Forest Ministry. In addition a stakeholder meeting with several village representatives was held at a meeting point near the project area (list of participants below). The main persons that were interviewed are identified in this table below.

Name	Organisation	Topic
Dr. Aslı Sezer Özçelik (Consultant / PDD Developer)	Ekobil	<ul style="list-style-type: none"> <li>▪ Project start;</li> <li>▪ Project implementation;</li> <li>▪ Local permits and local requirements</li> <li>▪ Applied project technology</li> <li>▪ Physical conditions</li> <li>▪ Project history</li> <li>▪ Project barriers</li> <li>▪ Project status</li> <li>▪ Discussion on additionality, baseline scenario and emission reduction calculation;</li> <li>▪ Feasibility study;</li> <li>▪ Environmental and social impacts and/or community benefits;</li> <li>▪ Financial issues;</li> </ul>

		<ul style="list-style-type: none"> <li>▪ Supporting documents;</li> <li>▪ Substantiation of loan and loan conditions</li> </ul>
Mehmet Büyükgürel	Boyabat Enerji Assisstant Plant Manager (PM)	<ul style="list-style-type: none"> <li>▪ Project history and implementation;</li> <li>▪ Technical issues and detailed functioning</li> <li>▪ Supporting documents;</li> <li>▪ Turbines</li> <li>▪ TEIAS protocols and metering</li> <li>▪ SCADA system and backup</li> <li>▪ Data management</li> </ul>
Volkan Aktürk	Dogus Enerji (Boyabat) Energy Projects Specialist	<ul style="list-style-type: none"> <li>▪ Carbon Project design management</li> <li>▪ Supporting documents</li> <li>▪ Company management details</li> <li>▪ Information related to the Dogus business development</li> </ul>
Ümit Dönmez	Boyabat Enerji Head of Samsun operations	<ul style="list-style-type: none"> <li>▪ Expropriation process and progress.</li> </ul>
Muhtar (Village Representative) 1 Fikret Aksoy	Asikbükü Village	<ul style="list-style-type: none"> <li>▪ Social Resource indicator related issues</li> <li>▪ History of the project</li> </ul>
Muhtar 2 Ishak Aksoy	Aşıkbükü Village	<ul style="list-style-type: none"> <li>▪ Social Resource indicator related issues</li> </ul>
Muhtar 3 Ismail Çil	Aşağı Zeytin	<ul style="list-style-type: none"> <li>▪ Social Resource indicator related issues</li> </ul>
Muhtar 4 Şaban Temizkan	Pelitçikköyü	<ul style="list-style-type: none"> <li>▪ Social Resource indicator related issues</li> </ul>
Halil Ibrahim Yavuz	DSI, State Hydraulic Works Department Head	<ul style="list-style-type: none"> <li>▪ Legal procedures</li> <li>▪ Environmental compliance and legislation</li> <li>▪ Expropriation</li> <li>▪ Water quality, resource and monitoring</li> <li>▪ Degraded areas and reservoir area management</li> <li>▪ General project aspects</li> </ul>
Mr. Murat Çalışgan	Forest Ministry of Duragan Town	<ul style="list-style-type: none"> <li>▪ Legal issues</li> <li>▪ Recovery areas and voluntary recovery</li> </ul>

	Department Head	▪ Natural and biodiversity resources
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## 2 VALIDATION OF SOCIALCARBON INDICATORS AT POINT ZERO

### 2.1 Social Resource

<b>Indicator</b>	<b>Population Displacement</b>				
<b>Situation</b>	<p>The project has undergone an extensive expropriation process that was conducted simultaneously with the project planning and construction. The project owner subcontracted an expertise company to determine the unit price of each type of lot, and declared this in a major meeting at the construction work site, in 2009. A small portion of the property owners agreed and applied to the company to sell their land, and the rest opened court cases. As of today, majority of the issues are solved related to the land use transition of these lots. A summary of this is provided as Annex 1 While the land use and compensation processes are carried out, there have been villages that needed to be relocated partially and entirely. The host country regulations requires the new areas to be inhabited to be as close as possible to the old one to decrease any social problems that may rise. The villagers together with the special provincial authorities and the project owner, are observed to be involved proactively to determine the new areas to be inhabited. This is also mentioned by the villagers we have talked. In the new settlement areas, since the area was built with modern standards the living standards of the citizens have improved compared to the old housings.</p>				
Families and activities located in the project area have no compensation due to their displacement.	Relocation, displacement and mitigation programs exist for such families and activities. However, the program does not ensure reestablishment of quality of life enjoyed prior to displacement.	Only legal owners of properties are compensated.	All families and property owners are correctly relocated, including those who do not possess formal title the land.	Participatory Relocation Program, including negotiations with different actors (owners, public agencies, and civil society organizations).	There is no need to displace families or other activities.
<b>Score</b>	5- Participatory Relocation Program, including negotiations with different actors				
<b>Justification</b>	<p>According to Mr. Ümit Dönmez: 14.000 people had been involved in the expropriation process. This process started in 2009 whereupon 14.384 (private property) lots were affected by the undertaking. 125 further lots on top of that were owned by villages (the community) directly. Around 700 lots belonged to the treasury. In 2009 a meeting with all village heads was arranged by the PO. The PO negotiated the targeted unit prices during those meetings. Finally also the established prices were published. People who wanted to be compensated according to this could apply for the compensation formally. Around 400 lots were compensated according to those conditions. The remaining chose the case to be resolved legally.</p> <p>Muhtar 2/3: With relation to the relocation procedure: During the relocation program of another (state owned) project the original inhabitants had been moved to a village which was very different in culture and climate. This created problems. Knowing this, during the relocation it was agreed that people who preferred moving to other cities can actually be moved to towns (mainly Istanbul and Ankara) and costs of about 90% of the new property/housing was covered. This was much appreciated. Relocation in the countryside was more difficult as appropriate land is not easy to find.</p> <p>Muhtar4: Twenty five lots/families belonged to his village that had to be relocated. Twenty of those have moved to other cities. The remaining five families were relocated internally in the village. The total number of</p>				



	<p>families was sixty (including the 25 affected). According to him the expropriation process can still be active once other properties for the families can be found enabling them to return to the village.</p> <p>Muhtar 1: The expropriation process was conducted like anywhere else. There was a committee established, whose responsibility is mainly to determine the fair value and organize the relocation. The committee consisted of the Agricultural Ministry, Land Registration Office and Village Representatives (Muhtars).</p> <p>Mr. Halil Ibrahim Yavuz: He points out that all necessary parties were involved. DSI is following the expropriation process. They are checking and following the ongoing communication. The governorship is also informing them about all aspects of the expropriation process. The last information was submitted in February 2014 related to one particular town (Saraydüzü).</p>  <p>Meeting with the village representatives stakeholders</p> <p>Given the above the indicator is justified regarding the involvement of several stakeholders including civil representatives.</p>
Evidence	<p>Summary of expropriation (containing number of lots, owners, sizes, status, commercial values and agreements) submitted by Mr. Ümit Dönmez.</p> <p>Interview with Mr. Ümit Dönmez</p> <p>Interview with Mr Halil İbrahim Yavuz.</p> <p>Interview with all above identified village representatives</p>

