



RINA

GOLD STANDARD VALIDATION REPORT

Final

“Camlica II HEPP”
in
Turkey

Report N° 2012-TQ-14-MD

Revision N° 1.4 Aa



GOLD STANDARD VALIDATION REPORT

Project Title: Camlica II HEPP		Country: Turkey	Estimated VERs (tCO₂e): 49,436	
Client: Derin Enerji Uretim San. Tic. A.S.		Client contact: Murat DIRSEK		
Report No.: 2012-TQ-14-MD		Revision: 1.4 Aa	Date of this report: 16/04/2015	
Approved by (Final Report – Authorized officer signing for the DOE):  Laura Severino			Date of approval: 20/04/2015	
Methodology				
Number: ACM0002	Version: 13.0.0 of 11/05/2012	Title: Consolidated baseline methodology for grid-connected electricity generation from renewable sources	Scale Large	SS(s): 1
RINA Services S.p.A. (RINA), commissioned by Derin Enerji Uretim San. Tic. A.S., has performed the validation of the project activity “Camlica II HEPP” in Turkey, with regard to the relevant requirements for GS activities. In conclusion, it is RINA’s opinion that the project activity “Camlica II HEPP”, in “Turkey”, as described in the PDD version 07 of 17/03/2015, meets all relevant requirements for GS activities and all relevant host Party criteria and correctly applies the baseline and monitoring methodology “ACM0002”, “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, version 13.0.0 of 11/05/2012.				

Work carried out by: Isil TIMUROGLU Tugce KIRATLI Viktor MILKOV	☒ No distribution without permission from the Client or organizational unit responsible ☐ Strictly confidential ☐ Unrestricted distribution
Work verified by (Final Report)  Rita Valoroso	Keywords: Climate Change, Kyoto Protocol, Validation, Gold Standard



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Abbreviations

BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM M&P	Modalities and Procedures CDM
CDM-PCP	Clean Development Mechanism Project Cycle Procedure
CDM-PS	Clean Development Mechanism Project Standard
CDM-VVS	Clean Development Mechanism Validation and Verification Standard
CH ₄	Methane
CR	Clarification Request
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CRT	Coordination and Technical Control Staff
DCI	Certification Division of RINA Services Spa
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
EIA	Environmental Impact Assessment
EMRA	Energy Market Regulatory Authority
ER	Emission Reductions
FAR	Forward Action Request
GHG(s)	Greenhouse gas(es)
GS	Gold Standard
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
LoA	Letter of Approval
LSC	Local Stakeholder Consultation
MoV	Means of Verification
MP	Monitoring Plan
MR	Monitoring Report
NGO	Non-governmental Organization
ODA	Official Development Assistance
PDD	Project Design Document
PE	Project Emission
PIF	Project Introduction File
PMUM	Market Financial Conciliation Center (Piyasa Mali Uzlastirma Merkezi)
PP(s)	Project Participant(s)
Ref.	Document Reference
RINA	RINA Services Spa
SD	Sustainability Development
SMP	Sustainability Monitoring Plan
SS(s)	Sectoral Scope(s)
TEIAS	Turkish Electricity Transmission Company
UNFCCC	United Nations Framework Convention on Climate Change
VER	Voluntary Emission Reduction

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1 INTRODUCTION

Derin Enerji Uretim San. Tic. A.S. has commissioned RINA to carry out the validation of the “Camlica II HEPP” project in Turkey.

This report summarizes the findings of the validation of the project, performed on the basis of GS VER requirements, which refer to CDM rules, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1 Objective

The objective of the Validation is to have an independent evaluation of a project activity by a designated operational entity against the requirements of the GS VER as set out in decision 3/CMP.1, its annex and relevant decisions of the COP/MOP, on the basis of the project design document. In particular, the project's baseline, monitoring plan, and the project's compliance with relevant UNFCCC, GS requirements and host Party criteria are validated in order to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria. Validation is a requirement for all GS projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of verified emission reductions (VERs).

1.2 Scope

The validation scope is to review the PDD against the UNFCCC criteria for GS VER, which refers to CDM rules.

UNFCCC criteria for GS VER refer to Article 12 of the Kyoto Protocol, the GS VER modalities and procedures, and the subsequent decisions by the Gold Standard Foundation.

Validation is not meant to provide any consultancy towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the project design.

2 METHODOLOGY

Validation consisted of the following three phases:

- Document review;
- Follow-up actions;
- The resolution of outstanding issues and the issuance of the final validation report.

The following sections outline each step in more detail.

2.1 Document Review

The PDD version 07 of 17/03/2015 [/1/](#), GS Passport version 05 of 17/03/2015 [/2/](#), in particular the applicability of the methodology, the baseline determination, the additionality of the project activity, the starting date of the project, the monitoring plan, the financial assessment calculation sheet provided in the form of a spreadsheet, “Camlica II_IRR_calcs_12032014_15.4MW.xlsx” version 03 submitted on 12/03/2014 [/4/](#), the emission reduction calculations provided in the form of a spreadsheet, “Confidential_CM_Calculation_GTE2011.xlsx” version 02 of 03/02/2014 [/6/](#), were assessed as part of the validation.

The following table lists the documentation that was reviewed during the validation.

/1/	Global Tan Energy Ltd: GS-PDD for project activity “Camlica II HEPP” in Turkey, version 07 of 17/03/2015 Global Tan Energy Ltd: GS-PDD for project activity “Camlica II HEPP” in Turkey, version 06 of 12/06/2014
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	Global Tan Energy Ltd: GS-PDD for project activity “Camlica II HEPP” in Turkey, version 05 of 09/06/2014 Global Tan Energy Ltd: GS-PDD for project activity “Camlica II HEPP” in Turkey, version 04 of 23/05/2014 Global Tan Energy Ltd: GS-PDD for project activity “Camlica II HEPP” in Turkey, version 03 of 10/03/2014 Global Tan Energy Ltd: GS-PDD for project activity “Camlica II HEPP” in Turkey, version 02 of 03/02/2014 Global Tan Energy Ltd: GS-PDD for project activity “Camlica II HEPP” in Turkey, version 01 of 11/09/2013
/2/	Global Tan Energy Ltd: Gold Standard Passport for Project Activity “Camlica II HEPP” in Turkey, version 05 of 17/03/2015 Global Tan Energy Ltd: Gold Standard Passport for Project Activity “Camlica II HEPP” in Turkey, version 04 of 23/05/2014 Global Tan Energy Ltd: Gold Standard Passport for Project Activity “Camlica II HEPP” in Turkey, version 03 of 10/03/2014 Global Tan Energy Ltd: Gold Standard Passport for Project Activity “Camlica II HEPP” in Turkey, version 02 of 03/02/2014 Global Tan Energy Ltd: Gold Standard Passport for Project Activity “Camlica II HEPP” in Turkey, version 01 of 28/08/2013
/3/	Global Tan Energy Ltd: Local Stakeholder Consultation Report for Project Activity “Camlica II HEPP” in Turkey, version 01 of 09/05/2013
/4/	Global Tan Energy Ltd: Financial Assessment Calculation Spreadsheet “Camlica II_IRR_calcs_12032014_15.4MW.xlsx” version 03, submitted on 12/03/2014 Global Tan Energy Ltd: Financial Assessment Calculation Spreadsheet “Camlica II_IRR_calcs_03022014_15.4MW.xlsx” version 02, submitted on 03/02/2014 Global Tan Energy Ltd: Financial Assessment Calculation Spreadsheet “Camlica II Financial Model_20082013 44 license period after tax_loan.xlsx” version 01, submitted on 20/08/2013
/5/	Global Tan Energy Ltd: Common Practice Spreadsheet “Camlica_II_CP_17.58MWe.xlsx” version 02, submitted on 10/003/2014 Global Tan Energy Ltd: Common Practice Spreadsheet “Camlica_II_CP_15.4MWe.xlsx” version 02, submitted on 10/003/2014 Global Tan Energy Ltd: Common Practice Spreadsheet “common practice 2012 Plants_camlica.xlsx” version 01, submitted on 29/07/2013
/6/	Global Tan Energy Ltd: Emission Reduction Calculation Spreadsheet “Confidential_CM_Calculation_GTE2011.xlsx” version 02 of 03/02/2014 Global Tan Energy Ltd: Emission Reduction Calculation Spreadsheet “Confidential_CM_Calculation_GTE2011.xlsx” version 01 of 20/08/2013
/7/	Gold Standard Foundation: Camlica-II 16 MW Hydro Power Plant Project, Turkey (GS 1173), Local Stakeholder Consultation Report Review Feedback of 05/06/2013
/8/	The Gold Standard: Requirements, version 2.2 of 01/06/2012
/9/	The Gold Standard: Toolkit and related Annexes (A – S), version 2.2 of 01/06/2012
/10/	CDM Executive Board: Baseline and monitoring methodology “ACM0002”, “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, version 13.0.0 of 11/05/2012
/11/	CDM Executive Board: Methodological Tool “Tool for demonstration and assessment of additionality”, version 07.0.0 of 23/11/2012
/12/	CDM Executive Board: Methodological Tool “Tool to calculate the emission factor for an electricity system”, version 03.0.0 of 23/11/2012
/13/	CDM Executive Board: Methodological Tool “Tool to Calculate Project or Leakage CO ₂

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	Emissions from Fossil Fuel Combustion", version 02 of 02/08/2008
/14/	CDM Executive Board: "Guidelines for Completing the Project Design Document Form for CDM Programmes of Activities", version 04.0 of 26/07/2013
/15/	CDM Executive Board: Project Design Document Form for CDM Project Activities (F-CDM-PDD), version 04.1 of 11/04/2012
/16/	CDM Executive Board, Glossary of CDM terms, version 07.0 of 23/11/2012
/17/	CDM Executive Board: Clean Development Mechanism Validation and Verification Standard, version 6.0 of 11/04/2014
/18/	CDM Executive Board: Clean Development Mechanism Project Standard, version 06.0 of 11/04/2014
/19/	Energy Market Regulatory Authority: Generation License numbered EU/3071-2/1816 of 09/02/2011 Energy Market Regulatory Authority: Generation License Amendment of 12/02/2013
/20/	Eser Proje ve Muhendislik A.S.: Feasibility Report of Camlica II HEPP of March 2011
/21/	Directorate General Nature Conservation and National Parks: Ecosystem Assessment Report of 24/04/2013
/22/	Kahramanmaraş Sutcu Imam Universitesi (KSU): Evaluation of the Structural Aspects of Fish Passage Project by Ahmet ALP and Adil AKYUZ for Camlica II HEPP of 12/08/2012
/23/	Kayseri Governorship Environment and Urbanization Directorate: EAI Not Required Certificate of 16/02/2011 Kayseri Governorship Environment and Urbanization Directorate: EAI Not Required Certificate of 20/05/2013
/24/	General Directorate Of State Hydraulic Works and Derin Enerji Uretim Sanayi Ticaret A.S.: Water Utilization Agreement of 03/01/2011
/25/	Gokoguzlar Muhendislik: Project Introduction File for Camlica II HEPP of 26/11/2009
/26/	Aras Kargo and Derin Enerji Uretim San.Tic.A.S.: Proposal of Transport of 11/08/2011
/27/	Tandogan Hukuk Burosı: Advocacy and Legal Consultancy Agreement of 22/08/2011
/28/	Turkay Enerji Müsavirlik Elektrik Mak. Ins. Proje Tesis Ltd. Sti.: Technical Consultancy Contract for Usage of System Connection of 17/10/2011
/29/	Mert Kopyalama Ofis Kirtasiye Bilgisayar ve Tic. Ltd.Sti.: Stationery Agreement of 10/10/2011
/30/	Ekoplan Muhendislik Danismanlik Ltd. Sti.: Service Contract of 24/05/2011
/31/	EMD Enerji Merkezi Danismanlik Insaat Sanayi ve Ticaret Ltd. Sti.: Electromechanical and Hydro Mechanical Equipment Quality and Process Management Agreement of 20/08/2011
/32/	EMR Danismanlik Ltd. Sti.: Consulting Services Contract Regarding the Preparation of Investment Incentive Certificate of 20/09/2011
/33/	Eser Proje ve Muhendislik A.S.: Engineering Services Contract of 25/05/2011
/34/	Jemas-Su Yeraltisulari Etud ve Muhendislik Ltd. Sti.: Basic Research Drilling and Geological and Geotechnical Surveys Agreement of 01/05/2011
/35/	Türkiye İş Bankası A.S.: Insurance Brokerage Operating Principles of Consultation and Cooperation Protocol of 10/08/2011
/36/	Derin Enerji Uretim San. ve Tic. A.S. and Global Tan Energy Ltd Türkiye Ankara Sube: Agreement of Certification, Purchase and Sale of the Credits of 20/10/2011
/37/	TC: Ankara 47. Noterliği: Commitment to Allow Certain Stock of 28/06/2011
/38/	Dolsar Muhendislik Ltd. Sti.: Consulting Services of 12/07/2011
/39/	Cinar Muhendislik Musavirlik A.S.: Environmental Consultancy Agreement of 22/08/2011
/40/	TCT Insaat Madencilik Sanayi Ticaret Ltd. Sti. and Derin Enerji Uretim Sanayi ve Ticaret A.S.:

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	Procurement and Construction Contract of 08/08/2011
/41/	Website: http://mer.markit.com/br-reg/public/index.jsp?q=camlyca&s=cp Argument: The Registered Project Database Language: English, Retrieved on: 26/09/2013
/42/	Website: http://maindb.unfccc.int/public/country.pl?country=TR Argument: UNFCCC, Parties and Observers States, Turkey Language: English, Retrieved on: 26/09/2013
/43/	Website: http://www.unicef.org/turkey/udhr/_gi17.html#art1 Argument: United Nations: Universal Declaration of Human Rights Language: Turkish & English, Retrieved on: 07/10/2013
/44/	Website: http://webfusion.ilo.org/public/db/standards/normes/appl/appl-byCtry.cfm?lang=en&CTYCHOICE=0660 Argument: International Labour Standards: List of Ratifications of International Labour Conventions by Turkey Language: Turkish & English, Retrieved on: 07/10/2013
/45/	Regional Directorate of Forestry: Permission of the Usage of Spoil Material area, No:0108-897 of 22/06/2012
/46/	Derin Enerji Uretim San. ve Tic. A.S.: Permission to Start the Construction of 01/05/2012 (TCT Insaat)
/47/	Derin Enerji Uretim San. ve Tic. A.S.: Permission to Start the Construction of 06/09/2012 (Mekik Insaat)
/48/	Intergovernmental Panel on Climate Change: 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2, Chapter 1, Table 1.4 "Default CO ₂ Emission Factors for Combustion"
/49/	The Energy Market Regulatory Authority: Electricity Market Balancing and Settlement Regulation of 14/04/2009
/50/	Regulation of Disposal of Hazardous wastes (Published in official gazette dated 14.03.2005 and numbered 25755)
/51/	Regulation of Disposal of Solid wastes (Published in official gazette dated 14.03.1991 and numbered 20814)
/52/	Regulation on assessment and management of environmental noise (Published in official gazette dated 07.03.2008 and numbered 26809)
/53/	CDM Executive Board: Methodological Tool "Tool to determine the remaining lifetime of equipment", version 01 of 16/10/2009
/54/	CDM Executive Board: Guidelines on the Assessment of Investment Analysis", Version 05 of 15/07/2011
/55/	World Bank; Report No: 46808-TR: Project Appraisal Document; Annex 1
/56/	Website: http://www.gib.gov.tr/fileadmin/mevzuatek/eski/verusulteb333ek.html Argument: Accounting regulations for depreciation periods Language: Turkish Retrieved on 14/10/2013
/57/	Website: http://www.mmb.org.tr/default.aspx?pid=24826&nid=16297 Argument: Union of Financial Counselors and Accountants-Income tax rate in Turkey Language: Turkish Retrieved on 14/10/2013
/58/	Website: http://www.epdk.gov.tr/documents/10157/4b360128-53aa-4174-8104-a6c10434ac9c Argument: Energy Market Regulatory Authority-Electricity tariffs

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	Language: Turkish/English Retrieved on 14/10/2013
/59/	Website: http://pmum.teias.gov.tr/UzlasmaWeb/ Argument: Market Settling and Balancing Center - Actual Electricity Prices-Monthly Reports Language: Turkish Retrieved on 14/10/2013
/60/	Website: http://dgpys.teias.gov.tr/dgpys/ Argument: PMUM Official Website, TEIAS Highest Electricity Tariffs Language: Turkish, Retrieved on: 14/10/2013
/61/	Website: https://pmum.teias.gov.tr/UzlasmaWeb/ Argument: TEIAS Weighted Average of the Electricity Tariffs Language: Turkish Retrieved on 14/10/2013
/62/	TEIAS: System Connection Agreement of 07/08/2013
/63/	Derin Enerji Uretim San. ve Tic. A.S.: Plan and the Area of the Reservoir, submitted on 03/02/2014
/64/	Derin Enerji Uretim San. ve Tic. A.S. and Kössler Gesellschaft mbH: Equipment Agreement of 23/02/2012
/65/	Türkiye İs Bankası and Derin Enerji Uretim San. ve Tic. A.S.: Bank Loan Agreement of 25/07/2011
/66/	Derin Enerji Uretim San. ve Tic. A.S. and Global Tan Energy Ltd.: Carbon Proposal of 08/06/2011
/67/	Global Tan Energy Ltd: Emission Reduction Results Excel Sheet "Camlica_II_HEPP_VER_Calcs_12032014_v3.xlsx", version 03 of 12/03/2014 Global Tan Energy Ltd: Emission Reduction Results Excel Sheet "Camlica_II_HEPP_VER_Calcs_03022014_v2.xlsx", version 02 of 03/02/2014
/68/	Ministry of Energy and Natural Resources: Correspondence for "Construction Permit is not Required" of 26/07/2013
/69/	Energy Market Regulatory Board: Expropriation Decision of 06/10/2011
/70/	Zenit Muh. Harita Ins. Emlak San. Ltd. Sti.: Expropriation Plans and Registration, submitted on 03/02/2014
/71/	Yahyali Governorship: Free Permission to Use the Lake Area of 15/06/2012
/72/	Mekik İnşaat Madencilik Sanayi ve Ticaret Ltd. Sti. and Derin Enerji Uretim San. ve Tic. A.S.: Construction Agreement of 05/09/2012
/73/	Kayseri Special Provincial Administration: Correspondence of Local Development Plan of 25/04/2012
/74/	Derin Enerji Uretim San. ve Tic. A.S. and Ar Elektrik Enj. Akr. Gaz. Nak. Turz. Ins. İml. Taah. San. Tic. A.S.: Agreement of Energy Transmission Line Project, the map and the Expropriation Works of 10/09/2012
/75/	Derin Enerji Uretim San. ve Tic. A.S. and Ar Elektrik Enj. Akr. Gaz. Nak. Turz. Ins. İml. Taah. San. Tic. A.S.: Substation construction, Supply and Manufacturing Agreement of 23/09/2013
/76/	Turkey Electricity Distribution Corporation: Approval Energy Transmission Line of 02/09/2013
/77/	General Directorate of State Hydraulic Works: Survey, Design and Feasibility Approval of 27/12/2012
/78/	Turkish Electricity Transmission Company (TEIAS): Electricity Generation & Transmission Statistics Of Turkey, 2010 Website:

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	http://www.teias.gov.tr/T%C3%BCrkiyeElektrik%C4%B0statistikleri/istatistik2011/yak%C4%B1t46-49/47.xls Argument: Turkey's Gross Electricity Generation By Primary Energy Resources and the Electric Utilities (2006-2010) (Fuel Consumption) Language: Turkish and English, Retrieved on: 06/11/2013 Website: http://www.teias.gov.tr/T%C3%BCrkiyeElektrik%C4%B0statistikleri/istatistik2011/uretim%20tuketim(22-45)/23.xls Argument: Turkey's Gross Electricity Generation By Primary Energy Resources and the Electric Utilities (2009-2011) (Gross Generation Data) Language: Turkish and English, Retrieved on: 06/11/2013 Website: http://www.teias.gov.tr/T%C3%BCrkiyeElektrik%C4%B0statistikleri/istatistik2011/uretim%20tuketim(22-45)/33(84-11).xls Argument: Turkey's Gross Electricity Generation By Primary Energy Resources and the Electric Utilities (2009-2011) (Net Generation Data) Language: Turkish and English, Retrieved on: 06/11/2013 Website: http://www.teias.gov.tr/T%C3%BCrkiyeElektrik%C4%B0statistikleri/istatistik2011/yak%C4%B1t46-49/47.xls Argument: Net Calorific Values of TEIAS Statistics Language: Turkish and English, Retrieved on: 06/11/2013
/79/	Turkish Electricity Transmission Company (TEIAS): Turkish Electrical Energy 10-Year Generation Capacity Projection (2012-2021), of July 2012
/80/	Turkish Energy Market Regulatory Authority: Communiqué for Measurement Devices used in the Electricity Market of 22/03/2003
/81/	Derin Enerji Üretim San. Tic. A.Ş.: Opinions and Reviews of Project Logbook, submitted on 23/05/2014
/82/	The Ministry of Energy and Natural Resources: Temporary Acceptance Protocol of 02/05/2014
/83/	Website: http://www.tcmb.gov.tr/wps/wcm/connect/TCMB+EN/TCMB+EN/Main+Menu/STATISTICS/Exchange+Rates/Indicative+Exchange+Rates Argument: National Bank of Turkey, average exchange rates for March 2011 Language: English, retrieved on 14/10/2013

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2.2 Follow-up actions

On 08/10/2013, RINA visited project site located at Yahyalı District of Kayseri Province in Turkey to resolve questions and issues identified during the document review and to perform interviews with relevant stakeholders in the host country.

