

FINAL VALIDATION REPORT

“TOROS HYDROELECTRIC POWER PLANT”

**RINA****RINA SERVICES S.P.A.**

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Summary:

RINA Services S.p.A. (RINA), commissioned by Bereket Enerji Uretim A.S., has performed the validation of the project activity "Toros Hydroelectric Power Plant" in Turkey, with regard to the relevant requirements for CDM and VCS activities.

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 VCS Version 3 and GHG program applied, on the basis of the project design document. The validation scope is to review the VCS PD against the UNFCCC criteria for CDM and VCS Version 3 Requirements.

Validation was conducted using RINA procedures in line with the requirements specified in the CDM M&P, the latest version of the CDM Validation and Verification Standard, and relevant decisions of the COP/MOP and the CDM EB and applying standard auditing techniques. The validation consisted of desk review, on-site assessment and the resolution of outstanding issues and the issuance of the final validation report.

The verification shall ensure that reported emission reductions are complete and accurate in accordance with applicable VCS Version 3 requirements, which refer to CDM rules, in order to be certified.

In conclusion, it is RINA's opinion that the project activity "Toros Hydroelectric Power Plant", in "Turkey", as described in the VCS PD version 2.02 of 20/04/2015, meets all relevant requirements for VCS activities and all relevant host Party criteria and correctly applies the baseline and monitoring methodology "ACM0002", "Grid-connected electricity generation from renewable sources", version 16.0 of 28/11/2014.

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Appendix A: VCS Validation Protocol

1 INTRODUCTION

Bereket Enerji Uretim A.S. has commissioned RINA to carry out the validation of the project “Toros Hydroelectric Power Plant” project in Turkey.

This report summarizes the findings of the validation of the project, performed on the basis of VCS Requirements and UNFCCC criteria for CDM, 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 VCS Version 3 and GHG program applied, on the basis of the project design document. In particular, the project's baseline, monitoring plan, and the project's compliance with relevant VCS Version 3 requirements, GHG program 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 VCS projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of Voluntary Carbon Units (VCUs).

1.2 Scope and Criteria

The validation scope is to review the VCS PD against the UNFCCC criteria for CDM and VCS Version 3 Requirements.

UNFCCC criteria for CDM refer to Article 12 of the Kyoto Protocol, the CDM modalities and procedures, the procedures for registration of program of activity as a single CDM and the subsequent decisions by the CDM Executive Board.

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.

1.3 Level of assurance

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 VCS VER validation and verification. The validation team and the technical reviewers consist of the following personnel:

Role/Qualification	Last Name	First Name	Country
VCS Team Leader, VCS Validator, VCS Technical Expert	Valoroso	Rita	Italy
VCS Validator, VCS Technical Expert	Tong	Wing Yu	Italy
VCS Validator, VCS Technical Expert	Alfieri	Felice	Italy

Local expert	Zor	Hasan	Turkey
Technical Reviewer	Menon	Rekha	India

1.4 Summary Description of the Project

The proposed project activity is to construct a hydroelectric power plant (HEPP) with a total installed capacity of 49 MW [/11/](#), which consists of a dam with an elevation level of 700 m, a diversion tunnel of 11,860 m, a canal, a penstock, two turbines with a unit capacity of 25.6 MWm, two generators with an unit capacity of 24.5 MWe. The power generated from the project will be transmitted to the Turkish National grid [/24/](#) via one of the transformer Substations at 154 KV with a transmission line of 15 km. It is envisaged that the project activity will generate 239,400 MWh of electricity and delivered to the Turkish National grid annually. The project is located at the Cakit River, which is close to Belemelik Village within the jurisdiction of Pozanti Town in Adana Province of Turkey.

2 VALIDATION PROCESS

2.1 Method and Criteria

Validation was conducted using RINA procedures in line with the VCS Version 3 requirements and the requirements specified in the CDM M&P, the latest version of the CDM Validation and Verification Standard, and relevant decisions of the COP/MOP and the CDM EB and applying standard auditing techniques.

The validation consisted of the following three phases:

- Document review;
- On-site assessment;
- The resolution of outstanding issues and the issuance of the final validation report and certification.