Indicator	<b>Communication With Stake Holders</b>
Situation	<p>There is a permanent and continuous dialogue between the Boyabat Hydroelectric Power Plant Management and the stakeholders, such as the local representations of the host country government’s offices, and the local inhabitants such as the villages that surround the reservoir lake. The government officer’s correspond with the project management both via the official letters and via the informal spontaneous calls in case of minor issues or emergency issues. The local inhabitants admitted that they were able to get in touch with the project management via either their communications office located at Samsun or via the mobile phone numbers that were provided to them.</p>

There is no communication with local stakeholders.	Fulfilment of legal obligations (such as public consultation) during process to obtain environmental licenses, but evident gaps in communication with stakeholders exists.	During the planning and operation stages, the entrepreneur has communication with the stakeholders.	Establishment of a permanent forum in order to maintain communication with local stakeholders.	Rules and procedures exist to systemize the forum information.	The entrepreneur executes studies regarding public opinion, including diverse stakeholders of the society.
	3. During the planning and operation stages, the entrepreneur has communication with the stakeholders.				
Justification	<p>Muhtar 1: He reports that already himself as a small kid already knew about the project as it (the planning of it) is very old. It was stated that the existence of the dam was common knowledge and communication with the new owner was established rather quickly because most people had positive expectations from the project (employment opportunities and other commercial benefits).</p> <p>Muhtar 2/3: Between 2007/08 letters were sent (invitations for a meeting, stakeholder meeting) and “the company” (this was actually the subcontractor who was responsible for surveys) came and started discussions to determine the value of the land.</p> <p>Muhtar 2: In 2009 there was a meeting (he mentions Mr. Ümit Dönmez) and everybody was informed during that meeting which was held jointly with EMRA at that time.</p> <p>Muhtar 1/2/6: He states that The villagers and people of the projects operation communicate with telephone. Mostly they reach to the project site directly as they were given telephone numbers. If communication is not possible this way for various reasons they can contact Mr. Ümit Dönmez (Head of the Samsun office). It was mentioned that sometimes there are requests by the Village Heads which cannot be satisfied.</p> <p>Mr. Halil Ibrahim Yavuz: They are mainly in communication with the expropriation office and the plant manager of the project. In case of official request correspondence is made officially, otherwise normal telephone communication is established.</p> <p>Mr. Murat Calisgan confirmed that the communication is very regular and contact is very often established. Even visits are mutually made on a regular basis.</p> <p>It is therefore concluded that the communication to several groups is sufficient and has been established early.</p>				
Evidence	<p>Interview with Mr Murat Calisgan</p> <p>Interview with Mr Halil İbrahim Yavuz.</p> <p>Interview with all above identified village representatives</p>				

Indicator	<b>Acceptance</b>
Situation	<p>The project was made known to the local inhabitants several decades ago (see the detailed snapshots of the project origins and history in the validated PDD), thus in a way the inhabitants were psychologically prepared that there would be an expropriation process and some villages would be sunken. As of present the project is accepted with its positive and negative impact but due to the size of the project, one cannot deny that it is impossible to satisfy every single individual affected from the project activity. Therefore one can say that due to the good practice and very positive relationships established by the project owner the local stakeholders are in general ok with the project but some opposition or discontent still exists. In</p>



	addition to the testimonials from the village heads and opinion leaders, the Boyabat HPP have people recruited from the immediate vicinity especially from the Durağan Town, they mentioned that the people in their town were thinking that the project had a positive contribution to their region.				
High level of opposition.	Low support from local stakeholders.	Limited support from local stakeholders.	Support from local stakeholders, but some opposition still exists.	Support from local stakeholders and little opposition.	Strong support from local stakeholders and insignificant opposition.
Score	4- Support from local stakeholders, but some opposition still exists.				
Justification	<p>Muhtar 1: He is pointing out that some of the people in the projects vicinity were disappointed in the beginning (after the early planning stage had finished and the projects development ceased) that the project was not started and they had expectation that the project would bring “work and food” to their homes and lives.</p> <p>Muhtar 1/3/4: They are very satisfied with the operations of the project owner and the business demeanour. However there are big problems with the authorities especially the office (land registry, it is unclear to the DOE which exact competent authority is responsible) which should provide the titles of their land.</p> <p>Muhtar 2: (Opposition part) There is a complaint related to the resettlement. The complaint is that he was growing rice and lost the possibility for irrigation. They have too low water supply (which works by a well) only for a limited amount of time. Also there was a nice Mosque and Kindergarten which was not rebuilt by the project owner.</p> <p>Mr. Halil Ibrahim Yavuz: He cannot confirm any reasonable and justified complaints that have been issued towards DSI. He can only name one legal advisor who according to his opinion is trying to exploit the situation in order to get assignments. Sometimes parliament members have enquiries related to the project activity. There was a question raised why the project was given to the PO and not pursued by DSI itself. However DSI mentioned and elaborated that for various administrative reasons this was impossible. Especially a policy exists that all the plants below a certain power generation capacity will be privatized and not pursued by the state or otherwise implemented.</p> <p>Given the diverse nature of stakeholder comments which could not all be recorded here the score including some resistance is justified.</p>				
Evidence	<p>Interview with Mr Halil İbrahim Yavuz.</p> <p>Interview with all above identified village representatives</p>				

Indicator	<b>Social Demands</b>
Situation	<p>During the site visit and in our conversations with the project owner we have seen that the project owner we have understood that the project management did help the local inhabitants during the transition stage where they were to lose their properties and move into their new settlements. In some cases the project has even helped the some families by contributing to the rent of their transitional homes. They helped the infrastructure of the new settlements and they have also contributed on by providing donations to the local city governorships, or to village budgets. As a result one can conclude that the project owner did help the local community by actions that is beyond their regulatory obligations. Some examples are renovation of an antique house, construction of the roads and infrastructure of the Kızılırmak Neighborhood, and construction of an animal shelter for Saraydüzü Municipality to manage the stray dogs and cats, and construction of a leisure building for Saraydüzü town, where three of the impacted villages citizens have resettled in the newly established Kızılırmak neighborhood that have better living standards compared to</p>

	their old settlements. But is also revealed that despite these actions the village headmen still had some other demands, and the entrepreneur has no standardized approach to address these demands.				
The entrepreneur has no knowledge of external social demands.	Social demands are not considered in the planning, execution and operation stages, or consideration is unsatisfactory.	Only compulsory demands are considered and fulfilled.	The entrepreneur takes actions that surpass compulsory activities.	In addition to surpassing compulsory demands, the entrepreneur has policies, rules and/or other criteria to execute voluntary social actions.	The entrepreneur has integrated plans to elaborate and execute compulsory and voluntary social actions.
Score	4- The entrepreneur takes actions that surpass compulsory activities.				
Justification	<p>Muhtar 2: (refers to the Mosque and Kindergarten) Apart from the irrigation which was lost the PO has rebuild necessary infrastructure which was considered a social demand at that time.</p> <p>Muhtars (several): One major demand is the establishment of an irrigation system. New requests may include bee-keeping facilities and greenhouses. Because the governorship of Kargi is not in their vicinity they are unable to confirm receipt of funds to the governorship (It was mentioned elsewhere that funds had been transferred by the PO to the governorship of Kargi. This was confirmed later and the evidence of transferral was requested and submitted)</p> <p>Muhtar 4: He can confirm that extra payments for the owned properties were made. This was established during the compensation process and value assessment. They agreed with the project owner to increase the established price for a certain lot (because a Mosque was affected too during the expropriation).</p> <p>During the discussions with the PO the below evidence also revealed that the payment request of the Governorship of Kargi was responded to by providing appropriate funds for the required restoration and renovation purposes.</p> <p>Mr. Halil Ibrahim Yavuz: He directly points out that the PO pursued extra activities which are not obligatory. As a part of those activities for instance forty people were working at the facility also during the construction phases. The PO could have provided accommodation for the employees but instead they were renting places from the local economy which in his opinion contributed largely. Also procurement was mainly done local which is an extraordinary effort since normally required goods are bought from known vendors and company suppliers. He also confirms that the PO has established infrastructure in one of the Towns in the vicinity.</p> <p>Mr. Murat Caliskan pointed out during the visit that a new road was supposed to be built. The project owner planted trees alongside the road on a section of approximately three kilometres. At a construction site where excavation debris was stored the PO has reclaimed and renaturalised the area and planted 300 trees. He considers this action very successful and appropriate. This activity was not within the legal obligation because the area did not fall under the responsibility of the PO. He confirms that the entire undertaking was financed by the PO including the purchase of the trees. In addition a walnut forest is close to the village Saraydüzü (Village mentioned later on as this is a new neighbourhood which was established with financial and other support of the PO as a compensation measure). In this area the PO has contributed to a plantation by planting stone-pine trees.</p> <p>Given the explanations of the stakeholders and other reviewed evidence the score of 4 is justified.</p>				
Evidence	<p>Interviews with the above indicated Village Representatives</p> <p>Money transfer receipt of 500.000 TL to the Governorship of Kargi which was used for renovation purposes.</p> <p>Request letter of the Governorship of Kargi to request funds for renovation purposes of facilities made of June 2012.</p>				