During on site visit, the stakeholders were interviewed about the benefits and harms of the project, local employment, expropriation, explosions, dust emission and noise emission. No negative feedback has been received from the stakeholders about dust and noise pollution because of explosions during the construction. In addition, they confirmed and indicated that the project has the expropriation and they received the price of plots harvested. They are also glad for providing job opportunity. The stakeholders specified that vegetation is not suitable for planting. Therefore, no tree cutting was observed.

Also, the mukhtar was interviewed by phone. He explained that no negative feedbacks have been received from the stakeholders. He also claimed that the expropriation was applied because of the property owners were not alive and the people who are inheritance were fail to agree with each other.

The key personnel interviewed and the main topics of the interviews are summarized in the table below.

	Date	Name and Role	Organization	Topic
/a/	08/10/2013	Gani ELDELEKLIOGLU Consultant	Global Tan Energy	Description of the project activity
/b/	08/10/2013	Murat DIRSEK Project Manager	Derin Enerji	Baseline and Additionality Emission reductions calculations
/c/	08/10/2013	Abdullah CETIN Topographer	Derin Enerji	Monitoring plan and monitoring arrangements
/d/	08/10/2013	Fethi AKAGUNDUZ Operational Chef	Derin Enerji	GS Sustainable Indicators Local stakeholder consultation Environmental and social impacts
/e/	08/10/2013	Erdinc YILDIZ Civil Engineer	Derin Enerji	Timeline of the Project
/f/	08/10/2013	Ramazan GEYIK The Mukhtar	Camlica Village	Local stakeholder consultation and comments
/g/	08/10/2013	Ilyas KAHVECI Villager	Camlica Village	Environmental impacts of the project activity
/h/	08/10/2013	Duran GEYIK Villager	Camlica Village	Social impacts of the project activity
/i/	08/10/2013	Ali DINCER Villager	Camlica Village	Expropriation
/j/	08/10/2013	Muhammed SAPMAZ Villager	Camlica Village	Noise Emission (Blasting Activities)
/k/	08/10/2013	Yüksel ERDEMİR Villager	Camlica Village	Dust Emission

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2.3 Resolution of outstanding issues

The objective of this phase of the validation is to resolve any outstanding issues which need to be clarified for RINA's positive conclusion on the project design.

To guarantee transparency a validation protocol has been customized for the project. The protocol shows in a transparent manner the requirements, means of validation and the results from validating the identified criteria. The validation protocol consists of three tables; the different columns in these tables are described in the figure below (see Figure 1). The completed validation protocol is enclosed in Appendix A to this report.

A corrective action request (CAR) is raised if one of the following occurs:

- The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions.
- The GS VER requirements have not been met.
- There is a risk that the emission reductions cannot be monitored or calculated.

A clarification request (CR) is raised if information is insufficient or not clear enough to determine whether the applicable GS VER requirements have been met.

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Figure 1 Gold Standard Validation protocol tables

Validation Protocol, Table 1 - Requirement checklist				
Checklist Question	Ref.	MoV	Comments	Conclusion
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organized in five different sections.	Makes reference to documents where the answer to the checklist question or item is found.	Explain how conformance with the checklist question is investigated. Examples are document review (DR), interview or any other follow-up actions (I), cross checking (CC) with available information relating to projects, (N/A) means not applicable.	The discussion on how the conclusion is arrived at and the conclusion on the compliance with checklist question so far.	For CAR, CL and FAR see the definitions above. OK is used if the information and evidence provided is adequate to demonstrate compliance with CDM/GS requirements.

Validation Protocol, Table 2 - Resolution of Corrective Action Requests and Clarification			
Corrective action requests and/or clarification requests	Reference to Table 1	Response by project participants	Validation Conclusion
The CAR and/or CLs raised in table 1 are repeated here.	Reference to the checklist question number in Table 1 where the CAR or CL is explained.	The responses given by the project participants to address the CARs and/or CLs.	The validation team's assessment and final conclusion of the CARs and/or CLs.

Validation Protocol, Table 3 - Forward Action Requests (if no FAR the table 3 is deleted)		
Forward action request	Reference to Table 1	Response by project participants Validation Conclusion
The FAR raised in table 1 is repeated here.	Reference to the checklist question number in Table 1 where the FAR is explained.	Response by the project participants on how forward action request will be addressed prior to first verification.

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2.4 Internal quality control

All the revisions of the validation report before being submitted to the client were subjected to an independent internal technical review to confirm that all validation activities had been completed according to the pertinent RINA instructions.

The technical review was performed by a technical reviewer(s) qualified in accordance with RINA's qualification scheme GS VER validation and verification.

2.5 Validation team and the technical reviewer(s)

The validation team and the technical reviewers consist of the following personnel:

Role/Qualification	Last Name	First Name	Country
Team Leader, GS Validator, Technical Expert	Timuroglu	Isil	Turkey
Financial Expert	Milkov	Viktor	Bulgaria
Validator and Technical Expert	Kiratli	Tugce	Turkey
Technical Reviewer	Valoroso	Rita	Italy

3 VALIDATION FINDINGS

The findings of the validation related to the project, as described in the PDD version 07 of 17/03/2015 and previous versions [/1/](#), are stated in the following sections.

The validation requirements, the means of validation and the results from validating the identified criteria are documented in more detail in the validation protocol in Appendix A.

3.1 Participation

The project participant are Derin Enerji Uretim San. Tic. A.S. and Global Tan Energy Ltd. and are private entity; the project is a unilateral project and hence the host country is the only Party involved in the proposed project activity. Turkey fulfils the requirements to participate in the GS VER, having ratified the Kyoto Protocol on 28/05/2009 has put in effect on 26/08/2009 [/19/](#). However, Turkey does not have any emission reduction target; hence, it's not listed as an Annex B country of the Kyoto Protocol. The project participant is correctly listed in table 4 of the PDD and the information is consistent with the contact details provided in Appendix 1 of the PDD [/1/](#).

The proposed project has not directly or indirectly received or benefited from official development assistance on condition that the credits are transferred to the donor country (Turkey) of the assistance. In this regard, RINA checked the ODA declaration form provided by the Derin Enerji Uretim San. Tic. A.S. signed by the project owner on 09/02/2012, which is presented in GS Passport [/2/](#).

3.2 Project design document and Gold Standard Passport

The PDD for the project activity "Camlica II HEPP", in "Turkey", version 07 of 17/03/2015 and previous versions [/1/](#) and the Gold Standard Passport, version 05 of 17/03/2015 [/2/](#) submitted by the Derin Enerji Uretim San. Tic. A.S. has been the basis for the validation process.

RINA confirms that the above PDD is based on the currently valid PDD template [/15/](#) and is completed in accordance with the applicable guidance document "Guidelines for Completing the Project Design Document Form" [/14/](#) and the Gold Standard Passport is in accordance with the latest version of the Gold Standard Passport template (Annex R to Toolkit version 2.2) [/9/](#).

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3.3 Project Design

Purpose and general description of the project activity

The purpose of the project activity is to install run-of-river hydro power plant with a total installed capacity of 17.88 MWm/17.58 MWe. It was clearly confirmed that with the Generation License /19/ of 09/02/2011, the project activity has been allowed to generate 15 MWe but then with the amendment generation license /19/ of 12/02/2013 the project activity has a new capacity of 17.58 MWe. The project activity will generate electricity by utilizing the renewable energy. The estimated net electricity production is 89,558 MWh and the annual emission reductions are estimated to be 49,436 tCO₂e per year. The generated electricity will be fed to Turkish National grid. The project activity does not have any public funding or Official Development Assistance (ODA) funding on 09/02/2012 as presented in the Annex 1 of the Passport /2/.

Project location

The project is located in central Anatolia within the boundaries of Yahyalı District of Kayseri Province in Turkey. The geographical coordinates, which are presented below, have been crosschecked through the Preliminary EIA Report /25/.

Unit	Latitude (N)	Longitude (E)
Camlica II HEPP	37.9034788	35.4912182
Tunnel Inlet-Outlet	37.9179036 - 37.9040153	35.4938434 - 35.4909861
Forebay	37.9045992 - 37.9045096	35.4910740 - 35.4910483

Scenario existing prior to the implementation of the project activity

Scenario prior to the implementation of the project activity, Turkish grid is mainly feed by thermal power. The proposed project is a Greenfield project where no other power plant was located at the same site prior to the implementation of the project activity, which is confirmed during the on-site visit. The commissioning date of the turbines is 02/05/2014 as confirmed through the Temporary Acceptance Protocol /82/.

Technology(ies) employed

The project qualifies as a large-scale CDM project activity. The project is a hydro power plant located on Zamanti River. The project consists of 3 turbines each having 5.96 MWm/5.86 MWe capacities. Total output of the project is 17.58 MWe as per the Generation License /22/. The project activity is designed to generate electricity.

The expected operational lifetime of the project activity is calculated as 44 years according to the Generation License /19/. The technical lifetime of the project activity is calculated as 25 years as per the "Tool to determine the remaining lifetime of equipment" /53/.

Project implementation

The project activity will generate electricity by utilizing the renewable energy. The Water Right Utilization Agreement /24/ was signed on 03/01/2011. The Generation License was published on 09/02/2011 and amendment on 12/02/2013 /19/. The project Consultancy Services Agreement /38/ was signed between Dolsar Muhendislik Ltd. Sti. and Derin Enerji Uretim Sanayi Ticaret A.S. on 12/07/2011. The construction Subcontractor Agreement /40/ was signed between TCT Insaat Madencilik Sanayi Ticaret Ltd. Sti. and Derin Enerji Uretim Sanayi ve Ticaret A.S. on 08/08/2011. The Carbon Agreement /36/ was signed between Derin Enerji Uretim San. ve Tic. A.S. and Global Tan Energy Ltd. On 20/10/2011. The Ecosystem Assessment Report /21/ was prepared on 24/04/2013. The commissioning date of the turbines is 02/05/2014 as confirmed through the Temporary Acceptance Protocol /82/.

Crediting period and estimated Emission Reductions

The starting date of crediting period is 02/05/2014 as confirmed through the temporary acceptance protocol /82/. A renewable crediting period of 7 years has been chosen for the project activity. It is expected that the project activity will generate 89.558 GWh/y of electricity per year and delivered to the

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Turkey National grid. The annual average emission reductions resulted from the project is expected to be 49,436 tCO₂e.

Contribution to sustainable development

The project will contribute to decrease SO₂ and NO_x emissions. The species under special protection will be protected by the project owner by taking required measures. Staff will be trained and certificated for the positions created during construction and operation phase and for use of the technical equipment health and safety protocols and working at high voltage environment and all necessary safety equipment will be provided by the project owner. The project activity will compare electricity generated by the project and natural gas that would be used to produce the same amount of electricity by a thermal power plant. Project activities will create many direct and indirect job opportunities.

The project will reduce dependency on fuel and energy import through use of local and renewable resources and help meet national energy demand and enable diversification in the energy supply. According to projections, electricity demand of Turkish grid will increase significantly in the coming years.

RINA was able to verify all the documented evidence listed above during the validation process and can confirm that data and considerations are complete and accurate. Moreover, RINA confirms that the description of the proposed GS project activity, as contained in the PDD sufficiently covers all relevant elements, is accurate and complete and that it provides the reader with a clear understanding of the nature of the proposed GS project activity.

3.4 GS criteria – project type eligibility screen

The project type eligibility is assessed as per the GS Toolkit [/9/](#) which is explained below:

Scale of project activity

The project activity is a large-scale project as the total installed capacity of the project activity is exceed the 15 MW, which is in accordance with the GS Requirements [/8/](#).

Host country

The host party of the project activity is Turkey who has ratified the Kyoto Protocol on 28/05/2009 and has put in effect on 26/08/2009 [/42/](#). As Turkey was neither a Party of UNFCCC at the time the Kyoto Protocol was adopted, nor included in the Annex B of the Protocol which defined quantified emissions limitation or reduction commitments for Annex I parties. Hence, Turkey does not have a quantified emission limitation or reduction commitment in the first commitment period over the period of 2008-2012 under the Protocol. This also means that an official approval from the relevant local authorities stating that an equivalent amount of allowances will be retired to back-up the GS VERs issued is not required.

Type of project activity

The purpose of the project activity is to generate electricity from renewable sources (hydro) and fed to the Turkish National power grid. The project activity fits into the renewable energy supply category (i.e. generation and delivery of electricity from a renewable hydro power resources), as defined in the GS Toolkit version 2.2 of 01/06/2012 [/9/](#).

Greenhouse gases

The greenhouse gas due to project activity is defined as CO₂ which is eligible under Gold Standard.

Official Development Assistance (ODA)

The project activity will not use Official Development Assistance (ODA). The project owner has signed ODA declaration on 09/02/2012 and included to the GS Passport [/2/](#).

Project timeframe

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The Project was not announced to be going ahead without the revenues from the sales of carbon credits as explained in the GS Passport [/2/](#).

Other Certification Schemes

The project is not registered under another voluntary carbon crediting scheme as confirmed through the registered projects database [/41/](#).

3.5 GS Criteria - Pre-feasibility assessment

As per the GS Toolkit version 2.2 of 01/06/2012 [/9/](#), pre-feasibility assessment is not required for the proposed project activity, as described in the following:

- The proposed project does not apply for retroactive registration;
- The project activity is the installation of hydro power plant which does not be required pre-feasibility assessment as per the GS Annexes C to Toolkit version 2.2 of 01/06/2012 [/9/](#).
- The project is not being rejected for registration by the UNFCCC, which can be confirmed by verifying the UNFCCC website.

3.6 Application of selected baseline and monitoring methodology

Project Activity Eligibility

The project activity is a large-scale project as the total installed capacity of the project activity is exceed the 15 MW, which is in accordance with the GS Requirements [/8/](#).

The project correctly applies the approved baseline and monitoring methodology “ACM0002”, “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, version 13.0.0 of 11/05/2012 [/10/](#).

The proposed project activity meets the criteria defined in the baseline methodology as it ensures that:

- The project activity is the installation of a new run-of-river hydro power plant at a site where no renewable power plant was operated prior to the implementation of the project. The project is a greenfield plant as validated through the site visit.
- The project activity results in new single reservoir and the power density of the reservoir, as per the definitions given in the project emissions section, is greater than 4 W/m².
- The generated electricity is fed to the national grid of Turkey.
- The proposed project activity does not involve switching from fossil fuels to renewable energy sources at the site of project activity as confirmed during the site visit.
- The proposed project activity does not involve combined heat and power (co-generation) systems as confirmed during on-site visit.
- The proposed project activity does not involve biomass fired power plants.
- The project activity is not retrofit or replacement project. The project is a greenfield plant as validated through the site visit.

The project activity applies the following methodological tools:

- Methodological Tool “Tool for demonstration and assessment of additionality”, version 07.0.0 of 23/11/2012 [/11/](#)
- Methodological Tool “Tool to calculate the emission factor for an electricity system”, version 03.0.0 of 23/11/2012 [/12/](#)

and meets the defined criteria as it ensures that:

- Additionality tool is applicable to the project activity since Gold Standard VER project activities, of whatever scale and type, are required to use either UNFCCC-approved or a Gold Standard-approved additionality tool to demonstrate project additionality.

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- Baseline tool is applicable to the project activity since the project activity supplies electricity to the national grid.

RINA hereby confirms that the selected baseline and monitoring methodology has been previously approved by the CDM Executive Board/GS Board, and is applicable to the Project, which complies with all the applicability conditions therein and the selected version is valid at the time of submission of the proposed project activity for registration. It is also confirmed that the methodology is correctly applied by comparing it with the actual text of the applicable version of the methodology.

3.7 Project boundary and baseline identification

3.7.1 Project boundary

According to the approved baseline and monitoring methodology “ACM0002”, “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, version 13.0.0 of 11/05/2012 [/10/](#) the project boundary includes the project power plant and all power plants connected physically to the electricity system that the project is connected to.

Emissions sources included in the project boundary are shown in the table below:

	GHGs involved	Description
Baseline emissions	CO ₂	CO ₂ emission from fossil fuel fired power plant that are displaced due to project activity.
Project emissions	NA	Project emissions are neglected in line with the ACM0002 /10/ since the project activity is a run-of-river type HEPP and the power density of the reservoir is greater than 10 W/m ² .
Leakage	NA	Since the main emissions potentially giving rise to leakage in the context of electric sector projects are emissions arising due to activities such as power plant construction and upstream emissions from fossil fuel use, the leakage emissions are neglected as per the methodology ACM0002, version 13.0.0 of 11/05/2012 /10/ .

By checking the information by the physical site, RINA can confirm that all the emission sources, gases have been included in the project boundary, and the description in the PDD is accurate and complete, and also that the selected sources and gases are justified for the proposed project activity.

3.7.2 Baseline identification

According to the approved baseline methodology ACM0002 [/10/](#), the baseline scenario is “the electricity delivered to the grid by the project activity that otherwise would have been generated by the operation of grid-connected power plants and by the addition of new generation sources”. Since the baseline is defined by the approved methodology, no further analysis is required.

The approved baseline methodology “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” has been correctly applied to identify the most reasonable baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed GS project activity.

3.8 Additionality

According to the GS Requirements [/8/](#), the additionality of the project has been established applying the “Tool for demonstration and assessment of additionality”, version 07.0.0 of 23/11/2012 [/11/](#).

The above opinion of RINA to the additionality of the proposed project is further explicitly explained in the following steps.

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3.8.1 Prior consideration of the clean development mechanism

Project Starting Date

The starting date of the project activity is 25/07/2011 that is the date of loan agreement signed between the PP and Türkiye İİ Bankası /65/. Since the first real action is loan agreement, the starting date of the project activity is in line with the definition as per the CDM Glossary of Terms /16/.

Prior Consideration

Start date of project activity is defined as 25/07/2011, which is the date of loan agreement /65/. The loan agreement is the first real action of this project. The start date of a proposed project activity is prior to the date of publication of the PDD for the stakeholder consultation performed on 26/01/2012. However, the proposal about carbon revenues was collected on 08/06/2011 /66/ and it shows that carbon reduction revenue was seriously considered in the decision to proceed with the project activity.

The following timeline of key milestones was elaborated based on the verifiable evidence collected during the validation process. The information is consistent with the timeline provided in the PDD and all events show a logic sequence, which is in line with the GS/CDM requirements and rules.

	Date	Milestone activities verified
/1/	03/01/2011	Water Right Utilization Agreement /24/
/2/	09/02/2011	License Issuance /19/
/3/	08/06/2011	Carbon Certification Proposal /66/
/4/	12/07/2011	Project Consultancy Services Agreement /38/
/5/	25/07/2011	Bank Loan Agreement /65/
/6/	20/10/2011	Carbon Certification Agreement /36/
/7/	26/01/2012	LSC Meeting /3/
/8/	23/02/2012	Equipment Agreement /64/
/9/	01/05/2012	Start of Construction /46/
/10/	27/12/2012	State Hydraulic Works Project Approval /77/
/11/	24/04/2013	Ecosystem Assessment Report /21/
/12/	20/05/2013	Revised Exemption from EIA Certificate /23/
/13/	07/08/2013	System Connection Agreement /62/
/14/	02/09/2013	Energy Transmission Line Approval /76/
/15/	02/05/2014	Temporary Acceptance Protocol (Commissioning Date of the Turbines) /82/

3.8.2 Identification of alternatives

According to the approved baseline methodology ACM0002 /10/, the baseline scenario is “the electricity delivered to the grid by the project activity that otherwise would have been generated by the operation of grid-connected power plants and by the addition of new generation sources”. The project proponent has justified the selection of the baseline scenario in line with the applied methodology and the same is deemed reasonable.