2.2 Document Review

The VCS PD version 2.02 of 20/04/2015 [/1/](#), 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 emission reduction calculations provided in the form of a spreadsheet "TorosHydro_CM_2012v2.0" [/5/](#) submitted on 01/05/2015, financial analysis spreadsheet "TorosHPPFinancialAnalysisV2.0" [/16/](#) submitted on 01/05/2015 were assessed as part of the validation.

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

/01/	Bereket Enerji Uretim AS and Turkuaz Karbon Varlik Yonetimi Enerji Proje ve Dan. Sa. lth. lhr. Ltd. Sti: PDD for project activity "Toros Hydroelectric Power Plant", version 01.00 of 10/03/2011. 02.01 of 18/04/2015, 2.02 of 20/04/2014
/02/	CDM Executive Board: CDM Validation and Verification Standard, version 09.0 of 20/02/2015
/03/	CDM Executive Board: Baseline and monitoring methodology "ACM0002", "Consolidated Baseline Methodology for Grid-connected electricity generation from renewable sources", version 16 of 28/11/2014.

/04/	CDM Executive Board: Methodological tool "Tool to calculate the emission factor for an electricity system" version 02 of 16/10/2009, version 02.1 of 15/04/2011 and version 0.2.2 of 03/06/2011
/05/	Bereket Enerji Uretim AS: Emission Reduction calculation spreadsheet "Toros_CM_2010.xls" of 10/03/2011 and TorosHydro_CM_2012v2.0 of 25/03/2015
/06/	VCS Verified Carbon Standard: VCS Standard, VCS Version 3.5 of 08/10/2013
/07/	VCS Verified Carbon Standard: VCS Program Guide, VCS Version 3.5 of 08/10/2013
/08/	VCS Verified Carbon Standard: VCS Project Description Template VCS Version 3.2 of 08/10/2013
/09/	Chamber of Commerce in Denizli: Certificate of Activity to Bereket Enerji Uretim A.S., issued on 06/04/2011
/10/	AKTAN MUHENDISLIK PRJ. iNS. SAN. Ve TiC. LTD. STi., Environmental Impact Assessment (EIA) Report for Toros HEPP, dated 2008
/11/	Bereket Enerji Uretim AS: Feasibility Study Report (FSR) for HEPP, dated July 2005.
/12/	CDM Executive Board: Glossary of CDM Terms, version 08, dated 20/02/2015.
/13/	Coskun, A.A.: An Evaluation of the Environmental Impact Assessment System in Turkey. International Journal of Environment and Sustainable Development, Vol 4. No. 1 pp. 47-44 of 2005
/14/	Turkish Electricity Transmission Company (TEIAS): Turkish Electricity Generation-Transmission Statistics. Annual Development of Turkey's Installed capacity by primary energy resources (1984-2009) Language: English, Last Retrieved: 29/04/2011, Link: http://www.teias.gov.tr/istatistik2009/3.xls Annual Development of turkey's Installed Capacity By the Electricity Utilities (2006-2009) Language: English, Last Retrieved: 29/04/2011, Link: http://www.teias.gov.tr/istatistik2009/6.xls Annual Development of Installed Capacity and Generation in Turkey (1970-2009) Language: English, Last Retrieved: 29/04/2011, Link: http://www.teias.gov.tr/istatistik2009/13.xls Annual Development of Electricity Generation-Consumption and Losses in Turkey (1984-2009) Language: English, Last Retrieved: 29/04/2011, Link: http://www.teias.gov.tr/istatistik2009/30(84-09).xls Fuel consumed in thermal P.Ps in Turkey by the electricity Utilities (2006-2009) Language: English, Last Retrieved: 29/04/2011, Link: http://www.teias.gov.tr/istatistik2009/44.xls Heating Values of fuels consumed in thermal P.Ps in Turkey by the electricity Utilities (2006-2009) Language: English, Last Retrieved: 29/04/2011, Link: http://www.teias.gov.tr/istatistik2009/46.xls
/15/	CDM Executive Board: Methodological Tool "Tool for the Demonstration and assessment of Additionality", version 7.0.0 of 23/11/2012
/16/	Bereket Enerji Uretim AS and Turkuaz Karbon Varlik Yonetimi Enerji Proje ve Dan. Sa. lth. lhr. Ltd. Sti: Financial analysis Calculation: "Toros_Financial_AnalysisV.1.0" received on 21/03/2011, TorosHPPFinancialAnalysisV2.0 received on 01/05/2015.
/17/	Bereket Enerji Uretim A.S.: Minute of Board Meeting for investment decision seeking for carbon finance, dated 03/02/2008
/18/	Bereket Enerji Uretim A.S.: Minute of Board Meeting for Starting the Construction of Toros HEPP, dated 15/04/2008.
/19/	Correspondence between Det Norske Veritas (DNV) and the CDM Executive Board: "Request for guidance: Application of AM0005 and AMD-I.D. in China." Language: English Link: http://cdm.unfccc.int/UserManagement/FileStorage/6POIAMGYOEDOTKW25TA20EHE