	Interview with Mr Murat Calisgan Interview with Mr Halil İbrahim Yavuz.
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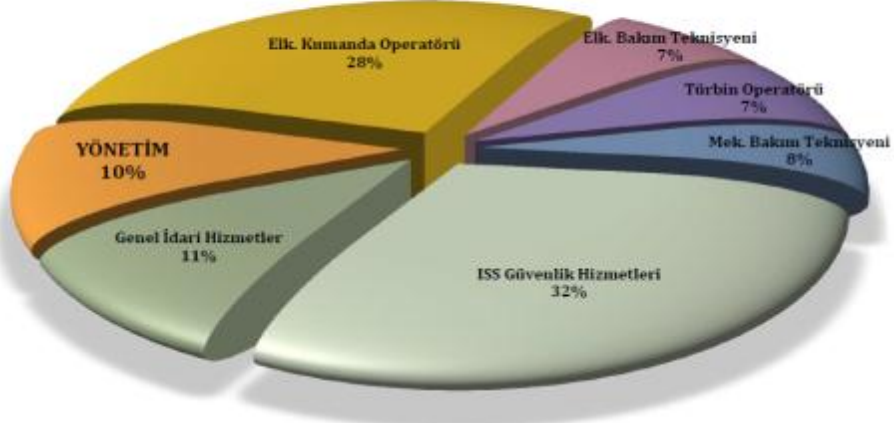
<b>Indicator</b>	<b>Social Programs</b>				
<b>Situation</b>	There are no social programs implemented at the local vicinity of the project activity.				
<b>No actions were taken.</b>	Actions are in planning stage with high uncertainty those benefits can be delivered.	Actions are in place, but there is high need of corrective actions or deviations in proposed activities so benefits can be delivered.	Some programs were held successfully <sup>1</sup> , but with limited impacts on the beneficiaries were observed.	Some programs were held successfully that had positive influence on everyday behaviour.	Some programs were held which show positive results and improve the quality of life of beneficiaries.
<b>Score</b>	1- No actions were taken.				
<b>Justification</b>	The project owner explained that no actions were taken. This directly indicates a score of 1.				
<b>Evidence</b>	Discussion with the Boyabat Management				

<b>Indicator</b>	<b>Social Benefits</b>					
<b>Situation</b>	The project owners have helped the building up of the infra-structure of many re-established villages, they have also helped them built new mosques, and areas that the communities benefited. In addition to that especially during the construction period the project provided jobs to many of the local inhabitants, that some of these people improved their skills and abilities. During this monitoring period, the project contributed to the local economy due to the flats rent by the staff of Boyabat Power plant whom a majority is residing in the Durağan town. Since the project staff is residing in the Durağan town, the buildings that were built for their settlement is planned to be left to the host country government to be used for other public purposes. One of the options is the use of these buildings as a semi-open prison, by the Ministry of Justice. In that case the co-benefit of such type of utilization will be a significant movement in the local economy due to visitors to the prison.					
	Negligible social and economic return for local stakeholders.	Low social return, limited to employment opportunities.	Project delivers benefits in only one of the major areas to a limited number of local stakeholders.	Project delivers benefits in more than one of the major areas to a limited number of local stakeholders.	Project delivers in two major areas to a large number of local stakeholders.	Project delivers in three major areas or more to a large number of local stakeholders.
<b>Score</b>	4 - Project delivers benefits in more than one of the major areas to a limited number of local stakeholders.					
<b>Justification</b>	<p>Muhtar 2: (refers to the Mosque and Kindergarten) Apart from the irrigation which was lost the PO has rebuild necessary infrastructure.</p> <p>Muhtars: All of the Village Representatives confirm infrastructure investments: Muhtar 2: Waste water and drinking water piping and supply system. Muhtar 1: PO provided a room for a nursery and medic station and one school including gathering places for social purposes, Muhtar3: Waste water and Clean Water supply.</p> <p>Mr. Halil İbrahim Yavuz: He directly points out that the PO pursued extra activities which are not obligatory. As a part for instance 40 people were working at the facility also during the construction phases. The PO could have provided accommodation for the employees but instead they were renting places from the local economy which in his opinion contributed largely. Also procurement was mainly done local which is an extraordinary</p>					

	<p>effort since normally required goods are bought from known vendors and company suppliers</p> <p>Upon a visit to the village Saraydüzü proof for the new neighbourhood (Kizilirmak Mahallesi) infrastructure support was collected. The support included landscaping works (flattening the landscape/ levelling), building of the roads and establishment of waste/fresh-water piping system. Also according to an interview with Mr. Fikret help was provided with the land registration and ownership procedures. Some people of this new neighbourhood have not yet built houses on their property but they still remain their right to do so. People mainly moved there from the villages Asagidaricay, Fakili, Yaylacili.</p> <p>As contribution was confirmed by several stakeholders from different areas and also physical evidence in one region was acquired the score of 4 is justified.</p>  <p>The Kizilirmak settlement with new infrastructure</p>
Evidence	<p>Interview with Mr Halil İbrahim Yavuz.</p> <p>Interview with all above identified village representatives</p> <p>Visual inspection of Kizilirmak Mahallesi</p>

## 2.2 Human Resource

Indicator	<b>Human Resource Availability Capacity Building Initiatives</b>				
Situation	<p>During the site visits, we have observed the Boyabat HPP operation team members were selected from amongst the very best in the host country. The plant manager admitted that it was not possible to find staff with specifications they required from the immediate vicinity of the project area. But there were people with security guardian certifications amongst the local inhabitants. So they encouraged their subcontractor responsible for the security affairs, to hire personnel from the immediate vicinity of the project sites. The project is providing jobs to a total of 57 people including the 18 subcontracted ISS -Security company staff that are selected from the local inhabitants.</p>				
Operations and	Operations and	Operations and	Operations and	Operations and	Operations and