3.8.3 Investment analysis

3.8.3.1. Benchmark

The type of the investment analysis method is defined following the requirements of the Tool for the Demonstration and Assessment of Additionality ver. 07.0.0 /11/ and the Guidelines for the Investment Analysis, ver.05 /54/. The project generates economic benefits other from selling carbon credits so

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Simple cost analysis is not applicable. From the other hand the baseline of the project is the generation of electricity by the grid hence no alternative investment is considered and the only applicable method is benchmark analysis.

So the investment analysis method used by the Project Proponent is a benchmark derived according to the requirements of the Tool for the Demonstration and Assessment of Additionality ver. 07.0.0, Sub-step 2b: Option III. Apply benchmark analysis [/11/](#).

The benchmark used is defined for Turkey at 15% for RES (hydro) projects by the World bank in the document Project Appraisal Document Report No 46808 – TR dated 01/03/2009 [/55/](#).

The PP has identified the equity IRR as the most suitable financial indicator for the project and corresponding to the type of the benchmark applied.

The equity IRR of 12.66% is calculated based on the input parameters that have been valid at the time of investment decision taking (25/07/2011) which is the date of the Bank Loan Agreement signing [/65/](#). The equity IRR is calculated before taxes which is more conservative from Investment analysis point of view because this approach leads to a relatively higher equity IRR.

According to the approved baseline and monitoring methodology “ACM0002” “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, version 13.0.0 of 11/05/2012 [/10/](#), the additionality of the project has been established applying the Methodological Tool “Tool for demonstration and assessment of additionality”, version 07.0.0 of 23/11/2012 [/11/](#).

The above opinion of RINA to the additionality of the proposed project is further explicitly explained in the following steps.

The validation process of the investment analysis followed the requirements of the “Guidelines on the assessment of the investment analysis”, ver.05 [/54/](#) in order to determine whether the project activity is not the most economically or financially attractive alternative, or that it is not economically or financially feasible without VER. The audit team followed the requirements of the Validation and Verification Standard, ver. 06.0 [/17/](#) in order to verify the accuracy of the financial calculations carried out by the PP and to confirm the suitability of the benchmark chosen.

3.8.3.2. Input parameters

Parameter used for financial analysis	Unit	value	Source
Grid connected output	GWh	90.70	FSR prepared by Eser Proje ve Muhendislik in March 2011 /20/ Financial assessment Calculation spreadsheet /4/ As per “Guidelines for reporting and validation of plant load factors”, the plant load factor is calculated by a third party for the feasibility report.
Capital Investment	US\$	31,390,548	FSR prepared by Eser Proje ve Muhendislik in March 2011 /20/ Financial assessment Calculation spreadsheet /4/
Expected Tariff	US\$ cents/kWh	7.3	Energy Market Regulatory Authority-Electricity tariffs /58/
O&M Cost	\$/year	3,337,000	FSR prepared by Eser Proje ve Muhendislik in March 2011 /20/ Financial assessment Calculation spreadsheet /4/
Exchange rate	US\$/TL	1.41	Exchange rate at the time of Feasibility Study Report /25/ issuance.
Bank loan	1000\$	21,973	FSR prepared by Eser Proje ve Muhendislik in March 2011 /20/ Financial assessment Calculation

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			spreadsheet /4/
Loan interest	%	5.5	FSR prepared by Eser Proje ve Muhendislik in March 2011 /20/ Financial assessment Calculation spreadsheet /4/
Depreciation period of the - Construction - electro-mechanical equipment	years	40 29	FSR prepared by Eser Proje ve Muhendislik in March 2011 /20/ Financial assessment Calculation spreadsheet /4/
Duration of the investment assessment	years	44	Financial assessment Calculation spreadsheet /4/

1. Net output: 90.70 GWh/year. To crosscheck the parameter the audit team studied the generation license EU/3071-2/1816 which was issued on 09/02/2011 by the Energy Market Regulatory Agency (EMRA) /19/ and was amended on 12/02/2013 for the generation of 89.558 MWh which gives a plant load factor of 58.22%. The net electricity generation of 90.70 GWh is given in the FSR prepared by Eser Proje ve Muhendislik in March 2011 /20/ and approved by the General Directorate of State Hydraulic Works /77/. The net output and the PLF are acceptable as they are defined as required by EB48, Annex 11, and Section II. 3 (a): The plant load factor provided to banks and/or equity financiers while applying the project activity for project financing, or to the government while applying the project activity for implementation approval;

The estimated net output of electric energy was verified and confirmed.

2. Investment costs: 31,390,548 US\$. In order to crosscheck the amount of the Investment costs the audit team studied the following documents:

- Feasibility Study Report prepared by Eser Proje ve Muhendislik in March 2011 /20/;
- Tandogan Hukuk Burosui: Advocacy and Legal Consultancy Agreement of 22/08/2011 /27/;
- Technical Consultancy Contract for Usage of System Connection of 17/10/2011 /28/;
- Stationery Agreement of 10/10/2011 /29/;
- Service Contract of 24/05/2011 /30/;
- Electromechanical and Hydro Mechanical Equipment Quality and Process Management Agreement of 20/08/2011 /31/;
- Engineering Services Contract of 25/05/2011 /33/;
- Basic Research Drilling and Geological and Geotechnical Surveys Agreement of 01/05/2011 /34/;
- Consulting Services of 12/07/2011 /38/;
- Environmental Consultancy Agreement of 22/08/2011 /39/;
- Procurement and Construction Contract of 08/08/2011 /40/;
- Equipment Agreement of 23/02/2012 /64/;
- Construction Agreement of 05/09/2012 /72/;
- Substation construction, Supply and Manufacturing Agreement of 23/09/2013 /75/;

The investment costs in the FSR incorporate the following main sections:

Description	US\$*1000
Construction Works	12,831.969
Electromechanical Hardware	11,602.500
Energy Transmission Works	249.345
Expropriation & Public Works	311.682
General Expenses	2,468.381
Engineering & Consultancy	2,715.220
Interest During Construction	1,211.451

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All figures that constitute the investment costs have been verified by the audit team by studying the FSR and crosschecked with the agreements listed above.

General expenses: 2,468,381 US\$. This item represents ~7.8 % of the total investment which is quite reasonable amount. In order to verify this figure the audit team studied the World Bank-Project Appraisal Document Report No 46808 – TR dated 01/03/2009 [/55/](#). The World Bank uses in its study contingencies of 10 % for Renewable Energy Source projects. The value used for the current project is more conservative.

The amount of the investment listed in the PDD was verified.

3. The price of electric energy, set for the project at 7.3 US\$cents/kWh. In order to crosscheck the audit team studied the websites of the Turkish Energy Market Regulation Authority [/58/](#) [/59/](#) [/61/](#), and the Electricity Market Balancing and Settlement Regulation of 14/04/2009 [/49/](#) for the price of electric energy generated by HEPP which is still in force at the moment.

The price was confirmed.

4. O&M costs: The costs are estimated at 3,337,000 US\$/year for the whole period.

The amount estimated is based on Feasibility Study Report prepared by Eser Proje ve Muhendislik in March 2011 [/20/](#). The audit team studied also additional documents provided by the PP, namely:

- Water Utilization Agreement of 03/01/2011 [/24/](#);
- System Connection Agreement of 13/08/2013 [/62/](#);

The O&M costs include the following main expenses:

- grid fee – 110,000 USD/yr
- maintenance - 173,000 USD/yr
- insurance – 94,000 USD/yr
- contribution fee – 2,544,000 USD/yr
- staff & contingency – 417,000 USD/yr

The value of the expenses is based and corresponds to the values estimated in the FSR [/20/](#)

The FSR and the additional documents were studied by the audit team and the costs were verified.

5. Loan:

The equity/debt ratio is as follows:

- | | |
|-------------|-------|
| Own capital | - 30% |
| Bank loan | - 70% |

The amount of the loan is verified by studying the Loan agreement with Turkiye Is Bankasi [/65/](#)

6. Interest on loan: The interest on loan of 5.5 % was crosschecked with the Loan agreement with Turkiye Is Bankasi [/65/](#).

7. Depreciation period of 40 years for construction and 29 years for electromechanical equipment. In order to crosscheck the stated periods the audit team studied the website of the Turkish revenue administration and the accounting law of Turkey [/56/](#). The values stated were confirmed.

8. Investment assessment period of 44 years. The assessment period corresponds to the technical lifetime of the project activity which is in line with the recommendations of the Guidelines on the assessment of the investment analysis", ver.05 [/54/](#).

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All input parameters are based on the Feasibility Study Report prepared by Eser Proje ve Muhendislik in March 2011 /20/. The Investment decision date is stated as (25/07/2011) which is the date of the Bank Loan Agreement signing /65/. The period between FSR issuing and the investment decision taking is about 4 months which sufficiently short and it is unlikely in the context of the underlying project activity that the input values would have materially changed.

The input values from the FSR are valid and applicable at the time of investment decision (25/07/2011).

The parameter that could have changed most probably was the TL/USD rate which has been set at 1.60 in the FSR /20/. The audit team checked the rate for March 2011 by visiting the website of The Turkish National Bank /83/ (at the time of investment decision taking) and found that it has been 1.575 TL/USD which does not make great difference with the rate at the FSR finalization.

The relevant data and parameters were checked with the values in the FSR and their correctness was confirmed.

3.8.3.3. Sensitivity analysis

Sensitivity analysis has been carried out according to the conditions when the investment decision is given for 90.70 GWh/year generation and 7.3 US\$ c/kWh guaranteed price.

Sensitivity analysis has been carried out for three main parameters identified;

Investment Cost

Operating Cost

Electricity Sales revenue (electricity production)

The variations have been made with +/-15% variance for the investment costs, operating costs and sales revenues which are in line with the Guidance for the Investment Analysis, ver.05 /54/ and for that type of projects.

	-15	-10	-5	0	+5	+10	+15
Investment Cost	16.34	14.91	13.70	12.66	11.75	10.95	10.24
Operating costs	15.80	14.71	13.66	12.66	11.69	10.76	9.86
	-15	-10	-5	0	+5	+10	+15
Electricity Tariff	7.33	9.01	10.77	12.66	14.69	16.91	19.35
Electricity production	9.27	10.35	11.48	12.66	13.89	15.19	16.56

The PP has presented an assessment for the probability to reach the benchmark and has demonstrated that this probability is very low for all cases.

In order to reach the benchmark the different parameters have to change as follows:

The Investment cost has to decrease with 10.25% which is not very likely to happen. The FSR has been finalized in March 2011 and was based on financial information available at that time. The prices of equipment and construction works always tend to increase in time having in mind inflation and rising prices of energy, materials and labour. That is why it is unlikely to expect reduction of the investment costs provided the initial technical design of the project is followed. Reduction of the price is theoretically possible with considerable changes in the construction and design of the project which is not subject to this assessment.

The Operating costs has to decrease with ~12.5 %which is highly unlikely considering the fact that the price of spare parts, salaries and of the expenses tend to increase constantly through the years. The operational expenses were justified by the information provided by the PP and the number of license agreements signed with the Turkish state and regional authorities, as well as with the Turkish electric company TEIAS, namely:

- FSR /20/

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- Water utilization agreement [/24/](#)
- Insurance protocol [/35/](#)
- TEIAS System connection agreement [/62/](#)
- IRR calculation sheet, Operation Ex. Details [/4/](#)

The O&M expenses always tend to increase in time due to inflation, increase of spare parts price and salaries and this decreases the IRR.

Electricity sales revenue has to increase with 5 to 10 %. This means that either electricity tariff has to increase to 7.7 US\$/kWh or the electricity generation has to increase with ~10% in order to reach the benchmark. In general the electricity tariffs tend to go up on a long-term base but having in mind that the tariff is regulated by state authority and the free energy market, an increase of the price for electric energy to 7.7 US\$/kWh is doubtful. From the other hand the long-term policy of Turkey, as demonstrated recently, is to encourage the construction of considerably more power plants including nuclear power plants. This will increase the competition at the energy market and will stimulate lower prices. The amount of electricity generated annually is estimated based on long-term statistic data for the water-flows (statistic information since 1980) and the turbines are chosen to meet that flow with the highest possible coefficient of efficiency. Hence it is not justifiable to expect ~10% increase in the energy generation in the future on a long-term base.

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The project has been realized with parameters that are worse than the estimated at the beginning in the FSR. The revised Energy generation license is issued based on up-dated water flows and are fixed at 17.58 MWe installed capacity and net electricity generation of 89.56 GWh/yr. Those parameters lead to more expensive electro-mechanical equipment and less electricity generation by the project. In this respect the parameters estimated in the FSR and the IRR calculation are more conservative from financial point of view and lead to a higher IRR than the realized project and justify the statement that it would be unlikely to reach the benchmark without revenues from selling VERs.

The financial expert therefore approves the abovementioned sensitivity analysis as well as the analysis of the possibilities of realization of all assessed scenarios.

Calculation and conclusion

Calculation of the benchmark: The equity benchmark of 15% selected is taken from the World Bank in its Report No 46808 [/9/](#) for similar project types. The calculations of the equity IRR were received in an excel spreadsheet file named: "Camlica II_IRR_calcs_12032014_15.4MW.xlsx" [/4/](#)

The calculations in the spreadsheet were verified and found to be correct. The assumptions used in the calculations have been found to be correct too. The equity IRR is 12.66% before taxes which is lower than benchmark of 15%. It can be concluded that the Investment analysis performed by the PP proves that the project is additional. The benchmark and the equity IRR are approved.

3.8.4 Barrier analysis

Barrier analysis is not applied as the additionality of the proposed project activity is demonstrated through investment analysis, which is in line with the Methodological Tool "Tool for demonstration and assessment of additionality", version 07.0.0 of 23/11/2012 [/11/](#).

3.8.5 Common practice analysis

According to the methodological tool for the demonstration and assessment of additionality [/12/](#), the common practice analysis shall be conducted for both capacities:

For capacity 15.4 MWe:

The applicable output range is calculated as +/-50% of the capacity of the project activity in line with the tool. The project comprises an installed capacity of 15.4 MWe at time of investment decision;

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therefore, the applicable output range is 7.7 MWe to 23.1 MWe. The total number of N_{all} is calculated as 46 and the total number N_{diff} is calculated as 39.

The proposed project activity is a “common practice” within a sector in the applicable geographical area if the factor F is greater than 0.2 and $N_{all}-N_{diff}$ is greater than 3.

The $N_{all}-N_{diff}$ is calculated as 7, which is greater than 3.

Factor $F = (1 - N_{diff}) / N_{all}$ is calculated as 0.152; therefore, the project is not common practice.

For capacity 17.58 MWe:

The applicable output range is calculated as +/-50% of the capacity of the project activity in line with the tool. The project comprises an installed capacity of 15.4 MWe at time of investment decision; therefore, the applicable output range is 8.79 MWe to 26.37 MWe. The total number of N_{all} is calculated as 42 and the total number N_{diff} is calculated as 35.

The proposed project activity is a “common practice” within a sector in the applicable geographical area if the factor F is greater than 0.2 and $N_{all}-N_{diff}$ is greater than 3.

The $N_{all}-N_{diff}$ is calculated as 7, which is greater than 3.

Factor $F = (1 - N_{diff}) / N_{all}$ is calculated as 0.167; therefore, the project is not common practice.

3.8.6 Conclusion

RINA can confirm that all data, rationales, assumptions, justifications and documentation provided by the project participants to support demonstration of additionality are credible and reliable.

By assessing, the evidences presented and cross-checking the information contained in, RINA considers the reasoning for the proposed project additionality demonstration is credible and reasonable i.e. the proposed project has the ability to reduce anthropogenic emissions of greenhouse gases by sources below those that would have occurred in the absence of the registered GS project activity.

3.9 GS Criteria - Sustainability assessment

The project activity supports the sustainable development by reducing greenhouse gas emissions and other pollutants comparing to baseline scenario and creating job opportunities during the construction and the operation phase.

The safeguarding principles and sustainability development indicator are assessed as explained below.

3.9.1 Do no harm assessment

The risk of the project could have harmful impacts have been assessed under “Do no harm assessment” section in GS Passport [/2/](#). The “Do no harm assessment” is based on the UNDP (United Nations Development Programme) safeguarding principles. All the safeguarding principles are assessed in terms of risk, and the explanations and references are provided for each principle to justify the evaluation of the degree of risk.

Human Rights

All safeguarding principles listed under “Human Rights” are scored low risk. The host country has ratified the European Convention on Human Rights [/43/](#). The project does not involve and is not complicit in involuntary resettlement. The project does not involve and is not complicit in involuntary resettlement. The project does not involve and is not complicit in the alteration damage or removal of any critical cultural heritage as confirmed during the site visit and as per the Preliminary EIA Report [/25/](#) of the project activity.

Labour Standards

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The project respects the employees' freedom of association and their right to collective bargaining and is not complicit in restrictions of these freedoms and rights. Turkey has ratified ILO Convention 87 (Freedom of Association and Protection of the Right to Organize Convention) and ILO Convention 98 (Right to Organize and Collective Bargaining Convention) [/44/](#). All safeguarding principles listed under "Labour Standards" are scored low risk. The project activity complies with the ILO Convention [/44/](#).

The project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments. Turkey has ratified ILO Convention 155 (Occupational Safety and Health Convention) [/42/](#).

Environmental Protection

All the conducted assessments during the Preliminary EIA Report [/25/](#) shows that from this project activity there is no significant negative influence into environment and social area. The every kind of waste will be disposal as per the related regulation of Environmental Law.

The project activity is not located in an area, which is legally protected, officially proposed for protection, identified by authoritative sources for their high conservation value, or recognized as protected by traditional local communities as confirmed during the site visit. The project will use an existing dam and will install only penstock and powerhouse.

Anti-Corruption

The anti-corruption safeguarding principles is scored low. The project does not involve and is not in complicit in corruption. Turkey is a party to United Nation Convention against Corruption [/44/](#).

3.9.2 Sustainable development matrix

The GS indicators of sustainable development are defined as per the Annex I of the GS Toolkit [/9/](#). The indicators are connected to the localized Millennium Development Goals as per the Annex I of the GS Toolkit [/9/](#). The baseline situation and the future target are described for each parameter. The justification for choice of the parameters was provided in the GS Passport. The justification is based on objective sources such as "Preliminary EIA Report" [/25/](#).

The defined the GS indicators in the SD matrix which are in line with the Annex I of the GS Toolkit [/9/](#) are given below including their scores.

Air Quality (+)

Parameter: SO₂ and NO_x emissions

In parallel to the electricity generation SO₂ and NO_x emissions reduction will be realized since the grid is mainly fed by the fossil fuels. The effect of the project on the air quality is scored positive and will be monitored annually.

Water Quality and Quantity (0)

Parameter: Amount of water released

The Project is run-of-river type without a storage capacity, quality and the quantity of water will not be affected by the project activity compared to the baseline scenario. Project will use excess water from the channel and releasing flow from the channel is within the responsibility of the project owner signed a water usage agreement with DSI. The parameter is scored neutral.

Soil condition (0)

Parameter: Appropriate storage of excavation aggregates and sediment transport

The excavated soil is used as layer to the present landscaping as per the "Preliminary EIA Report" [/25/](#). The parameter is scored neutral and will be monitored once after construction is completed.

Other Pollutants (0)

Parameter: Noise level during construction and dust emission

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Noise or other pollutant source does not exist; parameter is scored neutral, however, it will be monitored once after construction is completed.

Biodiversity (0)

Parameter: Number of affected species

The assessment/opinion of independent expert on effectiveness of the project design will be included in monitoring report. Expert assessment will be supported by references and local data. Alternatives, additional measures and recommendations will also be discussed in the expert report. The parameter will be monitored once after project is completed.

Quality of Employment (+)

Parameter: Number of certificates issued/trainings provided

The quality of staff will be increased by trainings. The parameter is scored positive and will be monitored annually.

Livelihood of the Poor (0)

Parameter: Change in living standards

Project will increase income of local people compared to baseline scenario through locally recruited staff and supply of plant needs from region therefore will have indirect impact in terms of living standards. Parameter is scored neutral and will not be monitored.