	KPR4DM of 07/10/2005. “Request for clarification on use of approved methodology AM0005 for several projects in China. Language: English, Last Retrieved date: 02/05/2011, Link: http://cdm.unfccc.int/UserManagement/FileStorage/AM_CLAR_QEJWJEF3CFBP1OZA/K6V5YXPQKK7WYJ”
/20/	CDM Executive Board: Guidelines for the Reporting and Validation of Plant Load Factors (PLF) version 01, EB 48 Annex 11 of 17/07/2009.
/21/	TEIAS: 10 Years of Electricity Production Capacity Projection, Language: Turkish (2006-2015), Link: http://www.epdk.gov.tr/documents/10157/70d5f8ce-9da8-44c4-bef8-84b7505dccc3, dated June 2006 (2007-2016), Link: http://www.epdk.gov.tr/documents/10157/33530293-81bc-4b6d-b578-31164701b62f, dated July 2007 (2009-2018) Link: http://www.epdk.gov.tr/documents/10157/ddb52b2e-f6d4-45bc-8611-200de3607ab4, dated June 2009 (2010-2019), Link: http://www.epdk.gov.tr/documents/10157/e03b4905-d255-4128-9dd9-f38244a60ea4 date October 2010.
/22/	Intergovernmental Panel on Climate Change (IPCC): 2006 IPCC Guideline for National Greenhouse Gas (GHG) Inventory, Volume 2: Energy, dated April 2006.
/23/	DSI (Host Country Authority that approves the FSR) Approval provided as “Doc1-DSIFeasibilityApproval” of 24/03/2006
/24/	Electricity Production License - provided as “Doc2-Toros lisans of 18/01/2007”
/25/	Connection Agreement between Bereket Enerji Uretim A.Ş and Doc5-torosHPPConnectionAgreement and Turkish Electricity Transmission Company (TEIAS) provided by the Doc5-torosHPPConnectionAgreement dated 09/12/2010
/26/	Loan Agreement provided by the doc “Doc6-TorosLoanAgreement” dated 24/09/2009
/27/	EIA Certifications provided by “Doc7-TorosEIACertifications”, of 23/06/2010
/28/	Certificate of provisional acceptance on 17 May 2013 provide by the “Doc8-TorosCertificateofProvisionalAcceptance”
/29/	Correspondence with all the relevant authorities considered as stakeholders: “Doc9a-DomesticSolidLiquidWasteRemovalProtocolWithPozantiMunicipality” “Doc9b-SampleProgressReporttoEMRA” “Doc9c-Correspondence withForestry” “Doc9d-CorespondenceReltoa nearbyPipeline”
/30/	The Environmental Law (No. 2872), published in Turkish Official Gazette No. 18132 dated August 11, 1983 and revised in Turkish Official Gazette No. 26167 dated May 13, 2006 (Law No. 5491)
/31/	Law 5346 numbered Utilization of Renewable Energy Resources for the Purpose of Generating Electrical Energy;
/32/	Website: https://mer.markit.com/br-reg/public/index.jsp?entity=project&sort=project_name&dir=ASC&start=0&entity_domain=MarkitGoldStandard Argument: Markit Project Database Language: English
/33/	CDM Executive Board: Methodological Tool “Tool to calculate the emission factor for an electricity system”, version 04.0 of 04/10/2013
/34/	CDM Executive Board: EB 62 Report Annex 5 Guidelines on The Assessment of Investment Analysis (Version 05)
/35/	Income Tax Law number 5281 promulgated in the 3rd reiterated Official Gazette numbered 25687 as of 31 December 2004
/36/	V.A.T. Law No:3065 promulgated in the Official Gazette No 18563, dated 2 November 1984, put into force on 1 January 1985)