Maintenance: Lack of a data bank for registering capacity building initiatives for employees of the project.	Maintenance: Employees of the project have little experience and have never participated in training or courses	Maintenance: Employees of the project have little experience and have participated only once in training or courses.	Maintenance: Employees of the project have participated in training or courses for intervals of one year or less.	Maintenance: Employees of the project have experience and have participated in training or courses for intervals of one year or less.	Maintenance: Employees of the project have experience and have participated in more than one training or course in intervals of one year or less.																
Score	5- Operations and Maintenance: Employees of the project have experience and have participated in training or courses for intervals of one year or less.																				
Justification	<p>The PM explained that approximately 50% of the staff have higher technical education. He gave a presentation showing the education structure of the employees which are in total 27 (workers) per shift. In addition to those 4 management positions are occupied and eight administrative employees are present. Most of the technical employees (except one person) are not from the vicinity of the project area (Samsun/Sinop region) because of the qualifications.</p> <p>The submitted personnel list indicates that all of the 39 identified direct employees have sufficient qualification (samples of individual graduation certificates have been provided). It discloses their work-title, responsibilities origin and graduation status.</p> <p>As clear evidence of the capacity of the personnel could be produced the score of 5 is justified.</p> <div style="text-align: center;"> <p><b>BOYABAT HES</b></p> <p><b>İşletme Personel Dağılımı Grafiği</b></p>  <table border="1"> <caption>BOYABAT HES İşletme Personel Dağılımı Grafiği</caption> <thead> <tr> <th>Personel Türü</th> <th>Oran (%)</th> </tr> </thead> <tbody> <tr> <td>ISS Güvenlik Hizmetleri</td> <td>32%</td> </tr> <tr> <td>Elék. Kumanda Operatörü</td> <td>28%</td> </tr> <tr> <td>Genel İdari Hizmetler</td> <td>11%</td> </tr> <tr> <td>YÖNETİM</td> <td>10%</td> </tr> <tr> <td>Mek. Bakım Teknisyeni</td> <td>8%</td> </tr> <tr> <td>Elék. Bakım Teknisyeni</td> <td>7%</td> </tr> <tr> <td>Türbin Operatörü</td> <td>7%</td> </tr> </tbody> </table> </div> <p>Staff distribution and qualification presented during the plant visit</p>					Personel Türü	Oran (%)	ISS Güvenlik Hizmetleri	32%	Elék. Kumanda Operatörü	28%	Genel İdari Hizmetler	11%	YÖNETİM	10%	Mek. Bakım Teknisyeni	8%	Elék. Bakım Teknisyeni	7%	Türbin Operatörü	7%
Personel Türü	Oran (%)																				
ISS Güvenlik Hizmetleri	32%																				
Elék. Kumanda Operatörü	28%																				
Genel İdari Hizmetler	11%																				
YÖNETİM	10%																				
Mek. Bakım Teknisyeni	8%																				
Elék. Bakım Teknisyeni	7%																				
Türbin Operatörü	7%																				
Evidence	<ul style="list-style-type: none"> <li>- Comprehensive personnel list</li> <li>- Education certificates</li> <li>- Attendance roster of trainings</li> <li>- Interview with the PM</li> </ul>																				

Indicator	<b>Health &amp; Safety</b>
Situation	It is observed that the project has a proper health and safety system, where employees are provided regular health and safety trainings. In addition to this to ensure zero accidents and a safe work

	environment for the employees the project has a Third party OHSAS certification, attached as Annex-2 to this report.				
Occurrence of life-threatening accidents related to the project in the last year.	Occurrence of accidents (nonlife-threatening) related to the project in the last year.	No accidents related to the project in the last year, but absence of employee safety program.	Significant gaps in employee safety program (i.e. insufficient monitoring and evaluation regarding occupational health and safety; no goals or improvement; or performance evaluation.	Existence of an Occupational Health and Safety Management System or satisfactory safety program.	Existence of an Occupational Health and Safety Management System certified by a third party.
Score	6 - Existence of an Occupational Health and Safety Management System certified by a third party..				
Justification	<p>As became apparent during the visit to the plant several trainings have been conducted. This could be proven by provision of training attendance rosters of training activities related to: ISO 9001, 14001, 50001 basic training and auditor training; Environment and waste management and environmental impact analysis trainings; risk analysis training; safe work-equipment utilization training; Electricity risks and precautions; Occupational accidents and principals of avoiding those; Health and Security labels training; usage of personal protection equipment training; Basic OHSAS rules training; Evacuation and emergency response; Chemical physical and ergonomic risk factors; work ergonomics; Fire and emergency and explosives trainings.</p> <p>The PM explained further that all accidents and near-accidents have to be recorded and are submitted to the district court. After that assessment have to be made and root-cause analysis is drafted.</p> <p>The OHSAS certificate had been reviewed on-site and was submitted.</p> <p>Given the certified OHSAS system which was reviewed and the underlying documentation and evidence the score of six is justified.</p>				
Evidence	<ul style="list-style-type: none"> <li>- Several training records</li> <li>- Quality manual</li> <li>- OHSAS Manual</li> <li>- Work safety manual (single procedures/instructions)</li> <li>- OHSAS certificate by TÜV Thüringen issued in Jena 2014-04-26 audit report No.: 3330 2NWF A0, signed by A. Drechsel. It was reviewed that the certificate is particularly issued for to the plant operations.</li> <li>- Work Risk Assessment Form</li> <li>- Interview with the PM</li> </ul>				

Indicator	<b>Benefits</b>				
Situation	In our site visit we have interviewed all the employees of involved in the project activity and it is observed that they are all receiving benefits in 2 of the areas namely, free lunch or dinner (depending on the shift time), and free shuttle ride to work In addition to this all the employees except the subcontracted security personnel, have private health insurance, and rental support on top of the free lunch/dinner and shuttle ride. The higher rank of engineers have car and mobile phone allowances. All employees mentioned that they were happy and they were feeling as part of a very nice project.				
Absence of benefits.	Benefits are limited to some of the employees and do not include all	Benefits are offered to all employees involved in the project in to one of	Benefits are offered to all employees involved in the project in to two of	Benefits are offered to all employees involved in the project in to three	In addition, there are programs to evaluate worker satisfaction in regard



	people involved in the project.	the areas.	the areas.	of the areas.	to benefits received, and the results indicate high levels of satisfaction.
Score	5- Benefits are offered to all employees involved in the project in to three of the areas.				
Justification	<p>At the on site visit evidence was directly collect to proof that benefits were received in at least three of the areas. It was discussed with the PM who was entitled to receive those benefits. He responded that all direct employees of Boyabat receive those. This excludes subcontracted security personnel. The insurance policy evidence indeed showed that all identified employees received the special private health insurance. In addition free meals were offered at all times, employees received financial support for their local rent and a shuttle service is established.</p> <p>The above stated in combination with the reviewed documentation justifies a score of 5.</p>				
Evidence	<ul style="list-style-type: none"> <li>- Insurance policy for private health insurance issued to all direct employees</li> <li>- Catering contract for provision of free meals</li> <li>- Account statement of one of the employees as proof for the rental support</li> <li>- Contract of the shuttle service company as proof for the free commutation program</li> </ul>				

Indicator	<b>Involvement of Employees in the Project</b>				
Situation	During site visit we have observed that only the management was aware of the Climate Change related issues and the carbon Project. But other workers were not informed.				
Workers were not informed or were insufficiently informed about the project, and they are not involved.	Only management and employees directly involved in the carbon project are aware.	Employees were informed.	-	Internal seminars and explanatory materials were distributed among employees.	Communication with employees also includes information on climate change.
Score	2- Only management and employees directly involved in the carbon project are aware.				
Justification	The testimonial of the PM clarified that only higher management is involved in the activities, therefore the score of 2 is applicable.				
Evidence	Discussion with the PM				

### 2.3 Financial Resource

Indicator	<b>Economic Performance</b>
Situation	The Boyabat HPP Operations and maintenance team is doing their best to optimize the project revenues. In our interview about the project’s performance, the project Finance and budget manager admitted that they were achieving their goals. The project is producing under its full potential. (Please note annual expected production was 1,370,000 MWh but it realized as 870,500 MWh, but the project operations management tried their best to catch the best price in the market for the electricity they produced and they sold to an average price of approximately 0.11 USD/kWh, keeping the project within the expected project revenue range enough to pay the debts, this satisfied the shareholders).