Access to Affordable and Clean Energy Services (0)

Parameter: Fossil fuel replaced

Project will decrease dependency on import fossil fuels (natural gas, coal and petroleum) compared to baseline scenario. The parameter is scored neutral and will not be monitored.

Human and institutional capacity (0)

Parameter: Number of people participating stakeholder meetings

Project will have indirect impact on awareness about environmental issues. The parameter is scored neutral and will not be monitored.

Quantitative Employment and Income Generation (+)

Parameter: Payment made to staff

The project will create new employments around the project area during the operation and construction of the project. The parameter is scored positive since the income generation will increase and related parameter will be monitored annually.

Balance of Payments and Investment (+)

Parameter: Currency saving due to avoided fuel import

Turkey is mainly dependent on import coal and natural gas for electricity generation. Project will contribute decrease in trade deficit and help in improvement of balance of payments. The parameter is scored positive and will be monitored annually.

Technology Transfer and Technological Self-reliance (0)

Parameter: Expenditures for equipment

Project contributes in technology transfer to Turkey and has limited impact on development of local suppliers and knowhow in the country. Scoring has been neutralized as the impact is at firm level. The parameter is scored neutral and will not be monitored.

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All of the indicators have been scored positive or neutral in comparison with the baseline situation. None of the indicators has been scored negative. The project contributes positive to “environment” and “economic and technological development” and “social development”.

It is RINA’s opinion that the project complies with the sustainability assessment requirements defined in the GS Toolkit version 2.2 of 01/06/2009 [/9/](#).

3.10 Monitoring Plan

The approved baseline and monitoring methodology “ACM0002”, “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, version 13.0.0 of 11/05/2012 [/10/](#) has been applied.

The monitoring plan is in accordance with the monitoring methodology; the monitoring plan will give opportunity for real measurement of achieved emission reductions.

RINA has checked all the parameters presented in the monitoring plan against the requirements of the methodology; no deviations relevant to the project activity have been found in the plan.

RINA confirms that the monitoring arrangements described in the monitoring plan are feasible within the project design, and the means of implementation of the monitoring plan are sufficient to ensure the emission reductions achieved by/resulting from the proposed GS project activity can be reported ex post and verified.

Parameters Determined Ex-ante

The ex-ante parameters that are mentioned in the methodology are included in the PDD and are provided in compliance with the methodology:

	Data/parameter	Unit	Value applied	Assessment
/1/	Operating Margin of Turkey National Grid (OM)	tCO ₂ e/MWh	0.626	The data used to determine the OM emission factor of the grid is obtained from “Electricity Generation & Transmission Statistics of Turkey, 2010” /78/, which is published by TEIAS. The validation team has confirmed that this is the most updated data at the time for submission for validation, which is considered as appropriate. The emission factors of fuels used in the calculations are based on IPCC default values at the lower limit of uncertainty at a 95% confidence interval as provided in table 1.4 of Chapter 1 of Volume 2 of the 2006 IPCC Guidelines on National GHG Inventories /48/, which is in line with the methodological tool, and considered as appropriate.
/2/	Build Margin of Turkey National Grid (BM)	tCO ₂ e/MWh	0.478	The data used to determine the OM emission factor of the grid is obtained from “Turkish Electrical Energy 10-Year Generation Capacity Projection (2011-2020)” /79/, which is published by TEIAS. The validation team has confirmed that this is the most updated data at the time for submission for validation, which is considered as appropriate. The net energy conversion efficiency of power unit are taken from Annex 1 of the “Tool to calculate the emission factor for an electricity system” which is deemed reasonable. The emission factors of fuels used in the calculations are based on IPCC default values at

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				the lower limit of uncertainty at a 95% confidence interval as provided in table 1.4 of Chapter 1 of Volume 2 of the 2006 IPCC Guidelines on National GHG Inventories /48/ , which is in line with the methodological tool, and considered as appropriate.
/3/	Combined Margin of Turkey National Grid (CM)	tCO ₂ e/MWh	0.552	The emission factor is calculated as a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the tool /12/ .

Parameters Monitored Ex-post

The ex-post parameters that are mentioned in the methodology are included in the PDD and are provided in compliance with the methodology, and they will be monitored during the crediting period:

	Parameter	Description/Assessment
/1/	EG _{facility,y} (MWh/y)	The quantity of electricity supplied and delivered to the grid by the project in year y Generation data will be recorded by two metering devices continuously. These records will provide the data for the monthly invoicing to TEIAS. Generation will be recorded via remote reading system. This record will form the basis for monthly invoicing. The electricity generation of the plant will be crosschecked with PMUM records. Net electricity generation will be measured by two meters (main and backup). The meters will comply with EMRA (Energy Market Regulatory Authority) regulation /49/. Since the meters have not been sold yet, the accuracy class is not defined. However, the accuracy class of the meters will be 0.2s or 0.5s depending on the capacity of circuit as per the "Communiqué for Measurement Devices used in the Electricity Market" /80/ as explained in the PDD /1/. The maintenance and calibration of meters are under TEIAS responsibility. If any major discrepancy occurs between the two meters, TEIAS performs necessary calibration.
/2/	Cap _{PJ} (W)	Installed capacity of the hydro power plant after the implementation of the project activity The parameter will be monitored yearly through the equipment agreement or project license.
/3/	A _{PJ} (m ²)	Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full The parameter is measured from topographical surveys or maps. Maximum area is already calculated given as a map /63/. Annual measurements are not expected to be higher than this value.

Sustainability Monitoring Plan

	Parameter	Description/Assessment
/1/	SO ₂ and NO _x emissions from grid connected plants	The reductions of SO ₂ and NO _x emissions are monitored annually by calculation.
/2/	Number of effected	Project activity should not have any negative impact on fauna and

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	species	flora. The parameter will be monitored once after construction through the expert report.
/3/	Number of certificates issued/trainings provided	All relevant staff employed by project owner to be trained for Health and safety issues and relevant staff should be certified for working at high voltage environment. The parameter will be monitored yearly through review employment records and training documents/certificates.
/4/	Currency saving due to avoided fuel import	Amount of avoided natural gas to be imported will be monitored annually by calculation.
/5/	Amount of water released	Flow regime of the channel will be operated according to water usage agreement with DSI. The parameter will be monitored once after construction is completed through site assessment and interviews with locals.
/6/	Payments made to staff	The project will create new job opportunities. The parameter monitored annually through the pay checks and other employment documents.
/7/	Storage of excavation	Excavation will be stored appropriately and will be placed on top of present landscape. The parameter will be monitored once after the construction is completed through site visits and pictures taken on site.
/8/	Afforestation	Suitable places around the project site will be afforested as a mitigation measure against impacts on flora. The parameter will be monitored once after the construction is completed through site visits, pictures taken on site or interviews with locals.
/9/	Noise and dust pollution	Noise and dust emissions management is being carried out as per the regulations and commitments. The parameter will be monitored once after the construction is completed through site visits, pictures taken on site or interviews with locals.
/10/	Solid waste and waste oil treatment	Waste oil will be collected and stored under confined conditions and as per regulations. Residential wastes and solid wastes due to daily operation of the personnel will also be stored in containers under confined conditions. The parameter will be monitored yearly by checking service receipts or operation logs.

Management System and Quality Assurance

The electricity generation and consumption is measured in line with the TEIAS rules and requirements. The generated electricity fed to grid will be measured and recorded by two meters, which will be sealed by TEIAS. Two meters will be installed, the main meter is used for monitoring, and the secondary meter is used for comparison and back-up purposes. Net electricity generation will be measured and recorded by both TEIAS and project owners for billing purposes therefore no new additional protocol will be needed for monitoring emission reduction. Accounting Manager, will be responsible for the electricity generated, gathering all relevant data and keeping the records.

The electricity generation supplied to the grid and electricity consumption from the grid is stored by PMUM on the web site. The Project owner has a password to access this data on the web site. As indicated in the PDD [/1/](#), the monitored data will be kept for two years after the end of the crediting period or the last issuance of VERs in line with the methodology [/10/](#).

3.11 Estimation of GHG emissions

The emission reduction ER_y by the proposed project activity during the crediting period is the difference between baseline emissions (BE_y), project emission (PE_y) and emissions due to leakage (L_y) as follows.

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Baseline Emissions

The baseline emissions (BE_y in tCO_2e) are the product of the baseline emission factor ($EF_{grid,CM,y}$ in tCO_2e) times the net electricity supplied by the project activity to the grid ($EG_{facility,y}$ in MWh). The baseline emission factor for the project activity is determined ex-ante as a combined margin (CM) consisting of the combination of operating margin (OM) and build margin (BM) according the methodological "Tool to calculate the emission factor for an electricity system" [/12/](#).

The OM is calculated to be tCO_2e/MWh 0.626 and the BM is calculated to be tCO_2e/MWh 0.478. The combined grid emission factor of the grid is determined ex-ante for the seven years crediting period and it has been calculated as weighted average ($w_{OM} = 0.5$ and $w_{BM} = 0.5$) of the operating margin emission factor and the build margin emission factor. The combined margin emission factor is calculated as $0.552 tCO_2e/MWh$, and the net electricity supplied by the project activity to the grid is estimated to be 89,558 MWh/year.

The annual baseline emissions generated by the project activity is calculated to be 49,436 $tCO_2e/year$.

Project Emissions

For the hydro power plants, if the power density of the project activity (PD) is greater than $10 W/m^2$, project emissions are neglected in line with the ACM0002 [/10/](#).

The power density of the project activity (PD) is calculated as follows;

$$PD = (Cap_{PJ} - Cap_{BL}) / (A_{PJ} - A_{BL})$$

Where:

PD = Power density of the project activity (W/m^2)

Cap_{PJ} = Installed capacity of the hydro power plant after the implementation of the project activity (W)

Cap_{BL} = Installed capacity of the hydro power plant before the implementation of the project activity (W). For new hydro power plants, this value is zero

A_{PJ} = Area of the single or multiple reservoirs measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (m^2)

A_{BL} = Area of the single or multiple reservoirs measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m^2). For new reservoirs, this value is zero.

$PD = (17,580,000 - 0) / (10,091.016 - 0) = 1,742.14 W/m^2$. The power density of the project activity (PD) is greater than $10 W/m^2$.

Leakage

The main emissions potentially giving rise to leakage in the context of electric sector projects are emissions arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g. extraction, processing, and transport). Therefore, the leakage emissions are neglected as per ACM0002, version 13.0.0 of 11/05/2012 [/10/](#).

Emission Reductions

The emission reductions (ER_y) are calculated as the following formula:

$$ER_y = BE_y - PE_y - LE_y$$

$$ER_y = BE_y$$

$$= 49,436 tCO_2e/year$$

The annual emission reductions generated by the project activity is calculated to be 49,436 $tCO_2e/year$ over the selected seven years renewable crediting period.

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The estimation of the emission reductions can be replicated using the data and parameter values provided in the PDD [/1/](#) and supporting files [/6/](#) [/67/](#). The data sources mentioned have been verified by RINA and confirms that the GHG emissions reduction calculation is complete and transparent, and the data accuracy has been verified.

3.12 Environmental Impacts

The project activity is environmentally licensed by the competent authority. Preliminary EIA Report [/25/](#) was prepared and submitted to the “Kayseri Governorship Environment and Forestry Directorate” in line with the domestic laws and regulations in Turkey. “Kayseri Governorship Environment and Forestry Directorate” have issued a Certificate of EIA Exemption dated 20/05/2013 [/23/](#) based on Preliminary EIA Report.

All the conducted assessments during the Preliminary EIA Report [/25/](#) shows that from this project activity there is no significant negative influence into environment and social area. The every kind of waste will be disposed as per the related regulation of Environmental Law.

3.13 Local stakeholder consultation

The local stakeholder consultation meeting was held on 26/01/2012 in line with the GS Requirements [/8/](#) [/9/](#) as confirmed through the GS Passport and LSC report and via interviews during the site visit. The LSC meeting was held prior to the start date of construction or implementation of the project activity.

The stakeholders were invited to LSC meeting by e-mail, fax and registered post. The meeting was also announced through local and national newspaper on 14/01/2012 as stated in the LSC Report [/3/](#). The local people, local authorities, local non-governmental organizations, Ministry of Environment and Urbanization, GS Local Representative, NGO supporters of the GS and local represent of GS are invited to the local stakeholder meeting in line with the GS Toolkit [/8/](#). Locals were identified considering settlements impacted by the project. The stakeholder comments received have been taken account as explained in the LSC Report [/3/](#). No negative comments have been received.

The stakeholder feedback round was held between 17/03/2017 and 23/05/2014. People could access to the documentation or information from the official website of GTE Carbon (Consultant company), www.gtecarbon.com.

The stakeholders, head of village and participants were invited to the Stakeholder Feedback Round via e-mails. International offices of Helios International, Mercy Corps, REEP, regional branches of WWF and REC and local representative of GS also included in the feedback round via email sent on 17/03/2014 as confirmed through the GS Passport [/2/](#). During the Stakeholder Feedback Round, no comment was received from stakeholders.

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4 VALIDATION OPINION

RINA Services Spa (RINA) has performed validation of the project activity “Camlica II HEPP” in Turkey, with regard to the relevant requirements for GS VER activities.

The review of the project design document and the subsequent follow-up interviews have provided RINA with sufficient evidence to determine the fulfilment of the stated criteria.

The project correctly applies the approved baseline and monitoring methodology “ACM0002”, “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, version 13.0.0 of 11/05/2012.

By generating renewable energy from hydro power plant the project results in reduction of CO₂ emissions that are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the project is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

The total emission reductions from the “Camlica II HEPP” are estimated to be on average 49,436 tCO_{2e} per year over the selected 7 years renewable crediting period. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given that the underlying assumptions do not change.

The monitoring plan provides for the monitoring of the project's emission reductions and of the sustainable development indicators. The monitoring arrangements described in the monitoring plan are feasible within the project design and it is RINA's opinion that the project participants are able to implement the monitoring plan.

In conclusion, it is RINA's opinion that the project activity “Camlica II HEPP” in Turkey, as described in the PDD version 07 of 17/03/2015, Gold Standard Passport version 05 of 17/03/2015 meets all relevant UNFCCC requirements for the GS VER and all relevant host Party criteria and correctly applies the baseline and monitoring methodology “ACM0002”, “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, version 13.0.0 of 11/05/2012.

APPENDIX A

GOLD STANDARD VALIDATION PROTOCOL

TABLE 1 REQUIREMENTS CHECKLIST

Checklist Question		Reference	MoV ¹	Comments	Conclusion
A Description of Project Activity					
A.1 Title of the project activity					
A.1.1.	Does the used project title clearly enable the reader to identify the unique GS activity? Is there an indication of a revision number and the date of the revision.	/1/ /2/	DR, CC	The title of the project activity is defined as “Camlica-II HEPP” in the PDD version 01 of 19/09/2013 /1/ which is in line with the GS Passport /2/. However, the title given in the GS Registry is not in line with the PDD. The version and completion date of report are available in cover page of the PDD version 01 of 11/09/2013 /1/.	CR-1 OK
A.1.2	Does the project comply with the applicable requirements for completing the PDDs (latest version available)?	/1/ /15/	DR	“Clean Development Mechanism Project Design Document Form for Small-Scale CDM Project Activities (F-CDM-SSC-PDD) /15/, version 04.1” which is the latest version is applied with the PDD /1/. However, Section A.6 is not presented in the PDD and Section B.2 and D.2 is not in line with the F-CDM-SSC-PDD.	CAR-1 OK
A.1.3	Does the PDD comply with the template available (latest version)?	/1/ /15/	DR	The PDD version 01 /1/ is not complied with the latest version of “Clean Development Mechanism Project Design Document Form (F-CDM-PDD), version 04.1” /15/.	CAR-1 OK
A.2 Description of the proposed project activity					
A.2.1	Does the PDD contain an accurate description of the project activity and provide the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation? How was the design of the project assessed?	/1/	DR, CC, I	The project activity was designed as a 17.58 MWe capacity run-of-river type project which is built on river Zamanti. The expected annual generation is mentioned as 89.56 GWh in the PDD /1/ as confirmed through the Feasibility Report /20/ and Generation License /19/. The project activity consists of three Francis type turbines each with the capacity of 5.86 MWe and the total capacity of the project activity is 17.58 MWe which could be confirmed through the through the Generation License /19/.	OK
A.2.2	Does the project activity involve alteration of existing installations? If yes, have the differences between pre-project and post-project activity been clearly	/1/	DR	The project activity is a Greenfield project, which does not involve any alteration of existing installation as confirmed during the site visit.	OK

¹ MoV: DR document review, I interview, CC cross checking

Checklist Question	Reference	MoV ¹	Comments	Conclusion
	described in the PDD?			
A.2.3	Is all information provided consistent and in compliance with the actual situation or planning?	/1/ /19/	DR. I The PDD is consistent and in compliance with the planning situation. The project consists of 3 Francis turbines unit capacity of 5.86 MWe in the PDD /1/ as confirmed through the site visit and the generation license /19/ .	OK
A.2.8	Have the results of the sustainable development matrix been presented in the PDD?	/2/	DR The results of the sustainable development matrix and the justifications have been presented in the GS Passport /2/ .	OK
A.2.9	To which GS category(ies) does the project activity belong to? Is the category correctly identified and indicated?	/1/ /2/ /8/ /9/	DR The project activity is a large-scale project as the total installed capacity of the project activity is above the 15 MW as defined by the GS Requirements /8/ . The project activity is a GS VER project as indicated in the GS Passport /2/ . The proposed project activity is considered as a Renewable Energy Project. The project activity fits into the renewable energy supply category, as defined in the GS Toolkit version 2.2 of 01/06/2012 /9/ . The project activity is to install a hydro power plant to generate electricity and feed it into the public grid. The project fits into the renewable energy supply category.	OK
A.2.10	In case of hydro projects, do the items provided in Table C-2 of the GS Toolkit Annex C have been discussed? <i>(please make transparent the items discussed in the GS PDD).</i>	/1/ /9/	DR The project is a hydro power plant; hence, Table C.2 is not applicable as per the GS Toolkit /9/ .	OK
A.3 Project participants				
A.3.1	Have the Parties and project participants participating in the project been listed in tabular form in Section A.3 and are they consistent with the information detailed in Annex 1 of the PDD?	/1/	DR The project participants; Derin Enerji Üretim San. Ve Tic. AŞ and Global Tan Energy Ltd have been listed in tabular form in cover page of the PDD, Section A.4 and Appendix 1.	OK
A.3.5	Have all private/public project participants been authorized by a Party to the Kyoto Protocol?	/1/	DR As the proposed project activity is a GS VER project, the validation of participation requirement for CDM/JI is not required.	OK
A.4 Technical description of the project				
A.4.1	Does the information provided on the location of the project activity allow for a clear identification of the site(s)?	/1/ /2/ /25/	DR The project is within boundaries of Kayseri Province of Turkey, located at near Yahyalı District. The boundaries of the hydro power plant which are	OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
	Are the latitude and longitude of the site indicated (decimal points)?			presented in the GS Passport /2/ and PDD /1/ is line with the Project Introduction File /25/. Also, the coordinates for all turbines are presented in the PDD /1/ and GS Passport /2/.	
A.4.2	Is the category(ies) of the project activity correctly identified?	/1/	DR	The category of the project activity is identified correctly in the PDD version /1/. The project activity is a hydro power plant and considered as a Renewable Power Generation Project. The sectorial scope is "1 Energy Industries (Renewable/non-renewable sources)" as defined in cover page of the PDD /1/.	OK
A.4.3	Does the project design engineering reflect current good practices? Would the technology result in a significantly better performance than any commonly used technologies in the host Country? Is any transfer of technology from any Annex I Party involved?	/1/	DR	The project activity is a voluntary emission reduction project, which is developed under Gold Standard; hence, the transfer of technology from any Annex I Party is not applicable.	OK
A.4.4	What is the expected operational lifetime of the project activity? Is it reasonable?	/1/ /19/	DR	The expected operational lifetime of the project is defined as 45 years in the PDD. However, it is presented as 47 years 2 months and 6 days in the Generation License /19/. Please clarify. The turbine technical lifetime is defined as 29 years in the PDD /1/. However, it could not be confirmed since technical brochure of the turbines was not provided to the validation team.	CR-2 OK
A.5 Public funding					
A.5.1	Does the information on public funding provided conform to the actual situation or planning as presented by the PPs?	/1/ /2/	DR, I	The project activity is not used public funding for the financing of the project as confirmed via interviews.	OK
A.5.2	If public funding from Parties included in Annex I is used for the project activity, have these Parties provided an affirmation that such funding does not result in a diversion of official development assistance and is separate from and is not counted towards the financial obligations of these Parties?	/1/ /2/	DR, I	As confirmed by the PP during the on-site visit no public funding from Parties is used for the project activity. The project activity doesn't benefit from any public funding or Official Development Aid (ODA). Also PP has signed ODA Declaration of non-use of Official Development Assistance by Derin Enerji Uretim San. ve Tic. A. S on 09/02/2012.	OK
A.5.3	Is the ODA Declaration available and submitted to the GS Board as per the Annex D of the GS Toolkit?	/1/ /2/	DR	The project activity doesn't benefit from any public funding or Official Development Aid (ODA). Also PP has signed	OK

Checklist Question		Reference	MoV ¹	Comments			Conclusion
				ODA Declaration of non-use of Official Development Assistance by Derin Enerji Uretim San. ve Tic. A. S on 09/02/2012.			
B. Application of a baseline and monitoring methodology							
B.1 Methodology applied							
B.1.1	Does the project activity apply an approved methodology and the correct version thereof?	/1/ /10/	DR	The proposed project activity applies “ACM0002”. “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, version 13.0.0 of 11/05/2012” /10/ as indicated in the PDD /1/.			OK
B.1.2	Is there any specific guidance, including the methodological tools provided by EB and has these guidance been applied?	/1/ /10/ /11/ /12/	DR	The following tools are applied: 1. Tool to calculate the emission factor for an electricity system (Version 03.0.0) /12/. 2. Tool for the demonstration and assessment of additionality (Version 07.0.0) /11/. However, in Section Step 4 “Common Practice Analysis”, it is referred version 06.0.0 for the tool for demonstration and assessment of additionality.			CAR-2 OK
B.1.3	How was it validated that the project activity complies with the applicability criteria?	/1/ /19/	DR, I	Applicability criteria	Project activity	Criteria are met?	CAR-3 OK
				1. This category comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass that supply electricity a) to a national or a regional grid. (b) Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.	The proposed project is a run-of-river hydroelectric power plant as confirmed through the on-site observation and generation license /19/. The generated electricity is fed to the national grid of Turkey. However, it could not be confirmed since the System Connection	CAR 3	

Checklist Question	Reference	MoV ¹	Comments	Conclusion
			Agreement is not provided to the validation team.	
			2. Illustration of respective situations under which each of the methodology (i.e. AMS-I.D, AMS-I.F and AMS-I.A) applies is included in Table 2 of the AMS-I.D.	The generated electricity is fed to the national grid of Turkey. However, it could not be confirmed since the System Connection Agreement is not provided to the validation team.
			3. This methodology is applicable to project activities that: (a) Install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant)	OK
			4. Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology: • The project activity is implemented in an existing reservoir with no change in the volume of reservoir; • The project activity is implemented in an existing reservoir, where the volume of reservoir	The project activity results in new reservoirs. However, the power density of the power plant was not discussed in the PDD.