/37/	"Tool to determine the remaining lifetime of equipment" (EB 50 Report, Annex 15 version 0.1)
/38/	Bereket Enerji Uretim AS: Toros_realized_values.xlsx
/39/	TEIAS: Annual Development of Installed Capacity Generation in Turkey (1970-2011) http://www.teias.gov.tr/TürkiyeElektrikİstatistikleri/istatistik2011/kgucunkullanım(13-21)/13.xls
/40/	TEIAS: Annex 1 to the Capacity Projection report (http://www.teias.gov.tr/KAPASITEPROJEKSİYONU2012.pdf).

2.3 Interviews

On 31/03/2011, RINA visited the project site, located at the Cakit River, which is close to the Belemelik Village, Pozanti of Adana Province, Turkey to resolve questions and issues identified during the document review and to perform interviews with relevant stakeholders in the host country.

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

	Date	Name and Role	Organization	Topic
/a/	31/03/2011	Murat Faik Ozcelik (VCS Consultant)	Ekobil Environmental and Agricultural Services Ltd.	Applicability of the methodology, Additionality, Emission Reduction Calculation, Monitoring Plan, Environmental Impacts, Local Stakeholders Consultation Process and Results.
/b/	31/03/2011	M. Zahid Karakaya (Managing Partner)	Turkuaz Karbon Varlik Yonetimi Enerji Proje ve Dan. Sa. Ith. Ihr. Ltd. Sti.	Applicability of the methodology, Additionality, Emission Reduction Calculation, Monitoring Plan, Environmental Impacts, Local Stakeholders Consultation Process and Results, project ownership, rejection of the project from other GHG programs, eligibility of the project as VCS.
/c/	31/03/2011	Emre Ozer (Project Financial Department Assisting Manager)	Bereket Enerji Uretim AS	Project Design, Additionality, Emission Monitoring Plan, Environmental Impacts, Local Stakeholders Consultation Process and Results.

/d/	31/03/2011	Ozgun Gul (Project Financial Department Assistant)	Bereket Enerji Uretim AS	Project Design, Additionality, Emission Monitoring Plan, Environmental Impacts, Local Stakeholders Consultation Process and Results.
/e/	31/03/2011	Oner Guzel (Plant Manager)	Bereket Enerji Uretim AS	Project Design and Implementation
/f/	31/03/2011	Engin Piltan Cartographer / topography expert	Bereket Enerji Uretim AS	Project Design and Implementation
/g/	31/03/2011	Necdet Ay (Headman)	Headman of the Belemelik Village	Confirmation of the elements discussed during the local stakeholders meeting

2.4 Site Inspections

On 31/03/2011, RINA visited Bereket Enerji, the project site located at the Cakit River, to resolve questions and issues identified during the document review and to perform interviews with relevant stakeholders in the host country. All the documents submitted by the project proponent were available in English or in Turkish language.

Representatives of the project proponent “Bereket Enerji Uretim AS” and consultants were interviewed about the description of the project activity, baseline and additionality, eligibility criteria, emission reductions calculations, monitoring plan and monitoring arrangements, investment analysis, implementation of the project, methodology applicability and crediting period of the project activity. The quality control and quality assurance procedures were confirmed through the onsite observation and interviews with the project employee.

2.5 Resolution of Findings

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 VCS Version 3 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 VCS Version 3 requirements have been met.

2.6 Forward Action Requests

No FAR is raised during the validation.