Very low performance. Goals established with shareholders have not been reached.	Low performance. Goals and expectations established with shareholders have been partially reached.	Moderate Performance. Goals and expectations established with shareholders have almost been accomplished.	Adequate Performance. Goals and expectations established with shareholders have been accomplished.	Good Performance. Goals and expectations established with shareholders have been accomplished and in some cases surpassed.	Outstanding Performance. Goals and expectations established with shareholders have all been surpassed
Score	3 - Moderate Performance. Goals and expectations established with shareholders have almost been accomplished.				
Justification	It was discussed with the PM that the achieved power production is almost as expected which also applies to the achieved sales prices. However due to lower water levels the full potential of the plant could not be exploited.				
Evidence	Discussion with the Plant Manager Power production records on-site				

Indicator	<b>Market</b>				
Situation	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 be sold to the offset buyers from the voluntary markets.				
Project activities are not eligible for the carbon market.	-	Project activities are eligible for the voluntary market.	-	-	Project activities are eligible for compliance markets.
Score	3 - Project activities are eligible for the voluntary market.				
Justification	The project was Validated against ISO 14064-1 and CDM methodologies. It applies appropriate methodologies and project standards; hence it is eligible for the Voluntary Market.				
Evidence	Final Validation Report of 24/07/2014 by TÜV Rheinland "BOYABAT HYDROELECTRIC POWER PLANT, TURKEY" No.: 21225801 PDD				

Indicator	<b>Sale of Credits</b>				
Situation	Since the carbon market is very unpredictable it is very difficult to make a guess whether the credits could be sold or not.				
Uncertainties about the commercialization of the carbon credits for the period.	Carbon credits are being negotiated, with little uncertainty regarding its commercialization.	Price of the credits is below the current market value.	Price of the credits is in accordance with the average market value.	-	Credits with high aggregated value, above the market average.
Score	1 - Uncertainties about the commercialization of the carbon credits for the period.				
Justification	According to a statement of the PP no sales activities were followed up. This leaves the credits in the Voluntary Market with no or little predictability of neither price nor sales opportunities. Therefore the score is justified.				

Evidence	Negative evidence not available. Statement according to the PP.
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## 2.4 Natural Resource

Indicator	<b>Sustainability Principles</b>				
Situation	The Boyabat Energy shareholders have sustainability commitments and reporting. As a result the Boyabat Energy is also involved in their annual surveys that measure sustainability related parameters. As a result one can admit that, 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. However, the concept is not very well understood among the project employee, and this is observed in the answers provided to the sustainability survey. Yet the establishment of the ISO 14001 Environmental quality system and other quality standards is pushing the operations towards sustainable management ways and practices. Yet, this needs to be improved by specific trainings that address sustainability issues, and sustainability reporting and monitoring needs to be incorporated to the operations.				
There are no commitments to sustainability.	Limited incorporation of sustainability in the values, strategy and principles of the project owner.	Incorporation of sustainability in the values, strategy and principles of the project owner.	Clear sustainability goals and objectives inserted in the values, strategy or principles of the project owner, but difficulties exist in applying them in practice.	In addition to the items in Index 4, the values, strategy or principles of the project owner are effectively incorporated by some collaborators.	Collaborators of the organization incorporate the sustainability values, strategies and principals of the project owner satisfactorily.
Score	3 - Incorporation of sustainability in the values, strategy and principles of the project owner..				
Justification	The project owner is conducting a CSR review based on their Sustainability principles. For this purpose the CSR review (internal audit) had been submitted. It shows clear commitment to certain CSR and sustainability goals and it is implemented on management level. As it does not directly impact on the daily operations of the plant (as the PM also confirms) the score cannot be higher than 3.				
Evidence	Annual internal audit survey completed by Tuba Basacar Bilhan of Boyabat Enerji				


Indicator	<b>Environmental Management</b>				
Situation	The project is implementing an environmental management system that is certified by a third party. The certification is presented as Annex 2.				
There is no systemic approach regarding environmental management.	Large gaps in management systems and no reporting of performance.	Environmental management systems exist, but there is no reporting of performance.	Environmental management and reporting system exists, but with some gaps.	Efficient environmental management system exists but is not necessarily certified.	Certified environmental management system.
Score	6 - Certified environmental management system.				
Justification	The PM submitted information about the details of environmental management. The most important aspect is the disposal of waste. For this purpose the plant operations have to receive certificates for their normal waste				

	<p>with regard to absence of hazardous substances herein. Hazardous waste (e.g. waste oil) has to be disposed of by a specialty company licensed for handling hazardous waste. This procedure is part of the environmental management system.</p> <p>For waste water special tanks exist to dispose of the domestic waste water (as no sewer is connected). Paper is collected and transferred to a recycling plant. Part of the recirculate is directly reused at the plant.</p> <p>Further the entire Environmental Management is certified against 14001 which is why the score of six is justified.</p>
Evidence	<ul style="list-style-type: none"> <li>- Interview with the PM</li> <li>- ISO 14001:2004 certificate by TÜV Thüringen issued in Jena 2014-04-26 audit report No.: 3330 2NWF A0, signed by A. Drechsel. It was reviewed that the certificate is particularly issued for to the plant operations</li> </ul>

Indicator	<b>Environmental Legislation</b>				
Situation	The project complies with the Turkish environmental regulations and rules. All the environmental permits and licenses are valid and up to date. Some of these permits are provided to the validating DOE, a list of the environmental permits is given in Annex 3.				
Violation or inadequate fulfilment of environmental legal obligations. Environmental license suspended for indeterminate period or not renewed.	Licensing process has commenced but with some difficulties such as public lawsuits, inadequacy of environmental impact statements, and judicial procedures, among others.	Environmental license has been issued but uncertainties exist regarding the fulfilment of determined obligations.	Environmental license has been issued, but minor uncertainties exist regarding fulfilment of determined obligations.	Environmental licenses routinely issued; determined obligations are fulfilled.	In addition to the items in Index 5, the entrepreneur has systematic control of the licensing process.
Score	5 - Environmental licenses routinely issued; determined obligations are fulfilled.				
Justification	<p>For the assessment various environmental licenses have been reviewed as can be seen below.</p> <p>Mr. Halil Ibrahim Yavuz also confirms that all legal obligations have been fulfilled. He also confirms that APP or legal reserve is not an issue for this project.</p> <p>Mr. Murat Calisgan also confirms compliance with all legal obligations.</p> <p>As no other indication could be observed other than full compliance with all licensing requirements and legal compliance the score of 5 is justified.</p>				
Evidence	<ul style="list-style-type: none"> <li>▪ Interviews with Mr. Halil Ibrahim Yavuz and Mr. Murat Calisgan</li> <li>▪ Construction camp establishment permits</li> <li>▪ EIA exempt certificate</li> <li>▪ Permit of the Forestry Department of Duragan</li> <li>▪ Permits of the Forestry Department of Vezirköprü</li> <li>▪ Land use permit for other purposes than agriculture of the Sinop Governorship</li> <li>▪ Operation permit of the facility</li> <li>▪ Permit to store explosives</li> <li>▪ Waste water disposal permit</li> <li>▪ Water usage agreement with DSI</li> </ul>				