Checklist Question	Reference	MoV ¹	Comments	Conclusion
			is increased and the power density of the project activity, as per definitions given in the project emissions section, is greater than 4 W/m ² ;	
			The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, is greater than 4 W/m².	
			Combined heat and power (co-generation) systems are not eligible under this category.	OK
			In the case of project activities that involve the addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.	OK
			In the case of retrofit or replacement, to qualify as a small-scale project, the total output of the retrofitted or replacement unit shall not exceed the limit of	OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
				15 MW.	
B.1.4	Is the selected baseline one of the baseline(s) described in the methodology and this hence confirms the applicability of the methodology?	/1/ /10/	DR	The baseline scenario for the project activity involves the installation of a new grid-connected renewable power plant is already defined in the approved methodology ACM0002 version 13 /10/.	OK
B.2 Project boundary					
B.2.1	Is the project boundary are clearly defined and in accordance with the applied methodology?	/1/ /10/	DR	The project boundary is clearly defined and in accordance with the methodology ACM0002 version 13 /10/ which indicates that the project boundary is the spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the project is connected to.	OK
B.2.2	What are the project's system boundaries (components and facilities used to mitigate GHGs)?	/1/ /19/	DR	The project has three turbines according to the generation license /19/. Also the project boundary consists of the physical project area components which are diversion weir and powerhouse. However, it is not discussed in the "Project Boundary", in the VCS PD /1/.	CR-3 OK
B.2.3	Which sources are identified for the project? Does the identified project boundary cover all possible sources linked to the project activity?	/1/ /10/	DR	Project boundary is identified the VCS PD /1/ for baseline and project activity. The source of baseline emission, CO2 emissions are included in baseline calculation since fossil fuels fired for electricity generation. CH4 and N2O emissions are neglected according to the methodology. It is mentioned in the VCS PD that project emissions are neglected regarding to the methodology /10/ since the project activity does not cause any significant emissions. However, the project activity includes a reservoir area. Please refer B.5.2 of this validation protocol.	CAR-13 OK
B.2.4	In case of grid connected electricity project: is the relevant grid correctly identified in accordance with the latest version of tool to calculate emission factor of electricity system and the underlying methodology?	/1/	DR	The geographic and system boundaries for the relevant electricity grid can be clearly identified and information on the characteristics of the grid is available in the PDD /1/	OK
B.2.5	Does the project involve other emissions sources not foreseen by the methodologies that may question the applicability of the methodology? Do these sources contribute by more than 1% to the estimated emission	/1/ /10/	DR	The project does not involve other emission sources not foreseen by the methodology, which contribute by more than 1% (e.g. back up diesel generators).	OK

Checklist Question	Reference	MoV ¹	Comments	Conclusion	
reductions of the project?					
B.3 Identification of the Baseline Scenario					
B.3.1	Which baseline scenarios have been identified? Is the list of the baseline scenarios complete? Does the PDD follow the steps to determine the baseline scenario required by the methodology/tool?	/1/ /10/	DR	The baseline scenario for the project activity is already defined in the applied methodology.	OK
B.3.2	How have the other baseline scenarios been eliminated in order to determine the baseline?	/1/ /10/	DR	The baseline scenario for the project activity is already defined in the applied methodology.	OK
B.3.3	What is the baseline scenario? Is the determination of the baseline scenario in accordance with the guidance in the methodology?	/1/ /10/	DR	The baseline scenario for the project activity is already defined in the applied methodology.	OK
B.3.4	Has the baseline scenario been determined using conservative assumptions? Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies (E+ / E-), macro-economic trends and political aspirations?	/1/ /10/	DR	The baseline scenario for the project activity is already defined in the applied methodology.	OK
B.4 Additionality					
B.4.1	What tool does the project use to assess additionality? Is this in line with the methodology?	/1/ /11/	DR	Tool for demonstration and assessment of additionality version 07.0.0 is applied in line with the methodology. However, in Section Step 4 “Common Practice Analysis”, it is referred version 06.0.0 for the tool for demonstration and assessment of additionality.	CAR-2 OK
B.4.2	What is the project additionality mainly based on?	/1/ /11/	DR	The project additionality is mainly based on investment barrier analysis.	OK
B.4.3 Prior consideration					
B.4.3.1	What is the starting date of the proposed project activity? Is it in accordance with the CDM Glossary of Terms?	/1/	DR, CC, I	The starting date of the project activity is defined as 08/08/2011 date of construction subcontractor agreement in the PDD /1/.	OK
B.4.3.2	Is the project activity a new project activity or existing project?	/1/	DR, I	The project activity is a new project activity as confirmed during the site visit.	OK
B.4.3.3	Does the timeline of the project confirm that continuous actions in parallel with the implementation were taken to secure project status? Please specify the gap between the documented evidences.	/1/	DR	The project has the timeline to confirm the continuous actions in parallel with the implementation were taken to secure project status. However, start of the construction date and the expected commissioning date are not in line with the real situation. Start of the construction date is	CAR-4 OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
				01/05/2012 as confirmed through the delivery record /46/. In addition, Expected Commissioning Date is defined as 15/04/2013 in the milestone. However, the site visit was conducted on 21/02/2013 and it has been observed during on site visit that the construction has not been finished yet. Therefore, the date should be revised.	
B.4.4 Investment analysis					
B.4.4.1	What is the analysis method used to determine whether the proposed project activity is not (a) the most economically or financially attractive; or (b) economically or financially feasible, without the revenue from the sale of certified emission reductions?	/1/ /4/	DR	The PP demonstrated the additionally of the project activity by applying Benchmark Analysis (Option III) of investment analysis of the methodological tool. This is appropriate since the project generates financial and economic benefits through the sales of electricity generating other than Voluntary Emissions Reduction (VER) related income (thus the "Simple Cost Analysis" is not applicable) and the baseline scenario is "generation of electricity by the grid" for which no investment is require and no alternative investment is considered; hence "Investment Comparison Analysis" is not applicable. However, the Methodologies, Tools and Guidelines used are not quoted in the PDD with their titles and version numbers.	CR-4 OK
B.4.4.2	What the financial indicator is used?	/1/ /4/ /11/ /55/	DR, CC	As per the PDD version 01 dated 11/09/2013 /1/, the financial indicator used by the Project Proponent is equity IRR calculated after taxes, according to the requirements of the "Tool for the Demonstration and Assessment of Additionality" /11/. The benchmark indicator has been selected as the equity IRR, and the threshold value of the benchmark indicator has been established as 15%, based on World Bank loan appraisal document /55/. The analysis is conducted in real terms. However, in Section B5. Sub-step 2c - Choice of financial indicator (equity IRR) is not justified properly in accordance with the benchmark chosen. Please justify why Equity IRR is applied. Please also clarify IRR is calculated before or after taxes.	CAR-5 OK
B.4.4.3	If a benchmark is used, is it ensured that it is selected	/1/ /4/ /11/	DR,	The benchmark used is derived according to the	CAR-5

Checklist Question		Reference	MoV ¹	Comments	Conclusion																		
	in accordance with the requirements of the EB guidelines and it represents standard returns in the market? Is the benchmark suitable for the type of financial indicator presented? Is it ensured the any risk premiums applied in determining the benchmark reflect the risks associated with the project type or activity?	/55/	CC	requirements of the “Tool for the Demonstration and Assessment of Additionality (ver.07.0.0) /11/. The source used to determine the benchmark is the World Bank loan appraisal document /55/. The benchmark is suitable for the type of financial indicator presented (equity IRR). No risk premiums have been applied. However, please see Section B.4.4.2 of this protocol.	OK																		
B.4.4.4	Is the investment analysis carried out in accordance with specific guidance from EB? Is the investment analysis complete and accurate? Is the investment analysis provided in a spreadsheet version? Are all the formulas used readable and all relevant cell be viewable and unprotected?	/1/ /4/ /54/	DR, CC	The Investment analysis is carried out according to the requirements of EB62, Annex 5: Guidelines on the Assessment of Investment Analysis”, Version 05 /54/. The Investment analysis is complete and accurate and is presented in a spreadsheet version 01 (filename: Camlica II Financial Model_20082013 44 license period after tax_loan.xlsx), /4/. All formulas used are readable and all relevant cells are viewable and unprotected.	OK																		
B.4.4.5	Cross-check the parameters used in the financial analysis against third party or publicly available sources (all parameters used as input values shall be cross-checked and assessed).	/1/ /4/ /19/ /20/ /27/ /28/ /29/ /30/ /31/ /32/ /33/ /34/ /38/ /39/ /40/	DR, CC	The PP has used the following input parameters in the Investment analysis: <table><tr><td>Installed Capacity</td><td>MWe</td><td>17.58</td></tr><tr><td>Grid Connected output</td><td>MWh/y</td><td>89.56</td></tr><tr><td>Capital Investment</td><td>Million \$</td><td>31.4</td></tr><tr><td>Income tax rate</td><td>%</td><td>20</td></tr><tr><td>Tariff</td><td>\$/kWh</td><td>7.3</td></tr><tr><td>O&M Cost</td><td>\$/Year</td><td>3,321,000</td></tr></table> Assessment: The installed capacity of 17.58 MWe was assessed by studying the Generation License of 09/02/2011 /19/. The capacity listed there was set as 17.85 MWm and 17.58 MWe which corresponded to the value used for the Investment analysis. The same value was used in the Feasibility Study Report, dated March, 2011 /20/. Those values have been available and valid at the Time of the Investment Decision Taking (25/07/2011). The Grid Connected Output of 89.56 MWh/y was assessed by studying the Generation License of	Installed Capacity	MWe	17.58	Grid Connected output	MWh/y	89.56	Capital Investment	Million \$	31.4	Income tax rate	%	20	Tariff	\$/kWh	7.3	O&M Cost	\$/Year	3,321,000	CAR-6 OK
Installed Capacity	MWe	17.58																					
Grid Connected output	MWh/y	89.56																					
Capital Investment	Million \$	31.4																					
Income tax rate	%	20																					
Tariff	\$/kWh	7.3																					
O&M Cost	\$/Year	3,321,000																					

Checklist Question	Reference	MoV ¹	Comments	Conclusion																
			09/02/2011 /19/. The output listed there was set as 89.556 MWh/y which corresponded to the value used for the Investment analysis. The same value was used in the Feasibility Study Report, dated March, 2011 /20/. That value has been available and valid at the Time of the Investment Decision Taking (25/07/2011) Capital investment of 31.4 Mln. US\$. The capital investment includes several sub-items, listed in the Equity IRR calculation tables as follows: <table><tr><td>CONSTRUCTION WORKS</td><td>12 831,969</td></tr><tr><td>ELECTROMECHANICAL HARDWARE</td><td>11 602,500</td></tr><tr><td>ENERGY TRANSMISSION WORKS</td><td>249,345</td></tr><tr><td>EXPROPRIATION & PUBLIC WORKS</td><td>311,682</td></tr><tr><td>GENERAL EXPENSES</td><td>2 468,381</td></tr><tr><td>ENGINEERING & CONSULTANCY</td><td>2 715,220</td></tr><tr><td>INTEREST DURING CONSTRUCTION</td><td>1 211,451</td></tr><tr><td>TOTAL (Ex. VAT)</td><td>31 390,548</td></tr></table> In order to assess those expenses the audit team studied the FSR dated March 2011 and prepared by a third company (Eser Proje ve Muhendislik A.S.) /20/. The estimated expenses were confirmed. The audit team has also crosschecked the estimated values by studying the contracts and agreements for supply of services, consultancy and delivery of equipment, presented by the PP, namely: • Tandogan Hukuk Burosu: Advocacy and Legal Consultancy Agreement of 22/08/2011 /27/ • Turkay Enerji Müsavirlik Elektrik Mak. Ins. Proje Tesis Ltd. Sti.: Technical Consultancy Contract for Usage of System Connection of 17/10/2011 /28/ • Mert Kopyalama Ofis Kirtasiye Bilgisayar ve Tic. Ltd.Sti.: Stationery Agreement of 10/10/2011 /29/ • Ekoplan Muhendislik Danismanlik Ltd. Sti.: Service Contract of 24/05/2011 /30/ • EMD Enerji Merkezi Danismanlik Insaat Sanayi ve Ticaret Ltd. Sti.: Electromechanical and Hvdro	CONSTRUCTION WORKS	12 831,969	ELECTROMECHANICAL HARDWARE	11 602,500	ENERGY TRANSMISSION WORKS	249,345	EXPROPRIATION & PUBLIC WORKS	311,682	GENERAL EXPENSES	2 468,381	ENGINEERING & CONSULTANCY	2 715,220	INTEREST DURING CONSTRUCTION	1 211,451	TOTAL (Ex. VAT)	31 390,548	
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INTEREST DURING CONSTRUCTION	1 211,451																			
TOTAL (Ex. VAT)	31 390,548																			

Checklist Question	Reference	MoV ¹	Comments	Conclusion												
			Mechanical Equipment Quality and Process Management Agreement of 20/08/2011 /31/ • EMR Danismanlik Ltd. Sti.: Consulting Services Contract Regarding the Preparation of Investment Incentive Certificate of 20/09/2011 /32/ • Eser Proje ve Muhendislik A.S.: Engineering Services Contract of 25/05/2011 /33/ • Jemas-Su Yeraltisulari Etud ve Muhendislik Ltd. Sti.: Basic Research Drilling and Geological and Geotechnical Surveys Agreement of 01/05/2011 /34/ • Dolsar Muhendislik Ltd. Sti.: Consulting Services of 12/07/2011 /38/ • TCT Insaat Madencilik Sanayi Ticaret Ltd. Sti. and Derin Enerji Uretim Sanayi ve Ticaret A.S.: Procurement and Construction Contract of 08/08/2011 /40/ • Cinar Muhendislik Musavirlik A.S.: Environmental Consultancy Agreement of 22/08/2011 /39/ Income tax rate of 20%. The value has been assessed and confirmed by studying the website of the Union of Financial Councillors and Accountants of Turkey /46/. The electricity tariff of 7.3 \$c/KWh as well as the variations of the tariff in time has been assessed and confirmed by studying the website of the Turkish Energy Market Regulatory Authority /47/, Market Settling and Balancing Center /48/and TEIAS (Turkish Electric Authority) /49/. O&M costs of 3,321,000 US\$/year. The value has been crosschecked by studying the FSR /20/. The annual O&M costs consist of: <table><tr><td>Grid fee –</td><td>125,000 \$</td></tr><tr><td>Maintenance –</td><td>173,000 \$</td></tr><tr><td>Insurance –</td><td>94,000 \$</td></tr><tr><td>Contribution fee –</td><td>2,512,000 \$</td></tr><tr><td>Staff contingency –</td><td>417,000 \$</td></tr><tr><td>TOTAL –</td><td>3,321,000 \$/y</td></tr></table>	Grid fee –	125,000 \$	Maintenance –	173,000 \$	Insurance –	94,000 \$	Contribution fee –	2,512,000 \$	Staff contingency –	417,000 \$	TOTAL –	3,321,000 \$/y	
Grid fee –	125,000 \$															
Maintenance –	173,000 \$															
Insurance –	94,000 \$															
Contribution fee –	2,512,000 \$															
Staff contingency –	417,000 \$															
TOTAL –	3,321,000 \$/y															

Checklist Question	Reference	MoV ¹	Comments	Conclusion
			The values have also been crosschecked by the available documents, presented by the PP, namely: TCT Insaat Madencilik Sanayi Ticaret Ltd. Sti. and Derin Enerji Uretim Sanayi ve Ticaret A.S.: Procurement and Construction Contract of 08/08/2011 /62/ General Directorate Of State Hydraulic Works and Derin Enerji Uretim Sanayi Ticaret A.S.: Water Utilization Agreement of 03/01/2011 /24/ Turkiye Is Bankasi A.S.: Insurance Brokerage Operating Principles of Consultation and Cooperation Protocol of 10/08/2011 /35/. However, the value of the main equipment depreciation period listed in the PDD is not consistent with the value used in the equity IRR calculation sheet. Evidences for the following expenses need to be presented: • Electromechanical hardware • Energy transmission works • Expropriation and public works • General expenses • Maintenance expenses • Loan agreement with information for the size of the loan, interest rate, loan period, grace period or justification of all parameters based on wide-spread practice. • Evidence/justification of the operation expenses – staff costs, etc.	
B.4.4.6	Are the input values used in the investment analysis valid and applicable at the time of the investment decision taken by the PP?	/1/ /4/ /19/ /20/ /40/	DR, CC The investment decision date is defined as 27/07/2011 which is the date of signing the Bank Loan Agreement. /65/. The investment analysis is based on data presented in the Energy Generation License /19/ dated 09/02/2011 and the FSR /20/ dated March 2011 and has been valid and applicable at the time of investment decision taking. However, currency rates used in the IRR calculation sheet are not at the time of the investment decision taking	CR-5 OK