Figure 1 VCS 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, CR and FAR see the definitions above. OK is used if the information and evidence provided is adequate to demonstrate compliance with CDM/VCS 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 CR is explained.	The responses given by the project participants to address the CARs and/or CRs.	The validation team's assessment and final conclusion of the CARs and/or CRs.

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.

3 VALIDATION FINDINGS

3.1 Project Details

The purpose of the proposed project activity is to supply electricity to the Turkish National Power Grid to satisfy the growing electricity demand of the country by installing a new HEPP on the Cakit River, which is close to the Beledik Village, Pozanti Town in Adana Province, Turkey.

The total installed capacity of the project activity is 49 MW, which consists of two turbines, each with an unit capacity of 24.5 MW. It is noted that the installed capacity of the project activity is defined in accordance with the capacity of the generators.

The project was under construction at the time of site visit on 31/03/2011. Since 17 May 2013 the project started to supply electricity to the Turkish grid /28/.

Project proponent

The project proponents and their responsibility are clearly defined under Section 1.3 of the VCS PD version 02 /1/. Bereket Enerji Üretim Anonim Şirketi. is the project proponent and Turkuaz Karbon Varlık Yönetimi Enerji Proje ve Dan. San. İth. İhr. Ltd. Şti. is in charge of the preparation of the Project Description Document.

Project start date

17 May 2013 is the date when the project started to supply electricity to the Turkish grid as substantiated by the partial acceptance letter sent to the Governance of Adana Province, Adana-Turkey /28/ in line with the VCS Standard /6/.

As per the VCS Standard /6/, the project start date is the date on which the project began generating GHG emission reductions or removals. The defined starting date is also in line with the ACM0002 /3/.

Project crediting period

A renewable crediting period of 10 years has been chosen for the project activity. The first crediting period starts from 17/05/2013 to 16/05/2023.

Project scale and estimated GHG emission reductions or removals

The estimated average annual emission reductions from the project are estimated to be on the average 127,655 tCO₂e for Turkey per year over the selected 10 year crediting period.

Projects are categorized by size according to their estimated average annual emission reductions or removals according to VCS Standard /6/. Since the estimated annual emission reductions resulting from the project is less than 300,000 tCO₂e, the category of the project is defined as "Project" as per the VCS Standard /6/.

Project location

The project is located in Adana province, along the Çakit Stream. The project area coordinates are listed below and confirmed through the Feasibility Reports /11/.

Power Units	Latitude (N)	Longitude (E)
Toros Power House	37°16'50.82"N	34°59'59.35"E
Toros Weir Point 1	37°21'38.73"N	34°54'54.15"E
Toros Weir Point 2	37°21'40.01"N	34°54'59.19"E
Toros Surge Pond	37°16'54.80"N	34°59'12.33"E

Project compliance with applicable laws, statutes and other regulatory frameworks

The relevant applicable local laws and regulations related to the project are given below:

- Environmental Law /30/
- Regulation 5346: Utilization of Renewable Energy Resources for the Purpose of Generating Electrical Energy /31/

The project is in compliance with the given laws. According to the rules and regulations at the time of licence application for electricity production the project was given a certificate of Exemption for the EIA process, by the Adana Provincial Directorate of Environment and Forestry /27/. Because, at the time of licence application the Hydro Power Plants that had installed capacity lower than 50 MW was considered to be out of scope according to EIA regulation that was active during the period of application. This letter is attached in Appendix III of the PDD.

Ownership and other programs

Right of use: Ownership of the plant, equipment and electricity generation license /24/ belongs to Bereket Enerji Üretim Anonim Şirketi and all emission reductions/removals are granted to the company.

Emissions trading programs and other binding limits: Net GHG emission reductions or removals generated by the project will not be used for compliance with an emissions trading program or for meeting binding limits on GHG emissions.

Participation under other GHG programs: The project has not been registered or seeking registration under other GHG programs as confirmed through the Markit project database /32/.

Other forms of environmental credit sought or received: The project has not created another form of Environmental Credit.

Rejection by other GHG programs x The project has not been submitted for other GHG programs

Additional information relevant to the project

Eligibility criteria for grouped projects:

The project is not a grouped project.