Indicator	<b>Legal Procedures</b>					
Situation	Although there are court cases going on related to the expropriation issues there are no court cases related to public health issues or environment. Considering that in case of such a law suit DSI and Forestry would be a party to this or would be informed, In our site visits we have asked the DSI officers, and the Forestry management officers, if there was such a legal case, and they have confirmed that there were no such case or any legally filed complain about the project.					
The project: - Suffered a public civil lawsuit in the last year due to potential risk or effective damage to human health or the environment - Was ultimately convicted	The project: - Suffered a judicial lawsuit by public agencies in the last year due to potential risk or effective damage to human health or the environment - Was ultimately convicted	The project received a warning from public agencies in the last year due to potential risk or effective damage to human health or the environment.	The project: - Received a warning from a monitoring agency in the last year due to potential risk or effective damage to human health or the environment - Has rectified the situation	The project: - Suffered public civil action or judicial action or received a warning in the last year due to potential risk or effective damage to human health or the environment - Was not convicted	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.	
Score	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.					
Justification	Mr. Halil Ibrahim was able to confirm that no lawsuits exist and that no other legal action or complaints from any issuing authority or agency exists. This applies to all possible issues including lawsuits aiming towards the environment and human health protection or repair. Further he pointed out that there were no other judicial actions in the past because is used to be a state owned project.  Mr. Murat Calisgan is also unaware of any public or civil judicial action against the project owner. Given those responses the score of six is justified.					
Evidence	Interview with Mr Murat Calisgan  Interview with Mr Halil İbrahim Yavuz.					

Indicator	<b>Environmental Impacts</b>					
Situation	The project has not undergone an Environmental Impact Assessment process, since it was initially designed by the host country government. Yet, there is a very ancient environmental impact assessment report prepared in year 1998. This 3 <sup>rd</sup> party report was prepared to the World Bank Standards. The report also outlines some generally common environmental impacts related to every hydroelectric power plant activity. In addition to this, since the financing institutions that have provided the loan are bound by the Ecuador principles the project activity regularly monitors environmental parameters such as the lifeline water, and other environmental issues via their environmental management system certified by a third party. During this monitoring stage, we have asked DSI if there were any issues related to the compliance of the project to the environmental rules and regulations. DSI reported that the project was in compliance with regulations and they visited the project site with a group of government officials and the project was observed to be ok. In addition to this the forestry department emphasized that the project mitigated the excavation damp site and forested that part by planting 50,000 young trees.					
There are no environmental impact studies. OR Environmental impact studies	Studies show high environmental impact. Compensation and mitigation measures for such	Studies show high environmental impact, yet compensation and mitigation measures for such impacts are unsatisfactory (i.e. Considerable delays and	Studies show high environmental impact, yet compensation and mitigation measures for such impacts are satisfactory (i.e.	Studies show insignificant environmental impact.	Studies show minimal environmental impact. The project implements new technologies or innovative processes	

are incomplete.	impacts are not yet in place.	inefficiencies during execution of environmental programs).	Efficient execution of environmental programs).		to control environmental impacts.
Score	4 - Studies show high environmental impact, yet compensation and mitigation measures for such impacts are satisfactory.				
Justification	<p>According to Mr. Yavuz DSI conducted a monitoring survey to establish whether the project is in compliance with all requirements and whether mitigation is satisfactory. The study had a positive outcome.</p> <p>Mr. Murat Calisgan is referring to the excavation site where debris was deposited during the construction site. This was one of the major persisting impacts after implementation of the project. He considers the recovery action of the project owner as appropriate since no remainders of the work activities are left and the entire area has been covered with trees. In addition he pointed out that no other direct mitigation action is required because of the geographical nature of the marginal project area which is largely inaccessible and includes a robust flora.</p> <p>At the plant an environmental study was reviewed which was conducted in 1998 by Encon during the BOT (Built Operate Transfer) period of the project.</p>  <p>Lake area displaying the rocky nature and robust flora</p>				
Evidence	<p>Interview with Mr Murat Calisgan</p> <p>Interview with Mr Halil İbrahim Yavuz.</p> <p>EIA study of Encon</p>				

Indicator	<b>Environmental Risk Management</b>				
Situation	The project has a general and third party risk insurance and there is an established Environmental Risk Management plan, and the project staff is trained on how to implement this plan in case of an emergency.				
There is no documentation of emergency	Occurrence of emergency situations with significant impacts on environmental and human systems in the monitoring period. Identification and	Identification and correction of the impacts were	There were no environmental emergency situations during the	Periodic evaluations of environmental risks are conducted. Environmental emergencies are	Periodic internal and external audits of environmental risks and technical reports regarding environmental



situations <sup>2</sup> .	correction of such impacts were not inefficient.	efficient.	specified period.	documented and monitored.	management are conducted.
Score	5 - Periodic evaluations of environmental risks are conducted. Environmental emergencies are documented and monitored.				
Justification	<p>An external consultant helped to implement a comprehensive environmental risk assessment and monitoring plan. The plan includes all relevant plant facilities. Where possible events are being identified, effects on the environment are assessed and a quantitative assessment of both risk- and effect-magnitude leads to evaluation of the risk.</p> <p>All the identified risks lead to implementation of an environmental emergency procedure. The procedures have been submitted for reference and were reviewed on site.</p> <p>The submitted environmental risk evaluation form indicates a functioning risk management especially in combination with the corresponding procedures which justifies the score of five.</p>				
Evidence	<ul style="list-style-type: none"> <li>- Environmental aspects and risk analysis form including valuation and assessment of risk and effect magnitude</li> <li>- Contract with external consultant</li> <li>- Environmental risk and emergency procedures.</li> </ul>				

Indicator	<b>Reservoir and marginal areas management</b>				
Situation	The project is located in a rugged topography and therefore there are no excessive marginal areas that can be invaded. However at the downstream parts of the project some local inhabitants try to grow rice at the places that are partially flooded. This part is outside the jurisdiction of Project management, and DSI is responsible to protect the illegal use of these areas.				
Existence of invasion and inadequate use of project owner' areas around the reservoir.	Corrective actions are in place to restore invaded areas or illegal uses of project owner' areas around the reservoir.	There are no invasions or inadequate uses of project owner' areas around the reservoir.	In addition, the project owner has a plan or program for management of the reservoir and marginal areas, but with significant gaps (i.e. is incomplete or reasonably inefficient during its execution).	Satisfactory plan, but it only contemplates monitoring, safety and control activities.	Plan also includes actions that consider multiple uses of the reservoir and adjacent areas with evident benefits to the local population.
Score	3 - There are no invasions or inadequate uses of project owner' areas around the reservoir.				
Justification	<p>During the visit to the DSI office it was explained that the department usually asks for marginal areas management plans. For this project the requirement does not exist because of the early implementation under the DSI operations. Also they did not issue any recommendation for such a marginal areas management plan. Invasions to the project area were observed only downstream of the HPP. This included unapproved rice plantation set-up at the river banks. However he says that this is DSIs responsibility and not the POs obligation to interfere because the area is explicitly excluded from the accountability towards this area. He also said that there is no other inadequate use around the reservoir because of its inaccessibility.</p> <p>Mr. Murat Calisgan points out (as indicated below) that due to the inaccessibility of the marginal reservoir no inadequate use is posing a threat to the area management.</p> <p>The score of three is justified as no inadequate invasion was reported which falls under the responsibility of the project owner.</p>				
Evidence	Interview with Mr Murat Calisgan				