Checklist Question	Reference	MoV ¹	Comments	Conclusion
B.4.4.7	Where applicable, the PFL has been defined ex-ante according to the applicable EB guideline?	/1/ /4/ /19/ /20/	DR, CC The PLF is defined ex-ante in line with EB48, Annex 11, 3b – The plant load factor determined by a third party contracted by the project participants (e.g. an engineering company); The PLF of 58.22% which corresponds to annual electricity generation of 89,558 MWh is calculated by the company Eser Proje ve Muhendeslik A.S. /20/ and is confirmed in the Generation License /19/ issued to the project.	OK
B.4.4.8	Does the time period of the investment analysis reflect the expected operation of the underlying project activity (technical lifetime)?	/1/ /4/ /19/	DR The generation license /19/ is issued for 89,558 MWh/year which means 58.22% load factor. The default operation hours of the water turbines are 150,000 which mean that the lifetime of the turbine equipment is ~29 years. The equity IRR is calculated for a period of 44 years of operation which means that the turbines have to be replaced after 29-30 years and that cost of the new equipment has to be included in the cash-flow. Or the equity IRR has to be calculated for 30 years and the fair value of the equipment has to be included in the positive cash-flow. The fair value has to be calculated only on the mechanical equipment (metal) and not taking into consideration the constructions. In any case 44 years is a too long period for calculating the IRR.	CAR-7 OK
B.4.4.9	Does the fair value of the project activity assets is included at the end of the assessment period as a cashflow in the final year? Is the fair value calculated in accordance with local accounting regulations where available or international best practice?	/1/ /4/ /19/	DR Please refer to Section B.4.4.8 of this protocol. In addition, the depreciation values are not calculated properly throughout the years of operation in the presented IRR calculation sheet /4/ – the mechanical equipment is fully depreciated after the 25 th year.	CAR-7 CAR-8 OK
B.4.4.10	Does the income tax calculation take depreciation into account? Is the depreciation year in accordance with normal accounting practice in the Host Country	/1/ /4/ /19/	DR The depreciation is taken into account. However, please see Section B.4.4.9 of this protocol.	CAR-7 CAR-8 OK
B.4.4.11	Sensitivity analysis: have the key parameters contributing to more than 20% of the revenue/costs during operating or implementation been identified?	/1/ /4/	DR The parameters assessed in the PDD are: - Investment costs – this parameter constitutes ~100% of the total costs - Operating costs – this parameter constitutes ~100% of the operation expenses.	OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
				- Tariff – this parameter is related to the electricity sales revenue in the same rate as the electricity production and represents ~100 % of the revenues. - Electricity production – this parameter is related to the electricity sales revenue in the same rate as the electricity tariff and represents ~100 % of the revenues. The parameters chosen for variation contribute to more than 20% of the revenues/costs.	
B.4.4.12	Sensitivity analysis: is the range of variations is reasonable in the project activity? The main parameters can be changed for the different project category.	/1/ /4/ /54/	DR	The range of variations is +/- 15 % which is reasonable for the proposed project activity and is in line with the “Guidelines on the Assessment of Investment Analysis”, Version 05 /54/. However the table with variations of +/- 15 % is not consistent with the explanatory text in the PDD. There is no analysis of the results compared to the benchmark of 15%.	CAR-9 OK
B.4.4.13	Have the key parameters been varied to reach the benchmark and the likelihood of this happening been justified to be small?	/1/ /4/	DR	The parameters in the sensitivity analysis are not varied to reach the benchmark and the possibility of this not happening is not discussed.	CAR-10 OK
B.4.5 Barrier analysis					
B.4.5.1	Are the barriers identified complimentary to a potential investment analysis?	/1/ /11/	DR	Barrier analysis is not applied as the additionality of the proposed project activity is demonstrated through investment analysis, which is in line with the methodological tool “Tool for the demonstration and assessment of additionality”.	OK
B.4.5.2	How were the investment barriers assessed to be real?	/1/ /11/	DR	Please refer to Section B.4.5.1 of this validation protocol.	OK
B.4.5.3	How were the other barriers assessed to be real?	/1/ /11/	DR	Please refer to Section B.4.5.1 of this validation protocol.	OK
B.4.5.4	Barriers due to prevailing practice (First of its kind): does the project apply measures currently covered in the framework (fuel and feedstock switch, switch of technology with or without change of energy source, methane destruction, methane formation avoidance)?	/1/ /11/	DR	Please refer to Section B.4.5.1 of this validation protocol.	OK
B.4.5.5	Barriers due to prevailing practice (First of its kind): do	/1/ /11/	DR	Please refer to Section B.4.5.1 of this validation protocol.	OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
	the technologies deliver the same output and differ by at least of energy source/fuel, feed stock, size of installation?				
B.4.5.6	Barriers due to prevailing practice (First of its kind): does the applicable geographical area is in compliance with the definition as per the EB guideline?	/1/ /11/	DR	Please refer to Section B.4.5.1 of this validation protocol.	OK
B.4.5.7	Is the project activity prevented by the identified barriers and at least one of the possible alternatives to the project activity is feasible under the same circumstances?	/1/ /11/	DR	Please refer to Section B.4.5.1 of this validation protocol.	OK
B.4.5.8	How the GS can alleviate the identified barriers?	/1/ /11/	DR	Please refer to Section B.4.5.1 of this validation protocol.	OK
B.4.6 Common practice analysis					
B.4.6.1	Does the project apply measures currently covered in the framework (fuel and feedstock switch, switch of technology with or without change of energy source, methane destruction, methane formation avoidance)?	/1/ /11/	DR	The project does apply the measures described in the “Tool for the demonstration and assessment of additionality”/11/.	OK
B.4.6.2	Do the technologies deliver the same output and differ by at least of energy source/fuel, feed stock, size of installation, and investment climate in the date of the investment decision, other features?	/1/ /11/	DR	According to the PDD version /1/, 61 projects are defined in the applicable power installation range of 7.7 MWe to 23.1 MW, N _{all} =37 projects are identified as similar and N _{diff} = 34 projects are identified as different. However, they could not be justified since it is not reproducible. All the projects given in TEIAS web-site are not listed in the excel sheet to give a clear definition to filter. Also, please clarify why step-1 (+/-50%) is calculated with the previous capacity of 15.4 MW.	CAR-11 OK
B.4.6.3	Does the applicable geographical area is in compliance with the definition as per the EB guideline?	/1/ /11/	DR	The common practice is applied for whole country. The definition is in line with the definition as per “Tool for the demonstration and assessment of additionality”/11/.	OK
B.4.6.4	How many similar non-CDM-projects exist in the region within the scope?	/1/ /11/	DR	According to the PDD version /1/, 61 projects are defined in the applicable power installation range of 7.7 MWe to 23.1 MW, N _{all} =37 projects are identified as similar and N _{diff} = 34 projects are identified as different. Please refer to Section B.4.6.2 of this validation protocol.	CAR-11 OK
B.4.6.5	What is the data source(s) used for the common	/1/ /10/	DR	The common practice is based on data of Energy Market	OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
	practice analysis?			Regulatory Authority.	
B.4.7 Do No Harm Assessment					
B.4.7.1	Does the project respects internationally proclaimed human rights including dignity, cultural property and uniqueness of indigenous people? Does the project is not complicit in Human Rights abuses?	/2/ /8/ /9/ /43/	DR, CC	The project respects internationally proclaimed human rights including dignity, cultural property and uniqueness of indigenous people. The project is not complicit in Human Rights abuses. Turkey has ratified the “Universal Declaration of Human Rights” /43/ .	OK
B.4.7.2	Does not the project involve and is not complicit in involuntary resettlement?	/2/ /8/ /9/ /20/ /44/	DR	The project does not involve and is not complicit in involuntary resettlement as described in the Project Feasibility Report /20/ . There is no residential area on the route of the project's components therefore the project is not complicit in involuntary resettlement. Cultural and environmental heritage is protected against alteration, damage or removal by the Law /44/ . It has been observed during on site visit that the most of the project is located at forestry area.	OK
B.4.7.3	Does not the project involve and is not complicit in the alteration damage or removal of any critical cultural heritage? (<i>Annex H of GS Toolkit – § 3</i>).	/2/ /8/ /9/ /25/	DR	The project does not involve and is not complicit in the alteration damage or removal of any critical cultural heritage according to PIF /25/ .	OK
B.4.7.4	Does the project respects the employees' freedom of association and their right to collective bargaining and is not complicit in restrictions of these freedoms and rights? (<i>Annex H of GS Toolkit – § 4</i>).	/2/ /8/ /9/ /44/	DR, CC	The project respects the employees' freedom of association and their right to collective bargaining and is not complicit in restrictions of these freedoms and rights. Turkey has ratified ILO Convention 87 (Freedom of Association and Protection of the Right to Organize Convention) and ILO Convention 98 (Right to Organize and Collective Bargaining Convention) /44/ .	OK
B.4.7.5	Does not the project involve and is not complicit in any form of forces compulsory labour? (<i>Annex H of GS Toolkit – § 5</i>).	/2/ /8/ /9/ /44/	DR, CC	The project does not involve and is not complicit in any form of forces compulsory labour. Turkey has ratified ILO Convention 29 and 105 (Forced Labour Convention) /44/ .	OK
B.4.7.6	Does not the project employ and is not complicit in any form of child labour? (<i>Annex H of GS Toolkit – § 7</i>).	/2/ /8/ /9/ /44/	DR, CC	The project does not employ and is not complicit in any form of child labour. Turkey has ratified ILO Convention 138 (Minimum Age Convention) and 182 (Worst Forms of Child Labour Convention) /44/ .	OK

Checklist Question	Reference	MoV ¹	Comments	Conclusion
B.4.7.7 Does not the project involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis? (<i>Annex H of GS Toolkit – § 7</i>).	/2/ /8/ /9/ /44/	DR, CC	The project does involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis. Turkey has ratified ILO Convention 100 (Equal Remuneration Convention) and 111 (Discrimination in Respect of Employment and Occupation) Convention) /44/ .	OK
B.4.7.8 Does the project provide workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments? (<i>Annex H of GS Toolkit – § 8</i>).	/2/ /8/ /9/	DR, CC, I	According to the project owner, staff will be trained and certificated for use of the technical equipment health and safety protocols and working at high voltage environment and all necessary safety equipment will be provided by the project owner. Government obligatory insurance and pension systems will be practiced for all workers. The labour safety and health is protected by law and regulations.	OK
B.4.7.9 Does the project take a precautionary approach in regard to environmental challenges and is not complicit in practices contrary to the precautionary principle? (<i>Annex H of GS Toolkit – § 9</i>).	/2/ /8/ /9/ /20/ /21/ /25/ /50/ /51/ /52/	DR, CC	Project does not produce any hazardous waste or involve plantation and host country has its own legislation. Also regulations “Regulation of Disposal of Hazardous wastes” /50/ , “Regulation of Disposal of Solid wastes” /51/ and “Regulation on assessment and management of environmental noise” /52/ will be followed. Feasibility Report /20/ , Ecosystem Assessment Report /21/ and Project Introduction File /25/ show that the project performs under the applicable legislations to prevent any environmental damages.	OK
B.4.7.10 Does not the project involve and is not complicit in significant conversion or degradation of critical natural habitats, including those that are legally protected, officially proposed for protection, identified by authoritative sources for their high conservation value, or recognized as protected by traditional local communities? (<i>Annex H of GS Toolkit – § 10</i>).	/2/ /8/ /9/ /25/	DR	The project does not involve and is not complicity in significant conversion or degradation of critical natural habitats. Turkey is party to the Bern Convention. Proposed project activity is built to generate electricity from an existing dam and includes installation of penstock and powerhouse on a land already expropriated for the irrigation dam construction as it is stated in the PIF /25/ .	OK
B.4.7.11 Does not the project involve and is not in complicit in corruption? (<i>Annex H of GS Toolkit – § 11</i>).	/2/ /8/ /9/	DR, CC	The project does not involve and is not in complicit in corruption. United Nation Convention against Corruption had been signed on 10/12/2003 and ratified on 09/11/2006 by the host country, Turkey.	OK
B.4.8 Sustainability Assessment				
B.4.8.1 Are the GS indicators of sustainable development	/2/ /8/ /9/	DR,	The GS indicators of sustainable development are defined	OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
	identified according to the Annex I of the GS Toolkit? (list the identified indicators)		CC	as per the Annex I of the GS Toolkit /9/. The indicators are connected to the localized Millennium Development Goals as per the Annex I of the GS Toolkit. The identified indicators under Sustainable Development Matrix of GS Passport is as follows: – Air quality – Water quality and quantity – Soil condition – Other pollutants – Biodiversity – Quality of employment – Livelihood of the poor – Access to affordable and clean energy services – Human and institutional capacity – Quantitative employment and income generation – Balance of payments and investment – Technology transfer and technological self-reliance	
B.4.8.2	Are the justification choices documented? Which data sources have been provided for references?	/2/ /8/ /9/ /25/	DR, CC	The justification for indicators is presented in the GS Passport /2/. For references Project Introduction File /25/ has been provided.	OK
B.4.8.3	Which parameters have been identified for the selected indicators?	/2/ /8/ /9/	DR	All GS indicators were chosen as described in Annex I. – <i>Air quality</i>: SO₂ and NO_x emissions (+) – <i>Water quality and quantity</i>: “Amount of water released.” (0) – <i>Soil condition</i>: “Appropriate storage of excavation aggregates and sediment transport” (0) – <i>Other pollutants</i>: “Noise level during construction and dust” (0) – <i>Biodiversity</i>: “Number of effected species” (0) – <i>Quality of employment</i>: “Number of certificates issued/trainings provided” (+) – <i>Livelihood of the poor</i>: “Change in living standards” (0) – <i>Access to affordable and clean energy services</i>: “Fossil fuel replaced” (0) – <i>Human and institutional capacity</i>: “Number of people	OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
				participating stakeholder meetings" (0) – <i>Quantitative employment and income generation</i> : "Payment made to staff" (+) – <i>Balance of payments and investment</i> : "Currency saving due to avoided fuel import" (+) – <i>Technology transfer and technological self-reliance</i> : "Expenditures for equipment" (0)	
B.4.9 Conclusion					
B.4.9.1	What is the conclusion with regard to the additionality of the project activity?	/1/ /4/ /11/ /19/ /20/ /27/ /28/ /29/ /30/ /31/ /32/ /33/ /34/ /38/ /39/ /40	DR, CC	Please refer to Section B.4.4, B.4.5 and B.4.6 of this validation protocol.	CR-4 CR-5 CAR-5 CAR-6 CAR-7 CAR-8 CAR-9 CAR-10 CAR-11 OK
B.5 Algorithms and/or formulae used to determine emission reductions					
B.5.1 Baseline emissions					
B.5.1.1	Are the steps and equations applied to calculate the baseline emissions in compliance with the requirements of selected baseline and monitoring methodology?	/1/ /10/ /12/	DR, CC	The calculation of baseline emission reductions is carried out in a conservative manner providing documentation and references to data sources. An approved CDM methodology, ACM0002 /10/ and methodological tool "Tool to calculate the emission factor for an electricity system /12/ " is applied. The official published data, TEIAS statistics, are used to determine the emission factor of the grid. The emission factor is calculated as a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the tool /12/ .	OK
B.5.1.2	Have conservative assumptions been used when calculating the baseline emissions and are the uncertainty estimates properly addressed?	/1/ /12/	DR, CC	The calculation is based on the latest available data (TEIAS 2011 statistics).	OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
	Are all the values used in the PDD considered reasonable in the context of the proposed project activity?				
B.5.1.3	Baseline Emissions estimated	/1/ /6/ /12/	DR, CC	Estimated baseline emissions are calculated as 49,416 in the excel sheet /6/. However, it is stated as 49,415 in the PDD /1/. Please clarify.	CAR-12 OK
B.5.2 Project Emissions					
B.5.2.1	Are the steps and equations applied to calculate the project emissions in compliance with the requirements of selected baseline and monitoring methodology? Are all the values used in the PDD considered reasonable in the context of the proposed project activity?	/1/ /10/	DR	Project emissions are neglected since the project activity is a hydro power plant and does not cause any significant emissions. However, the project activity includes a reservoir area and according to the methodology /10/ in section 6 (page 5), the project emissions should be calculated.	CAR-13 OK
B.5.2.2	Have conservative assumptions been used when calculating the project emissions and are the uncertainty estimates properly addressed?	/1/ /10/	DR	Please refer to Section B.5.2.1 of this protocol.	CAR-13 OK
B.5.2.3	Project emissions estimated	/1/ /10/	DR	Please refer to Section B.5.2.1 of this protocol.	CAR-13 OK
B.5.3 Leakage					
B.5.3.1	Are the steps and equations applied to calculate the leakage in compliance with the requirements of selected baseline and monitoring methodology? Are all the values used in the PDD considered reasonable in the context of the proposed project activity?	/1/ /10/	DR	The leakage emissions are neglected as per ACM0002 /10/. During on site visit, the project manager mentioned that the equipment agreement was signed with Koessler. However, equipment agreement is not provided to the validation team.	CR-6 OK
B.5.3.2	Have conservative assumptions been used when calculating the leakage and are the uncertainty estimates properly addressed?	/1/ /10/	DR	Please refer to Section B.5.3.1 of this protocol.	CR-6 OK
B.5.3.3	Leakage estimated	/1/ /10/	DR,	Please refer to Section B.5.3.1 of this protocol.	CR-6 OK
B.5.4 Emission reductions					
B.5.4.1	Has the methodology been correctly applied to calculate the emission reductions and can this be replicated by the data provided in the PDD and supporting files to be submitted for registration?	/1/ /10/	DR, CC	The ex-ante emission reduction has been calculated as following equation in line with the ACM0002 /10/: $ER_y = BE_y - PE_y - LE_y$ The leakage emissions are zero for the project activity.	CAR-13 OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
				However, the project emission should be calculated as per the methodology /10/. Please refer to Section B.5.2.1 of this validation protocol.	
B.5.4.2	Are all the assumptions and data used by the project participants listed in the PDD including their references and sources?	/1/ /10/	DR, CC	Please refer to Section B.5.2.1 of this validation protocol.	CAR-13 OK
B.5.4.3	Is all the documentation used by the project participants as the basis for assumptions and source of data quoted and interpreted in the PDD?	/1/ /10/	DR, CC	Please refer to Section B.5.2.1 of this validation protocol.	CAR-13 OK
B.5.4.4	Emission Reductions estimated	/1/ /10/	DR, CC	Please refer to Section B.5.2.1 of this validation protocol.	CAR-13 OK
B.6 Monitoring plan					
B.6.1 Parameters ex-ante					
B.6.1.1	Does the monitoring plan contain the list of all parameters required by the approved methodology and by the applicable methodological tool?	/1/ /10/ /12/	DR, CC	The monitoring plan (data and parameters fixed ex ante) does not include all data and parameters fixed ex ante required by the applied methodology /10/ and baseline tool /12/. The parameters of FC _{i,y} and η _{m,y} should be added to the PDD for ex-ante parameters.	CR-7 OK
B.6.1.2	How were the parameters available at validation verified?	/1/ /10/ /12/ /48/	DR, CC	Net electricity generated and delivered to the grid by power plants, not including low-cost/must run (EG_y): It is calculated by using TEIAS website for OM calculation. CO₂ emission factor of fossil fuel type i in year y. (EF_{CO2,i,y}): It is calculated by using 2006 IPCC data /48/. Net calorific values of fuel combusted in power plants (NCV): It is calculated by using TEIAS website for OM and BM calculation.	OK
B.6.1.3	Which default data have been selected and applied?	/1/ /10/ /12/ /48/	DR, CC	The emission factors of fuels used in the calculations are based on IPCC default values at the lower limit of uncertainty at a 95% confidence interval as provided in table 1.4 of Chapter 1 of Volume 2 of the 2006 IPCC Guidelines on National GHG Inventories /48/, which is in line with the methodological tool, and considered as appropriate.	OK
B.6.1.4	Are all the values used in the PDD considered reasonable in the context of the proposed project	/1/ /10/ /12/	DR, CC	The monitoring plan (data and parameters fixed ex ante) does not include all data and parameters fixed ex ante	CR-7 OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
	activity?			required by the applied methodology /10/ and baseline tool /12/. The parameters of $FC_{i,y}$ and $\eta_{m,y}$ should be added to the PDD for ex-ante parameters.	
B.6.2 Parameters ex-post					
B.6.2.1	Does the monitoring plan described in the PDD comply with the requirements of the methodology and the applicable methodological tool?	/1/ /10/ /12/	DR, CC	The monitoring plan described in the PDD complies with the requirements of the methodology /10/ and the applicable methodological tool /12/.	OK
B.6.2.2	Does the monitoring plan contain all necessary parameters and are they clearly described?	/1/ /10/ /12/	DR, CC	The monitoring plan includes all necessary data and parameters ex-post required by the applied methodology /10/ and the applicable methodological tool /12/. The parameters included to the monitoring plan are net “Electricity generated and delivered to the grid by power plant in year y ($EG_{facility,y}$)”, “Installed capacity of the hydro power plant after the implementation of the project activity (Cap_{PJ})” and “Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (A_{PJ})”. However, the data unit of $EG_{facility}$ mentioned as GWh is not in line with the methodology.	CR-8 OK
B.6.2.3	Is the measurement equipment described? Is the accuracy of the measurement equipment addressed and deemed appropriate? Are the requirements for maintenance and calibration of measurement equipment described and deemed appropriate?	/1/ /10/ /12/	DR, CC	Measurement equipment and its accuracy are described in the PDD /1/ and deemed appropriate. Two calibrated meters will be placed (one main and one reserve) in the project area. These meters are sealed by TEIAS and intervention by project proponent is not possible. Also, TEIAS is responsible for maintenance and the calibration. The meters will measure hourly and record monthly. Annual generation of energy is based on the Electricity Metering Reading Protocols and PMUM records will be used for crosschecked.	OK
B.6.2.4	Is the monitoring and recording frequency adequate for all monitoring parameters? Is it in line with the monitoring methodology?	/1/ /10/ /12/	DR, CC	The monitoring frequency of “ $EG_{facility,y}$ ” is defined as “Continuous measure and monthly recording” in the PDD. In addition, the monitoring frequency of “ Cap_{PJ} ” and “ A_{PJ} ” are defined as “yearly” and in line with the methodology /10/.	OK
B.6.2.6	How has it been assessed that the monitoring arrangements described in the monitoring plan are	/1/ /10/ /12/ /49/	DR, CC	The monitoring arrangements described in the monitoring plan are feasible within the project design. The electricity	OK