Commercially sensitive information:

Loan Agreement is confidential.

Any further information:

Not applicable.

3.2 Application of Methodology

3.2.1 Title and Reference

The CDM approved baseline and monitoring methodology ACM0002 version 16.0: “Grid-connected electricity generation from renewable sources” /3/ is correctly applied for the project activity.

3.2.2 Applicability

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

- The project activity involves the installation of a new Greenfield run-of-river hydroelectric power plant along the Çakır Stream in Turkey /11/. At this site no renewable power plant was operated prior to the implementation of the project activity.
- The project involves the construction of a regulation pond with a surface of 42,878 m² /26/. And the apparent powers of the turbines are 49,000,000 W, as confirmed through the calculation given in the VCS PD as per the Feasibility Reports /11/. The resulting power density is therefore 1,142.78 W/m². The power density is higher than 4 W/m² as required by the methodology.
- The project does not include any retrofit, capacity addition or replacement of an existing power plant.
- The project activity does not involve any change from fossil fuel use to renewable or biomass power plant.

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 /15/
- Methodological Tool “Tool to calculate the emission factor for an electricity system”, version 04.0.0 of 04/10/2013 /33/ and meets the defined criteria as it ensures that:

RINA hereby confirms that the selected baseline and monitoring methodology has been previously approved by the CDM Executive Board, and is applicable to the Project, which complies with all the applicability conditions therein.

3.2.3 Project Boundary

The project boundary clearly defined in accordance with the applied methodology, According to the approved baseline and monitoring methodology “ACM0002 /3/”, “Grid-connected electricity generation from renewable sources” 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	According to ACM0002, only CO ₂ emissions from

Project emissions		electricity generation should be accounted for.
	CH ₄	Excluded according to methodology of ACM0002.
	N ₂ O	Excluded according to methodology of ACM0002.
	CO ₂	Emissions from back-up generators are negligible according to methodology of ACM0002.
	CH ₄	Excluded according to methodology of ACM0002.
	N ₂ O	Excluded according to methodology of ACM0002.

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 VCS PD is accurate and complete, and also that the selected sources and gases are justified for the proposed project activity.

The project does not involve other emission sources not foreseen by the methodology [/3/](#), which contribute by more than 1%.

3.2.4 Baseline Scenario

According to the approved baseline methodology ACM0002 [/3/](#), the baseline scenario is “Electricity delivered to the grid by the project would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid”. Since the baseline is defined by the approved methodology, no further analysis is required as per the paragraph 124 of the VVS [/2/](#).

The approved baseline methodology “Grid connected renewable electricity generation” 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 VCS project activity.

3.2.5 Additionality

Choice of approach

The project uses approved methodologies “ACM0002 [/3/](#)”, “Grid-connected electricity generation from renewable sources”, version 16.0 of 28/11/2014. According to the methodology, additionality needs to be established in accordance with the latest version of “Tool for the Demonstration and Assessment of Additionality”, which is version 07.0.0 at the time of documents submission [/15/](#).

According additionality tool [/15/](#), the investment analysis can be carried out through (1) simple cost analysis, (2) investment comparison analysis or (3) benchmark analysis. The project participants have correctly applied the benchmark analysis as the appropriate analysis method and justified their choice in the PDD [/1/](#), noting that there are non-carbon revenues so that the simple cost analysis cannot be used, and that there is no alternative investment, so that the investment comparison analysis cannot be used.

Benchmark selection

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 [/15/](#) and the Guidelines for the

Investment Analysis, ver.05 /34/. The project generates economic benefits other from selling carbon credits so Simple Cost Analysis is not applicable. It is stated in the VCS PD that investment comparison analysis is applicable to projects where alternatives should be similar investment projects in terms of generation capacity so the only applicable method is benchmark analysis.

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 /15/.

The benchmark used is defined in line with the default values for equity IRR recommended by the Guidelines for the Investment Analysis, ver.05 /34/.