	Interview with Mr Halil İbrahim Yavuz.
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<b>Indicator</b>	<b>Erosion, landslides, silting and floods</b>					
<b>Situation</b>	The project is located at a rugged topography, and there are rocks that may fall to the project structure, but they are secured to the main rock by steel wiring. It is also observed that the operations didn't cause much erosions or sedimentation due to the geographically favourable conditions. We have also noted that in the executive summary of the old EIA prepared in 1998, it is indicated that "At the dam site there are no formations that have a potential for landslides or slope collapses. Thus, it is not expected that construction activities would create any important slope stability problems and landslides".					
	Operations cause major ongoing sedimentation or erosion problems in Reservoir or downstream areas. No action concerning these events. OR Limited or no understanding of erosion issues.	Operations cause major ongoing sedimentation or erosion problems in Reservoir or downstream areas. Corrective actions in place, but with relevant gaps during its execution.	Operations cause major ongoing sedimentation or erosion problems in Reservoir or downstream areas. Corrective actions demonstrate efficiency during its execution.	Operations cause minimal or none ongoing sedimentation or erosion problems in Reservoir or downstream areas.	Program includes preventive actions (reforestation, ebb tide monitoring, etc).	Program is supported by external Stakeholders (i.e. regulators, ngos, etc.).
<b>Score</b>	4 - Operations cause minimal or none ongoing sedimentation or erosion problems in Reservoir or downstream areas.					
<b>Justification</b>	Mr. Murat Calisgan of the Forestry Ministry mentioned that the area around the reservoir is mainly consisting of rocks and stony ground. This is why no erosions and landslides occur. Also since no roads provide access to the reservoir shore (it is very inaccessible) no direct human induced pressure to the shore area is inflicted. As pine trees are the common flora around the area those trees tend to naturally cover potentially degraded areas which sufficiently mitigate erosion problems.  Following the on-site observation of the geography and statements the score of four is applicable.					
<b>Evidence</b>	Visual on-site inspection  Interview with Mr Murat Calisgan					

<b>Indicator</b>	<b>Water Resources</b>					
<b>Situation</b>	The project has no negative impact on the water quality and quantity. The amount of lifeline water agreed to be released to the river is regularly monitored and continuously released by the project activity.					
	Operations cause major ongoing deterioration to reservoir or downstream water quality or the minimal outflows stipulated are not adhered to. No action concerning these events. OR Limited or no understanding of water quality issues.	Corrective actions in place, but with relevant gaps during its execution.	Corrective actions demonstrate efficiency during its execution.	Operations either enhance or cause minimal deterioration to Reservoir or downstream water quality.	Program includes preventive actions.	Program is supported by external Stakeholders (i.e. regulators, ngos, etc.).
<b>Score</b>	4 - Operations either enhance or cause minimal deterioration to Reservoir or downstream water quality.					
<b>Justification</b>	Mr. Yavuz of the DSI explained that the environmental survey conducted showed that due to the project the tail water quality is improved. Also during the office visit he demonstrated the remote life-line water monitoring program. This enables the responsible department of DSI to continuously monitor the water amount. For this					

	purpose certain gauges are installed. In case of any deviation immediately a fine is issued and notification is sent to the PO. If the issue persists the penalty increases. This problem has not been observed for the project. The amount of water has to be held constant at one determined amount which is 10% of the ten year average of natural water flow. The amount has been determined in the water usage agreement and is 8Mio m <sup>3</sup> of water per day.
Evidence	Interview with Mr Halil Ibrahim Yavuz Water monitoring system Visual inspection of the tail water stream

## 2.5 Biodiversity/Technology Resource

Indicator	<b>Recovery of Degraded Areas</b>				
Situation	During the construction phase, there were some areas that were disturbed during the construction of the Dam or other tunnels related to the project activity. These areas are being reclaimed. In addition to this within the project boundaries it is observed that the project owner have made improvements and landscaping activities but these are limited to project boundaries, that are already quite extensive.				
No actions taken.	-	Limited to legal obligation.	Voluntary recovery of degraded areas but only in areas of project ownership.	Voluntary recovery of degraded areas, also in areas outside of project ownership.	Recovery with support from and integration of local stakeholders.
Score	4 - Voluntary recovery of degraded areas but only in areas of project ownership.				
Justification	<p>Mr. Yavuz at DSI provides an explanation that the project owner conducted some voluntary actions as far as they know, however the Ministry of Forestry should be aware of this.</p> <p>Mr. Murat Calisgan pointed out during the visit that a new road was supposed to be built. The project owner planted trees alongside the road on a section of approximately three kilometres. At a construction site where excavation debris was stored the PO has reclaimed and renaturalised the area and planted 300 trees. He considers this action very successful and appropriate. This activity was not within the legal obligation because the area did not fall under the responsibility of the PO. He confirms that the entire undertaking was financed by the PO including the purchase of the trees. In addition a walnut forest is close to the village Saraydüzü (Village mentioned later on as this is a new neighbourhood which was established with financial and other support of the PO as a compensation measure). In this area the PO has contributed to a plantation by planting stone-pine trees.</p> <p>At the plant site it was also observed that the quarry site was reclaimed and covered with trees. Given those explanations and evidence the score of four is appropriate.</p>				

		
Evidence	Part of the quarry recovery and tree planting remedies  Interview with Mr Murat Calisgan  Visual inspection at the plant site	

Indicator	<b>Biodiversity Conservation</b>				
Situation	The project owner is safeguarding the project boundaries and watching for illegal hunters and fishers. This way they are supporting the local wildlife.				
No actions taken.	-	Limited to legal obligation.	Actions to support research on local biodiversity.	Actions to conserve of local biodiversity.	Support to conservation and maintenance of protected areas in the region.
Score	3 - Limited to legal obligation.				
Justification	Mr. Murat Calisgan explained that the legal obligations related to biodiversity conservation are limited to identify requirements of environmental audits (which are referenced by DSI as well, see above mentioned environmental study) that were conducted. The only possible action that could be identified is the prevention of forest fires in the area. However the legal compliance of the plant is not affected by this.  During the interviews it was stated repeatedly that all legal obligations are fulfilled. This includes the biodiversity conservation which is why the score of 3 is justified.				
Evidence	Interview with Mr Murat Calisgan				

Indicator	<b>Ichthyofauna</b>
Situation	The 1998 EIA study has detailed information about the aquatic life in the project area. As a baseline the study indicates that: “Eight species of freshwater fish were found in the study area, the most abundant of which was the barb (196 specimens), and followed by siraz (16 specimens) and wels (9). Barb were found at all sampling stations throughout the project area and accounted for about 83% of the total number of fish