Checklist Question	Reference	MoV ¹	Comments	Conclusion
	feasible within the project design? Please confirm the ability of the project participants to implement the described monitoring plan.		generation will be monitored in line with the TEIAS rules /49/.	
B.6.3 Monitoring of the GS indicators of sustainable development				
B.6.3.1	Does the monitoring plan include the GS indicators of sustainable development?	/2/ /7/ /9/ /10/	DR, I The SD parameters which are scored non-neutral and the mitigation measures stated in the “Do no harm assessment” table are included to Sustainability Monitoring Plan of GS Passport which are listed below: – <i>Air quality</i>: SO₂ and NOx emissions from grid connected plants – <i>Biodiversity</i>: Number of effected species – <i>Quality of employment</i>: Number of certificates issued/trainings provided. – <i>Balance of payments and investment</i>: Currency saving due to avoided fuel import. – <i>Water Quality and Quantity</i>: Amount of water released. – <i>Quantitative employment and income generation</i>: Payment made to the staff • As per the GS Local Stakeholder Consultation Report Review Feedback of 05/06/2013 /7/, the DOE shall validate the compensation measures taken by the PP for expropriation at the time of project validation. During on site visit, the stakeholders were interviewed about the expropriation. They confirmed and indicated that the project has the expropriation and they received the price of plots harvested. Also, the mukhtar claimed that the expropriation was applied because of the property owners were not alive and the people who are inheritance were fail to agree with each other. • As per the GS Local Stakeholder Consultation Report Review Feedback of 05/06/2013 /7/, the DOE shall validate the ecosystem assessment report along with all the mitigation measures for environmental measures discussed in the LSC report at the time of project validation. All the parameters given in the LSC Report was	CAR-14 OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
				discussed during on site visit. The parameter of “Soil Condition” and “Other Pollutants” should be added to the monitoring plan. For soil condition; ‘storage of excavation’ and ‘afforestation’ indicators should be monitored for only the first verification period since it is defined as “Only construction of water transfer channel will cause excavation of soil which will be placed on top of present landscape and the area will be forested” in the GS Passport /2/ and LSC Report /3/. For other pollutants; ‘dust and noise emissions’ and ‘amount of solid and waste oil’ should be monitored since it is defined as “No dust, noise or other pollutant sources exist. To inhabit the noise caused by the explosives, the explosives will be used during the specific time during the day. Amount of solid and waste oil. Documents proving of proper handling such as bills, collection agreements” in the GS Passport /2/ and LSC Report /3/. • As per the GS Local Stakeholder Consultation Report Review Feedback of 05/06/2013 /7/, the DOE shall validate all the reference sources used in the scoring of SD indicators at the time of project validation. The parameters given and will be added in monitoring plan should be monitored during the first verification period. • As per the GS Local Stakeholder Consultation Report Review Feedback of 05/06/2013 /7/, the DOE shall check how the recommendations for fish passage have been incorporated in the project design at the time of validation. For the recommendations for fish passage in the project design, a report was prepared by a third party. Suitable fish passage structure has been determined as per the Evaluation of the Structural Aspects of Fish Passage Project Report /22/.	
B.6.3.2	Does the monitoring plan give the way (how, when, by who) of monitoring of each GS indicator?	/2/ /8/ /9/	DR, I	The Sustainability Monitoring Plan includes the way of monitoring for each GS indicator as explained below:	CAR-14 OK

Checklist Question	Reference	MoV ¹	Comments	Conclusion
			– <i>Air quality</i>: SO2 and NOx emissions are monitored by the electricity generated by the project activity yearly. – <i>Biodiversity</i>: Number of effected species is monitored by an independent expert assessment once after the project is completed. – <i>Quality of employment</i>: Number of certificates issued/trainings are monitored by the employment records and training documents/certificates yearly. – <i>Balance of payments and investment</i>: Currency saving due to avoided fuel import is monitored by comparing electricity generated by the project and natural gas that would be used to produce the same amount of electricity by a thermal power plant yearly. – <i>Water Quality and Quantity</i>: Amount of water released is monitored with site assessment and interviews with locals once after construction is completed. – <i>Quantitative employment and income generation</i>: Payment made to the staff is monitored by the pay checks and other employment documents annually. Please refer to Section B.6.3.2 of this protocol.	
B.6.3.3	Does the monitoring plan give the future project target for the parameter?	/2/ /8/ /9/	DR, I The Sustainability Monitoring Plan includes future target for each GS indicator as explained below: – <i>Air quality</i>: SO2 and NOx emission reduction corresponding to annual generation. – <i>Biodiversity</i>: the natural habitat of the region will be protected. – <i>Quality of employment</i>: All relevant staff employed by project owner will be trained for Health and safety issues and relevant staff will be certified for working at high voltage environment. – <i>Balance of payments and investment</i>: Natural gas consumption will be parallel to actual electricity generation. – <i>Water Quality and Quantity</i>: Flow regime of the channel will be operated according to water usage agreement with DSI. – <i>Quantitative employment and income generation</i>:	OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
				Project will create new job opportunities compared to baseline scenario.	
B.6.4 Management/Quality Assurance/Quality Control					
B.6.4.1	Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)?	/1/ /49/ /60/	DR	The electricity generation and consumption is measured in line with the TEİAŞ rules and requirements /49/ . The monthly meter reading documents are archived by power plant manager and PMUM /60/ . The settlement notification, which is issued by TEİAŞ and includes the meter reading data, is stored on a TEİAŞ file server and accessible for Camlica-II via a secured website with the username and the password.	OK
B.6.4.2	Are the data management and quality assurance and quality control procedures sufficient to ensure that the emission reductions achieved by/resulting from the project can be reported ex post and verified?	/1/ /12/	DR	The data management and quality assurance and quality control procedures are sufficient to ensure that the emission reductions achieved by the project can be reported ex post and verified during the verification phase.	OK
B.6.4.3	Will all monitored data required for verification and issuance be kept for two years after the end of the crediting period or the last issuance of CERs, for this project activity, whichever occurs later?	/1/	DR	All data will be kept for at least two years after the crediting period as mentioned in the PDD /1/ .	OK
C.1 Crediting period					
C.1.1	What is the expected crediting starting date of the proposed project activity? Does the crediting period start eight week after the request for registration?	/1/	DR	The project is already listed in GS registry. The expected crediting starting date is defined as both 15/04/2013 and 15/04/2014 in the PDD /1/ . However, the site visit was conducted on 21/02/2013 and it has been observed during on site visit that the construction has not been finished yet. Therefore, the date should be revised.	GAR-4 OK
C.1.2	What is the length of the crediting period? Is it clearly defined and reasonable?	/1/	DR	The length of crediting period is defined as 7 years and renewable crediting period is selected in the PDD /1/ and that is reasonable. Also, it is indicated that it is first renewable crediting period in the PDD /1/ .	OK
D.1 Environmental impacts					
D.1.1	Has an analysis of the environment impacts of the project activity been undertaken? Is it clearly and sufficiently described in the PDD?	/1/ /2/ /23/ /25/	DR, CC	The environmental impact of the project activity is evaluated in the GS Passport /2/ . Also, a brief summary is presented in the PDD /1/ . "Kayseri Governorship Environment and Urbanization	OK

Checklist Question		Reference	MoV ¹	Comments	Conclusion
				Directorate" have issued a Certificate of EIA Exemption dated 16/02/2011 /23/ based on Preliminary EIA Report /25/ for the total capacity of 15,85 MW and Molu Enerji Uretim A.S. After the capacity was increased, Certificate of EIA Exemption was amendment as Derin Enerji Urt. San. ve Tic. A.S. on 20/05/2013 /23/.	
D.1.3	Is the analysis of the environmental impacts required by the legislation of the host Country? If yes, has the EIA has been approved by local Government? Does the approval contain any conditions that need monitoring?	/1/ /2/ /23/ /25/	DR, CC	"Kayseri Governorship Environment and Urbanization Directorate" have issued a Certificate of EIA Exemption dated 20/05/2013 /23/ based on Preliminary EIA Report /25/.	OK
D.1.4	Is it the project in line with the current environmental legislation in the host Country?	/2/	DR	The project is in line with the current environmental legislation in the host Country	OK
D.1.5	Is the monitoring of sustainable development indicators/ environmental impacts warranted by legislation in the host country?	/2/	DR	The monitoring of sustainable development indicators/ environmental impacts is not warranted by legislation in the host country.	OK
D.1.6	Are the sustainable development indicators in line with stated national priorities in the host country?	/2/	DR	The monitoring of sustainable development indicators/ environmental impacts is not warranted by legislation in the host country.	OK
E.1 Local Stakeholder Consultation					
E.1.1	Are the local stakeholders be invited by the PP prior to the publication of the PDD to the UNFCCC website?	/3/ /9/	DR	The stakeholder meeting was held on 26/01/2012 in line with the GS Toolkit /9/ as confirmed through the LSC Report /3/ and by interviews with the stakeholders during on site visit.	OK
E.1.2	Area the stakeholders invited be considered as regards commenting the proposed project activity?	/3/ /9/	DR	The local people, local authorities, local non-governmental organizations, GS Local Representative, NGO supporters of the GS and local represent of GS are invited to the local stakeholder meeting in line with the GS Toolkit /9/ as confirmed through the LSC Report /3/.	OK
E.1.3	Is the summary of the comments received from the stakeholders, provided in the PDD complete?	/3/	DR	The summary of the comments received from the stakeholders are presented in the LSC Report /3/.	OK
E.1.4	Has due account been taken by the project participants of any stakeholder comments received?	/3/	DR	The stakeholder comments received have been taken account as explained in the LSC Report /3/. No negative comments have been received.	OK
E.1.5	If a stakeholder consultation process is required by regulations/laws in the host Country, has the	/3/	DR	The stakeholder consultation process is not required by regulations/laws in the host Country.	OK

Checklist Question	Reference	MoV ¹	Comments	Conclusion
	stakeholder consultation process been carried out in accordance with such regulations/laws?			

TABLE 2 RESOLUTION OF CORRECTIVE ACTION REQUESTS AND CLARIFICATION REQUESTS

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
CAR 1 (a) “Clean Development Mechanism Project Design Document Form for Small-Scale CDM Project Activities (F-CDM-SSC-PDD) /15/, version 04.1” which is the latest version is applied with the PDD /1/. However, Section A.6 is not presented in the PDD and Section B.2 and D.2 is not in line with the F-CDM-SSC-PDD.	A.1.2	Section A.6 added in the PDD. Section B.2 revised as per F-CDM-SSC-PDD and D.2 removed. 2nd round: Section B2 title changed in line with F-CDM-SSC-PDD. 3rd round: Corrections have been made.	<u>Review 1 (28/02/2014):</u> Section A.6 is added and Section D.2 is removed as per the “Clean Development Mechanism Project Design Document Form for Small-Scale CDM Project Activities (F-CDM-SSC-PDD) /15/, version 04.1”. However, the section name of B.2 still is not in line with the F-CDM-SSC-PDD. <u>Hence, CAR 1 is not closed.</u> <u>Review 2 (11/03/2014):</u> The Section B.2 title is revised as “Project activity eligibility” and is now in line with the F-CDM-SSC-PDD /15/. However, since the project activity is defined as a large project (the project capacity is above 15 MWe), “Project Design Document Form for CDM Project Activities” (F-CDM-PDD) must be used. <u>Hence, CAR 1 is not closed.</u> <u>Review 3 (12/03/2014):</u> “Project Design Document Form for CDM Project Activities” (F-CDM-PDD) is now applied. <u>Hence, CAR 1 is closed.</u>
CAR 2 Tool for the demonstration and assessment of additionality (Version 07.0.0) is applied in the PDD/11/. However, in Section Step 4 “Common Practice Analysis”, it is referred version 06.0.0 for the tool for demonstration and assessment of additionality.	B.1.2 B.4.1	Tool version referral revised in common practice analysis	<u>Review 1 (04/03/2014):</u> Tool for the demonstration and assessment of additionality (Version 07.0.0) is now applied in Section Step 4 “Common Practice Analysis”. <u>Hence, CAR 2 is closed.</u>

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
CAR 3 The generated electricity is fed to the national grid of Turkey. However, it could not be confirmed since the System Connection Agreement is not provided to the validation team. The project activity results in new reservoirs. However, the power density of the power plant was not discussed in the PDD.	B.1.3	System connection agreement has been submitted	<u>Review 1 (04/03/2014):</u> The System Connection Agreement /62/ is now provided to the validation team. The agreement was signed between TEIAS and Derin Enerji Uretim San. ve Tic. A.S. on 13/08/2013, The power density of the power plant is now discussed in the revised PDD. <u>Hence, CAR 3 is closed.</u>
CAR 4 The project has the timeline to confirm the continuous actions in parallel with the implementation were taken to secure project status. However, start of the construction date and the expected commissioning date are not in line with the real situation. Start of the construction date is 01/05/2012 as confirmed through the delivery record /46/. In addition, Expected Commissioning Date is defined as 15/04/2013 in the milestone. However, the site visit was conducted on 21/02/2013 and it has been observed during on site visit that the construction has not been finished yet. Therefore, the date should be revised.	B.4.3.3 C.1.1	Timeline updated as per the latest schedule 2nd round: Construction start date has been revised both in the PDD and Passport. Expected commissioning date has been determined with regard to the facility manager's statement. It will be revised as per the provisional acceptance certificate once the plant is operational. However the revised license already states 15/04/2014 as construction end date.(page 6/7 of .pdf file) Carbon certification draft proposal and associated communication logs have been submitted to the DOE.	<u>Review 1 (28/02/2014):</u> Start of the construction date is still not in line with the delivery record /46/. Please correct in the PDD and also in the Passport. The expected commissioning date is revised as 15/04/2014 in the PDD. Please provide a reference after the beginning of the electricity generation. Also, the timeline is updated as per the provided documents. All of them are confirmed as per the provided documents except the Carbon Certification Proposal. Please provide a reference. <u>Hence, CAR 4 is not closed.</u> <u>Review 2 (11/03/2014):</u> Start of the construction date is now corrected both PDD and Passport as 01/05/2012 and in line with the delivery record /46/. The expected commissioning date is found reasonable as per the Generation License. Carbon Certification Proposal is confirmed as per the reference /66/. The agreement was signed between Derin

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
			Enerji Uretim Sanayi ve Ticaret Anonim Sirketi and Global Tan Energy Ltd Turkiye Ankara Subesi on 08/06/2011. <u>Hence, CAR 4 is closed.</u>
CAR 5 In Section B5. Sub-step 2c - Choice of financial indicator (equity IRR) is not justified properly in accordance with the benchmark chosen. Please justify why Equity IRR is applied. Please also clarify IRR is calculated before or after taxes.	B.4.4.2 B.4.4.3	Choice of IRR is made considering the additionality tool and as described in guideline for financial analysis. IRR calculation has been updated and IRR before tax has been used in benchmark	<u>Review 1 (05/03/2014):</u> The benchmark used is derived from the The World Bank-Project Appraisal Document Report No 46808 – TR dated 01/03/2009 with a value of 15%. The Report describes the benchmark as “equity IRR”. Hence, the use of equity IRR of the project as a financial indicator is justified. The equity IRR is calculated before taxes which is conservative from financial analysis point of view because it results in a higher value of the IRR. The PDD, ver.02 of 03/02/2014 has been amended correspondingly. <u>Hence, CAR 5 is closed.</u>
CAR 6 The value of the main equipment depreciation period listed in the PDD is not consistent with the value used in the equity IRR calculation sheet. Evidences for the following expenses need to be presented: • Electromechanical hardware • Energy transmission works • Expropriation and public works • General expenses • Maintenance expenses • Loan agreement with information for the size of the loan, interest rate, loan period, grace period or justification of all parameters based on wide-spread practice. • Evidence/justification of the operation expenses – staff costs, etc.	B.4.4.5	FSR has been submitted to DOE which is available data at time of investment decision. Also, construction agreement has been submitted. Requested evidences for costs can be seen in section 8 and 9 of FSR as there were no other documents at time of investment decision. For maintenance, as there is no maintenance agreement, link for assumption in financial model has been given in cell E6 of the main sheet.	<u>Review 1 (05/03/2014):</u> The explanation provided by the PP is deemed sufficient. The documents presented additionally have been studied by the audit team and the expenses and costs used in the equity IRR calculation sheet have been verified. <u>Hence, CAR 6 is closed.</u>

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
CAR 7 The generation license /19/ is issued for 89,558 MWh/year which means 58.22% load factor. The default operation hours of the water turbines are 150,000 which mean that the lifetime of the turbine equipment is ~29 years. The equity IRR is calculated for a period of 44 years of operation which means that the turbines have to be replaced after 29-30 years and that cost of the new equipment has to be included in the cash-flow. Or the equity IRR has to be calculated for 30 years and the fair value of the equipment has to be included in the positive cash-flow. The fair value has to be calculated only on the mechanical equipment (metal) and not taking into consideration the constructions. In any case 44 years is a too long period for calculating the IRR.	B.4.4.8 B.4.4.9 B.4.4.10	Equipment replacement cost has been excluded for conservativeness and simplicity. IRR Calculation duration has been selected in line with the guidance on financial analysis document which states that the IRR should be calculated for a period which assumes the project to be operational. Camlica-II will be operational as long as 44 years as per the license.	<u>Review 1 (05/03/2014):</u> The approach used by the PP is conservative and would lead to a higher equity IRR and is acceptable. <u>Hence, CAR 7 is closed.</u>
CAR 8 The depreciation values are not calculated properly throughout the years of operation in the presented IRR calculation sheet /4/ – the mechanical equipment is fully depreciated after the 25 th year.	B.4.4.9 B.4.4.10	Depreciation values has calculated as per the legal guidelines (Vergi Usul Kanunu) which species depreciation period as 25 years for turbines. Technical lifetime and depreciation as per tax regulations perspective are different issues.	<u>Review 1 (05/03/2014):</u> The explanation given by the PP is deemed sufficient. The depreciation period of the mechanical equipment is depreciated according to Turkish accounting laws and regulations. <u>Hence, CAR 8 is closed.</u>
CAR 9 The table with variations of +/- 15 % is not consistent with the explanatory text in the PDD. There is no analysis of the results compared to the benchmark of 15%.	B.4.4.12	Table content and description synced.	<u>Review 1 (06/03/2014):</u> The PDD ver.02 of 03/02/2014 is corrected accordingly. The description is made consistent to the content of the variations table. <u>Hence, CAR 9 is closed.</u>
CAR 10 The parameters in the sensitivity analysis are not varied to reach the benchmark and the possibility of this not happening is not discussed.	B.4.4.13	This information and discussion already exist in detail in page 11-12(sub step 2c) in detail.	<u>Review 1 (06/03/2014):</u> The explanation of the PP is sufficient. The required sensitivity assessment is part of the PDD, p.11-12(sub-step 2c). <u>Hence, CAR 10 is closed.</u>
CAR 11	B.4.6.2	The analysis is made as per the capacity	<u>Review 1 (05/03/2014):</u>