	<p>captured. Most fish (approximately 30% of the total catch) were captured at the sampling Station 5, about 26 km upstream of the Boyabat Dam site All of these fish species are common in Turkey and can be observed in most catchment areas, rivers and lakes throughout the country. Suitable habitat exists over a wide geographical area in Turkey.” However, there no further studies related to fish populations in the area were performed, and the aquatic life is not monitored.</p>				
There is no monitoring.	Inefficiency in monitoring.	Plan or program of monitoring Ichthyofauna is efficient.	Program for corrective actions (restocking, transposition, aquaculture, for example).	Plan or program for preventive actions (research, for example).	Voluntary actions to conserve the Ichthyofauna.
Score	1 - There is no monitoring.				
Justification	The PM explained that there is no monitoring. During the review of the EIA study it was discovered that eight fish species were found. AS the project owner id not pursuing any further studies only score one is applicable.				
Evidence	EIA study Discussion with the PM				

## 2.6 Carbon Resource

Indicator	<b>Additionality</b>				
Situation	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.				
It is not considered additional.	It has additionally limited to part of the project’s activities.	There are uncertainties about additionally, partial or total.	It is considered additional, but it doesn’t use internationally or nationally recognized standards.	It is considered additional, and it uses internationally and nationally recognized standards.	It is considered additional according to criteria stated in a monitoring methodology approved by the CDM Executive Board.
Score	6. It is considered additional according to criteria stated in a monitoring methodology approved by the CDM Executive Board.				
Justification	The score is justified as according to the Final Validation Report “BOYABAT HYDROELECTRIC POWER PLANT, TURKEY” No. 21225801 the project was Validated as being additional. The methodologies applied were all approved methodologies.				
Evidence	Final Validation Report of 24/07/2014 by TÜV Rheinland “BOYABAT HYDROELECTRIC POWER PLANT, TURKEY” No.: 21225801				

Indicator	<b>Emissions Reductions Calculations &amp; Monitoring</b>				
Situation	The projects emission reductions are calculated and monitored based on CDM approved Methodology “ACM0002 version14: Grid-connected electricity generation from renewable sources”				

Absence of a specific methodology to calculate emission reductions AND/OR It does not have a monitoring plan, or it has only partial or insufficient monitoring.	It has an emissions reductions calculation methodology to part of the project's activities.	It possesses a consistent methodology to calculate emissions reductions AND It possesses a consistent monitoring plan that approaches all dimensions of the project.	-	In addition to the items in Index 3, methodology of baseline and monitoring plans are based in internationally recognized standards.	It possesses a methodology to calculate emissions reductions and a monitoring plan based on a methodology approved by the CDM Executive Board.
Score	6. The project has a methodology to calculate emissions reductions and a monitoring plan based on a methodology approved by the CDM Executive Board.				
Justification	The score is justified as the project uses approved methodologies and related tools. This was reviewed by checking the FVR.				
Evidence	Final Validation Report of 24/07/2014 by TÜV Rheinland "BOYABAT HYDROELECTRIC POWER PLANT, TURKEY" No.: 21225801				

Indicator	<b>Validation &amp; Verification</b>				
Situation	The project is validated by a UNFCCC accredited DOE, and the same UNFCCC accredited DOE is also assigned for the verification of the project.				
There is no validation or verification conducted by a third part.	Validation/verification of the project is conducted by an independent third party that is not registered by the UNFCCC (DOE <sup>1</sup> ).	Validation and verification by a DOE is limited to parts of the project.	Validation/ verification are conducted by a Designated Operational Entity but don't follow any internationally recognized procedures.	Validation/ verification are conducted by a Designated Operational Entity following nationally/internationally recognized procedures.	Validation/ Verification are conducted by a Designated Operational Entity according to UNFCCC specifications.
Score	6 - Validation and Verification are conducted by a Designated Operational Entity according to UNFCCC specifications.				
Justification	The score is justified as the project was Validated by TÜV Rheinland which is a registered DOE.				
Evidence	UNFCCC accreditation site				

Indicator	<b>Project Performance</b>				
Situation	Due to general lack of precipitation the project's production performance was as low as 60% of the estimated amounts in the validated PDD.				
Not successful: 0% of carbon credits predicted for the period were effectively generated.	Very Low: 1% to 25% of carbon credits predicted for the period were effectively generated.	Low: 26% to 50% of carbon credits predicted for the period were effectively generated.	Reasonable: 51% to 75% of carbon credits predicted for the period were effectively generated.	Good: 76% to 95% of carbon credits predicted for the period were effectively generated.	Excellent: More than 95% of carbon credits predicted for the period were effectively generated.
Score	3 - Reasonable: 51% to 75% of carbon credits predicted for the period were effectively generated.				
Justification	The score is justified because the verified ER for the last MP were 368,229 t CO <sub>2</sub> from 29/11/2012 to 31/07/2014. The VR states ER of 580,882 tCO <sub>2</sub> e/a.				

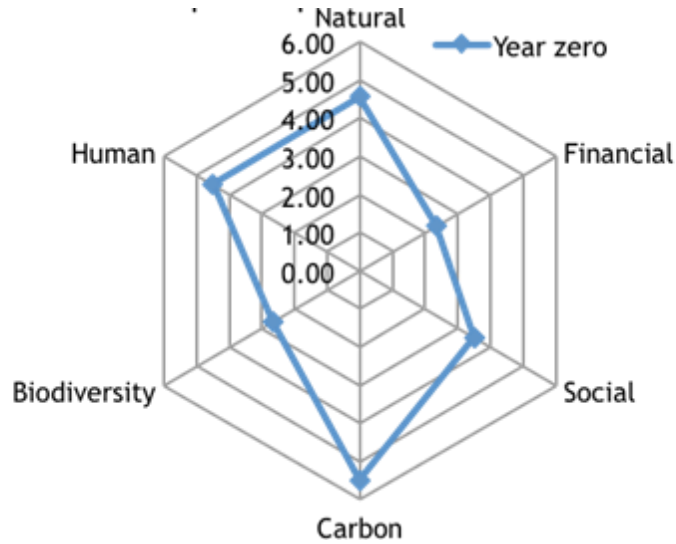


Evidence	Final Validation Report of 24/07/2014 by TÜV Rheinland “BOYABAT HYDROELECTRIC POWER PLANT, TURKEY” No.: 21225801 and Final Verification Report of 04/09/2014 by TÜV Rheinland “BOYABAT HYDROELECTRIC POWER PLANT, Turkey” No.: 21226301.
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**2.7 Performance at Point Zero**

Resource	Critical	Satisfactory	Sustainable	Average Score	Performance
Social	17%	67%	17%	3.50	Satisfactory
Human	25%	0%	75%	4.50	Satisfactory
Financial	33%	67%	0%	2.33	Critical
Natural	0%	44%	54%	4.55	Satisfactory
Biodiversity/Tech	33%	67%	0%	2.67	Critical
Carbon	0%	25%	75%	5.50	Sustainable

2.8 Performance Hexagon



3 VALIDATION CONCLUSION

The Validation has been made by applying the scope and criteria as indicated above. Two indicators of the standard approved indicators set were removed. Two findings were raised with regard to the awarded score of the indicators and the score was lowered one point for both indicators subsequently.

After review of the available information and the on-site visit the Validation Team concludes that the reporting made against the Social Carbon Standard as identified in the Social Carbon Report “Boyabat Hydroelectric Power Plant Project” Version 02 of 31/08/2014 truly reflects the current situation of all applied indicators and is made without material omissions or misstatements. The Validation Team confirms that all scores have been evaluated and verified.

Cologne, September 4<sup>th</sup> 2014

  
Roland Wollenweber