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
According to the PDD version /1/, 61 projects are defined in the applicable power installation range of 7.7 MWe to 23.1 MW, $N_{all}=37$ projects are identified as similar and $N_{diff}= 34$ projects are identified as different. However, they could not be justified since it is not reproducible. All the projects given in TEIAS web-site are not listed in the excel sheet to give a clear definition to filter. Also, please clarify why step-1 (+/-50%) is calculated with the previous capacity of 15.4 MW.	B.4.6.4	at time of investment decision which is 15.4MWe. List of power plants have been obtained from capacity projection report referred in PDD. 2nd round: Common practice steps explained on excel sheet. Revised calculations have been submitted. 3rd round: Corrections have been made and outcomes of revised capacity common practice analysis have been discussed briefly under CPA sub-step 4.4	All the projects could be confirmed as per the given reference. In the excel sheet, N_{all} is defined as 56 and N_{diff} is defined as 55. However, PDD is not in line with the excel sheet. Please revise. The two projects are defined as CDM in the first table of the excel sheet and defined as not CDM in the second table. Please clarify. As per the guideline of Common Practice, all the steps are continuing within the projects identified in the previous step. Therefore, after N_{all} is calculated, N_{diff} must be calculated within the projects given in N_{all}. The projects identified as zero in N_{all}, could not be accounted for N_{diff}. Please correct. <u>Hence, CAR 11 is not closed.</u> <u>Review 2 (11/03/2014):</u> As per the guideline of Common Practice Step 1, total design capacity should be used for the calculation of +/-50%. However, it is also related with the additionality. Therefore, for both capacities the calculation of the common practice was applied. The common practice excel sheets "Camlica_II_CP_17.58MWe.xlsx" and "Camlica_II_CP_15.4MWe.xlsx" are followed all the steps in the guideline. For the capacity of 15.4 MWe; N_{all} is found 46 and N_{diff} is found 39. For the capacity of 17.58 MWe; N_{all} is found 42 and N_{diff} is found 35. The F Factor is calculated less than 0.2 for both capacities. Therefore it is not a common practice. However, N_{all} is still presented as 37 for

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
			the capacity of 15.4 MWe in the PDD. In addition, the results of the common practice with the capacity of 17.58 MWe should be also discussed in the PDD. <u>Hence, CAR 11 is not closed.</u> <u>Review 3 (12/03/2014):</u> Nall is now corrected as 46 for the capacity of 15.4 MWe in the PDD. In addition, the results of the common practice with the capacity of 17.58 MWe is also discussed in the PDD, version 04. <u>Hence, CAR 11 is closed.</u>
CAR 12 Estimated baseline emissions are calculated as 49,416 in the excel sheet /6/. However, it is stated as 49,415 in the PDD /1/. Please clarify.	B.5.1.3	Figures updated in PDD 2nd round: Estimations are based on the original license which also forms the basis of other project eligibility criteria. Applied figures are the only source of information available at time of investment and carbon certification agreement. However the actual generation will be monitored in line with the monitoring plan and the emission reductions will be certified accordingly. Original license figures are used for consistency. 3rd round: Amended license figures are used.	<u>Review 1 (28/02/2014):</u> Estimated baseline emissions are now calculated as 50,066 in the excel sheet /6/ and PDD /1/. The expected annual generation is revised as 90,700 W. However, it is defined as 89,558,000 kW in the Generation License /19/. Please clarify. <u>Hence, CAR 12 is not closed.</u> <u>Review 2 (10/03/2014):</u> The expected annual generation is defined as 90,700 W given in the generation license for previous capacity. Original license does not show the current situation. Please correct the value as per the amendment license. <u>Hence, CAR 12 is not closed.</u> <u>Review 3 (12/03/2014):</u> The expected annual generation is defined as 89.558 GWh/y given in the

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
			generation license for current capacity. <u>Hence, CAR 12 is closed.</u>
CAR 13 Project emissions are neglected since the project activity is a hydro power plant and does not cause any significant emissions. However, the project activity includes a reservoir area and according to the methodology /10/ in section 6 (page 5), the project emissions should be calculated.	B.2.3 B.5.2 B.5.4	Project emissions are considered in the revised version of PDD. 2nd round: Equipment agreement does not include the technical details, project generation license is added under CAP _{PJ} parameter as a reliable source of data. Original figures are taken into account for consistency between parameters. 3rd round: Capacity is referred as per the amended license to prevent contradictions. Equipment agreement with the technical specifications will be provided in the first verification if required.	<u>Review 1 (28/02/2014):</u> The power density of the power plant is now calculated as per the CAP _{PJ} and A _{PJ} in the PDD. Since power density calculation is greater than 10 W7m ² , the project emissions are considered as zero. However, the value of the parameter CAP _{PJ} given as 15,400 W could not be confirmed as per the equipment agreement. Please clarify. The reservoir area is presented as 10,091.16 m ² and it could be confirmed as per the map /63/. <u>Hence, CAR 13 is not closed.</u> <u>Review 2 (11/03/2014):</u> In the agreement, the information about the products purchased will necessarily take place. For this reason, in order to see the difference between apparent power and active power clearly, you need to determine the maximum capacity of the turbine generator. It may be also calculated from the data of the label on the turbines. In addition, if the generation license will be used as a reference, the current situation should be taken into account for all the monitoring parameters. The amendment generation license is referred to 17.58 MWe for the turbines. Otherwise, it may cause confusion during on verification. Please correct. <u>Hence, CAR 13 is not closed.</u>

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
			<u>Review 3 (12/03/2014):</u> The turbine capacity is now mentioned as 17.58 MWe as per the generation license. <u>Hence, CAR 13 is closed.</u>
CAR 14 The parameter of “Soil Condition” and “Other Pollutants” should be added to the monitoring plan. For soil condition; ‘storage of excavation’ and ‘afforestation’ indicators should be monitored for only the first verification period since it is defined as “Only construction of water transfer channel will cause excavation of soil which will be placed on top of present landscape and the area will be forested” in the GS Passport /2/ and LSC Report /3/. For other pollutants; ‘dust and noise emissions’ and ‘amount of solid and waste oil’ should be monitored since it is defined as “No dust, noise or other pollutant sources exist. To inhabit the noise caused by the explosives, the explosives will be used during the specific time during the day. Amount of solid and waste oil. Documents proving of proper handling such as bills, collection agreements” in the GS Passport /2/ and LSC Report /3/.	B.6.3.1 B.6.3.2	Soil condition and Other pollutants parameters are added under monitoring plan. 2nd round: Solid waste handling measures are added. Parameter name changed as the amount of waste is not realistic to monitor. Instead the treatment methods will be monitored.	<u>Review 1 (05/03/2014):</u> The parameter of “Soil Condition” and “Other Pollutants” is added to the monitoring plan. However, in the parameter of “Amount of solid and waste oil”, it is defined that waste oil will be monitored. Please also give an explanation about solid waste. <u>Hence, CAR 14 is not closed.</u> <u>Review 1 (11/03/2014):</u> The parameter of solid waste and waste oil is defined and will be monitored during the verification by checking service receipts or operation logs. <u>Hence, CAR 14 is closed.</u>
CR 1 The title of the project activity is defined as “Camlica-II HEPP” in the PDD version 01 of 19/09/2013 /1/ which is in line with the GS Passport /2/. However, the title is not same with the GS Registry.	A.1.1	A request has been sent to GS for correcting the Turkish character issue. 2nd round: Request has been issued and project name has been corrected. Changes can be confirmed via <u>markit public view</u>.	<u>Review 1 (28/02/2014):</u> Please provide an evidence to confirm the request. <u>Hence, CR 1 is not closed.</u> <u>Review 2 (11/03/2014):</u> The title of the project activity is revised as “CAMLICA II HEPP in the GS Registry.

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
			Hence, CR 1 is closed.
CR 2 The expected operational lifetime of the project is defined as 45 years in the PDD. However, it is presented as 47 years 2 months and 6 days in the Generation License /19/. Please clarify. The turbine technical lifetime is defined as 29 years in the PDD /1/. However, it could not be confirmed since technical brochure of the turbines was not provided to the validation team.	A.4.4	License is valid for 47 years and 2 months. Project lifetime is around 44 years. Lifetime of turbines are obtained from tool to determine remaining lifetime of equipment. Calculation is simple and conservative as given in financial model. 2nd round: As per “Special Provisions” article 2 of the revised license, the license is valid as of 09/02/2011. As per article 1, the construction end date is 15/04/2014. As per article 4, the license is valid for 47 years 2 months and 6 days. Therefore remaining lifetime is; (47years,2months,6days) - (3years,2months,6days)=44years. While the subtrahend being the difference between construction end date and license validity start date. (period of construction which corresponds to the license validity.) The table in Page 4 of the applied tool gives the technical lifetime of onshore wind turbines as 25 years. Project capacity is 15.4 MWe as per the original license and initial investment setup. Figure is used for consistency and will be monitored. 3rd round: Lifetime of the hydro turbines were selected as 150,000hours as per the tool default values. This figure was converted into year units dividing by the yearly operation hours in the excel sheet. Result	<u>Review 1 (28/02/2014):</u> Please give a clear definition or a calculation with supporting documents explaining the decreases in years. The generation license is referred for 5 years for the construction phase and before the construction. Therefore, remaining time is 42 years and 2 months for the operation. As per the “Tool to determine the remaining lifetime of equipment” /53/, option 3 is selected for determining the turbine lifetime - (c) Use default values. However, as per the calculation given in the IRR excel sheet, turbine lifetime is presented as 25 years. In the calculation the capacity of the project activity is defined as 15.4 MW. Please correct the calculation. <u>Hence, CR 2 is not closed.</u> <u>Review 2 (10/03/2014):</u> A clear definition and a calculation are given for the operational lifetime of the project activity. However, as per your review technical lifetime of onshore wind turbines was chosen instead of hydro turbines. Hydro turbines should be considered instead of wind turbines. In addition, as per the IRR excel sheet, turbine lifetime is calculated correctly as 25 years. However, it is mentioned as 29 years in the PDD. Please correct. <u>Hence, CR 2 is not closed.</u> <u>Review 3 (12/03/2014):</u>

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		of 25 years is applied in the calculations and “29-years” reference is removed from the PDD.	The technical lifetime of the turbines are now defined as 25 years in the PDD and in line with the calculation. Hence, CR 2 is closed.
CR 3 The project has three turbines according to the generation license /19/. Also the project boundary consists of the physical project area components which are diversion weir and powerhouse. However, it is not discussed in the “Project Boundary”, in the VCS PD /1/.	B.2.2	Project boundaries demonstrated more clearly.	Review 1 (28/02/2014): It is now discussed in the “Project Boundary”, in the VCS PD /1/ that the project has three turbines according to the generation license /19/. Also the project boundary consists of the physical project area components which are diversion weir and powerhouse. Hence CR 3 is closed.
CR 4 The Methodologies, Tools and Guidelines used in the investment analysis are not quoted in the PDD with their titles and version numbers.	B.4.4.1	Tools and guidelines used in the investment analysis are now referred in the related section.	Review 1 (05/03/2014): The PDD ver. 02 of 03/02/2014 is amended correspondingly. Guidelines and methodological tool are listed in the corresponding section B.5. Hence CR 4 is closed.
CR 5 Currency rates used in the IRR calculation sheet are not at the time of the investment decision taking (25/07/2011).	B.4.4.6	Rates available at time of FSR report has been used to be consistent.	Review 1 (05/03/2014): The approach of the PP is acceptable. The explanation is deemed sufficient. Hence CR 5 is closed.
CR 6 During on site visit, the project manager mentioned that the equipment agreement was signed with Koessler. However, equipment agreement is not provided to the validation team.	B.5.3.1	Kössler equipment agreement has been submitted to the DOE	Review 1 (28/02/2014): The equipment agreement - Kossler Gesellschaft mbH /64/ of 23/02/2012 is submitted to the Validation Team. Hence CR 6 is closed.
CR 7 The monitoring plan (data and parameters fixed ex ante) does not include all data and parameters fixed ex ante required by the applied methodology /10/ and baseline tool /12/. The parameters of $FC_{i,y}$ and $\eta_{m,y}$ should be added to the PDD for ex-ante parameters.	B.6.1.1	$FC_{i,y}$ will be monitored and $\eta_{m,y}$ has been added in the PDD 2nd round: $FC_{i,y}$ has been added under ex-ante parameters and removed from monitored parameters. 3rd round:	Review 1 (28/02/2014): The parameters fixed ex ante “ $FC_{i,y}$ ” is not a monitoring parameter. It was used for OM calculation and TEIAS statistics was chosen according to the excel sheet. Please correct. Hence CR 7 is not closed.

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		FCi,y parameter has been redefined.	<u>Review 2 (11/03/2014):</u> The parameters fixed ex ante “FCi,y” is added as ex-ante parameter. However, since it was used for OM calculation and TEIAS statistics was chosen according to the excel sheet, the source of data could not be defined as “Diesel generator working hours on-site records”. Please checked the parameter in the excel sheet and correct the source of data. <u>Hence CR 7 is not closed.</u> <u>Review 3 (12/03/2014):</u> The parameters fixed ex ante “FCi,y” is added as ex-ante parameter. The source of data is now defined correctly and the value of the parameter is based on TEIAS Statistics. <u>Hence CR 7 is closed.</u>
CR 8 The data unit of EG_{facility} mentioned as GWh in Section B.7.1 “Data and parameters to be monitored” in the PDD, is not in line with the methodology.	B.6.2.2	Unit of EG _{facility} has been changed in line with the applied methodology	<u>Review 1 (28/02/2014):</u> The data unit of EG_{facility} mentioned in Section B.7.1 “Data and parameters to be monitored” in the PDD is now revised as MWh/yr as per the methodology. <u>Hence CR 8 is closed.</u>

TABLE 3 FORWARD ACTION REQUEST

Forward action request	Reference to Table 1	Response by project participants	Validation conclusion
FAR 1			



RINA

**CERTIFICATO DI QUALIFICA
QUALIFICATION CERTIFICATE**

Si attesta che il sig./sig.ra:
We declare that Mr/Mrs/Ms:

Isil Timuroglu

è qualificato come¹:
is qualified as:

**CDM/GS/VCS/SCS- TEC, VAL, VER, TL
Local expert (Turkish language),
ITRP**

per le seguenti aree tecniche:
for the following technical areas:

1.2, 13.1

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
1.2	Energy generation from renewable energy sources	1
13.1	Waste handling and disposal	13

in accordo alle istruzioni della Divisione Certificazione.
in accordance with the instructions of the Certification Division.

REVISIONE REVISION	DATA DATE	MOTIVAZIONI PER LA REVISIONE REASON FOR THE REVISION
-	13/02/2012	-
5	07/11/2014	Update qualification according to IS-QPT-GHG-00 REV 13

Il Resp. QPT
Head of QPT

¹ Legend:

VAL: Validator
VER: Verifier
TEC: Technical Expert
TL: Team Leader
FIN-EXP: Financial Expert
DET: Determiner

CDM: Clean Development Mechanism
VCS : Verified Carbon Standard:
GS: Gold Standard
SCS: SocialCarbon Standard
JI: Joint Implementation

RINA Services S.p.A. è accreditato da UNFCCC, quale Entità Operativa Designata (DOE), per condurre la Validazione e la Verifica di Progetti CDM, da VCSA per condurre la Validazione e la Verifica di Progetti VCS, da GS Foundation, per condurre la Validazione e la Verifica di Progetti GS, da Ecologica Institute per condurre la Validazione e la Verifica di rapporti SCS

RINA Services S.p.A. is accredited by the UNFCCC, as Designated Operational Entity (DOE), to carry out Validation and Verification of CDM Projects, by the VCSA, to carry out Validation and Verification of VCS Projects, by the GS Foundation, to carry out Validation and Verification of GS Projects and by the Ecologica Institute, to carry out Validation and Verification of SCS Reports



RINA

**CERTIFICATO DI QUALIFICA
QUALIFICATION CERTIFICATE**

Si attesta che il sig./sig.ra:

Milkov Viktor

We declare that Mr/Mrs/Ms:

è qualificato come¹:
is qualified as:

CDM -TEC, -FIN EXP

per le seguenti aree tecniche:
for the following technical areas:

1.1, 1.2

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
1.1	Thermal energy generation	1
1.2	Renewables	1

in accordo alle istruzioni della Divisione Certificazione.
in accordance with the instructions of the Certification Division.

REVISIONE REVISION	DATA DATE	MOTIVAZIONI PER LA REVISIONE REASON FOR THE REVISION
0	13-04-2011	-
5	22-12-2014	Update qualification according to AS v6.0

Il Resp. QPT
Head of QPT

¹ Legend:

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RINA Services S.p.A. is accredited by the UNFCCC, as Designated Operational Entity (DOE), to carry out Validation and Verification of CDM Projects, by the VCSA, to carry out Validation and Verification of VCS Projects, by the GS Foundation, to carry out Validation and Verification of GS Projects and by the Ecologica Institute, to carry out Validation and Verification of SCS Reports



RINA

CERTIFICATO DI QUALIFICA QUALIFICATION CERTIFICATE

Si attesta che il sig./sig.ra:
We declare that Mr/Mrs/Ms:

Tugce Kiratli

è qualificato come¹:
is qualified as:

**CDM-TEC, JI-TEC, VCS-TEC, GS-TEC, VCS-VAL, VCS-
VER, GS-VAL, GS-VER, GS-TL, VCS-TL**

per le seguenti aree tecniche:
for the following technical areas:

1.2, 13.1

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
1.2*	Energy generation from renewable energy sources	1
13.1	Waste handling and disposal	13

*Just for GS and VCS, not for CDM

in accordo alle istruzioni della Divisione Certificazione.
in accordance with the instructions of the Certification Division.

REVISIONE REVISION	DATA DATE	MOTIVAZIONI PER LA REVISIONE REASON FOR THE REVISION
0	26/11/2012	-
5	07/11/2014	Update qualification according to IS-QPT-GHG-00 REV13

Il Resp. QPT
Head of QPT

¹ Legend:

VAL: Validator
VER: Verifier
TEC: Technical Expert
TL: Team Leader
FIN-EXP: Financial Expert
DET: Determiner

CDM: Clean Development Mechanism
VCS : Verified Carbon Standard:
GS: Gold Standard
SCS: SocialCarbon Standard
JI: Joint Implementation

RINA Services S.p.A. è accreditato da UNFCCC, quale Entità Operativa Designata (DOE), per condurre la Validazione e la Verifica di Progetti CDM, da VCSA per condurre la Validazione e la Verifica di Progetti VCS, da GS Foundation, per condurre la Validazione e la Verifica di Progetti GS, da Ecologica Institute per condurre la Validazione e la Verifica di rapporti SCS

RINA Services S.p.A. is accredited by the UNFCCC, as Designated Operational Entity (DOE), to carry out Validation and Verification of CDM Projects, by the VCSA, to carry out Validation and Verification of VCS Projects, by the GS Foundation, to carry out Validation and Verification of GS Projects and by the Ecologica Institute, to carry out Validation and Verification of SCS Reports



RINA

CERTIFICATO DI QUALIFICA QUALIFICATION CERTIFICATE

Si attesta che il sig./sig.ra:
We declare that Mr/Mrs/Ms:

Rita Valoroso

è qualificato come1:
is qualified as:

CDM -TEC, -VAL, -VER, -TL
TECHNICAL REVIEWER

per le seguenti aree tecniche:
for the following technical areas:

1.2, 13.1

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
1.2	Renewables	1
13.1	Solid Waste and waste water	13

in accordo alle istruzioni della Divisione Certificazione.
in accordance with the instructions of the Certification Division.

REVISIONE REVISION	DATA DATE	MOTIVAZIONI PER LA REVISIONE REASON FOR THE REVISION
0	18-01-10	-
9	22-12-2014	Update qualification according to AS ver.6.0

Il Resp. QPT
Head of QPT

¹ Legend:

VAL: Validator
VER: Verifier
TEC: Technical Expert
TL: Team Leader
FIN-EXP: Financial Expert
DET: Determiner

CDM: Clean Development Mechanism
VCS : Verified Carbon Standard:
GS: Gold Standard
SCS: SocialCarbon Standard
JI: Joint Implementation

RINA Services S.p.A. è accreditato da UNFCCC, quale Entità Operativa Designata (DOE), per condurre la Validazione e la Verifica di Progetti CDM, da VCSA per condurre la Validazione e la Verifica di Progetti VCS, da GS Foundation, per condurre la Validazione e la Verifica di Progetti GS, da Ecologica Institute per condurre la Validazione e la Verifica di rapporti SCS

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