The benchmark is set at 12.75% The Guidelines for Investment Analysis provides the default values for the expected return on equity as an appendix, and Moody's index values of most of the CDM Countries /34/. Turkey's Moody's index at the time of investment decision, (Ba3) is comparable to country's with the same Moody's index such as Bangladesh, Montenegro, Philippines, Uruguay and Viet Nam, from this point of view a reasonable and appropriate benchmark to compare the Equity IRR was taken as 12.75 % /34/, equal to the Equity IRR of the Countries mentioned before.

Choice of financial indicators

The PP has identified the equity IRR after taxes as the most suitable financial indicator for the project and corresponding to the type of the benchmark applied, according to the Guidelines on the Investment Analysis", ver.05 /15/

The equity IRR of 10.30% is calculated based on the input parameters that have been valid at the time of investment decision taking on May 2008, which is the start date of the construction work /18/. The equity IRR is calculated after taxes, which is in line with the type of the benchmark.

The audit team checked the relevant data and parameters and confirmed their correctness and justification.

Input parameters

The main input parameters for the calculation of the IRR are as follows:

Parameter	Value	Unit
Installed Power	49.00	MW
Annual Electricity Generation	239,400	MWh/yr
Average Electricity Selling Price	60.00	USD/MWh
Total Investment	65,887,378	USD
Inv. Analysis period length	20	yrs
Annual Operation Costs	1,008,955.09	USD/yr
USD/TL Exchange Rate	1.6	N/A
VAT Rate	18.0	%
Income Tax	20.0	%
xLoan Period	12	Years
x Technical lifetime for main equipment	20	Years
Fair Value	25,072,487.42	USD

1. **Installed power total of 49. MWe.** The Installed power was checked by studying the FSR /11/ and the Electricity Production License /24/.
2. **Annual Electricity Generation of 239,400 GWh/y.** Toros Electricity Production Licence Dated 18/01/2007 numbered EÜ/1062-2/782 page 7 /24/
3. **Average electricity selling price of 60 US\$/MWh.** Based on assumptions presented in the FSR /11/.
4. **Total Investment 65,887,378 US\$.** Based on assumptions presented in the FSR /11/.
5. **Investment Analysis period length of 20 years.** The duration of the investment analysis is in line with the requirements of the "Guidelines on the Investment Analysis", ver.05 /15/. This is in line with the lifetime of the project. The technical lifetime of the project activity (47 years) calculated according to the "Tool to determine the remaining lifetime of equipment" /37/ is longer than the crediting period (10 years, renewable twice),
6. **Annual Operating Cost, System usage cost of 1,008,955.09 US\$ total.** The costs of both were checked by studying the FSR /11/.
7. **USD/TL Exchange Rate of 1.6.** This value has been used by the FSR /11/ and has been valid at the time of its preparation. The exchange rate is verified by the DOE.
8. **VAT rate of 18% and Corporate Tax Rate of 15% in Turkey.** The stated values were confirmed by the DOE by checking the V.A.T. Law No:3065 and Income Tax Law number 5281 /35/ /36/.
9. **Fair Value: 25,072,487.42 US\$.** The fair value of the project activity assets at the end of the assessment period is applied as a cash inflow in the final year of the IRR calculation /05/. The fair value determined was verified according the Guideline on the Assessment of Investment Analysis /34/.

All relevant data and parameters listed above were checked and their correctness was confirmed and were available at the time of decision making. The actual value of the main input data (investment costs, electricity selling price and annual electricity generation) have been provided by the PP /38/ /. These values have been crosschecked with the value at the time of investment decision. The actual values reduce the actual value of the IRR.

Sensitivity analysis

The sensitivity analysis is performed as per the "Tool for the demonstration and assessment of additionality", (Version 07.0.0) /14/ and includes key parameters contributing to more than 20% of the revenue/costs during operating or implementation.

Sensitivity analysis has been carried out according to the basic conditions when the investment decision is taken. Sensitivity analysis has been carried out for three main parameters identified: Investment Cost, Operating Cost, and Electricity Revenue.

The variations have been made with +/-10% variance which is in line with the Guidelines on the Assessment of Investment Analysis, ver.05 /15/ and for that type of projects.

Parameters	-10%	0%	+10%
Investment cost	12.70%	10,30%	8.68%
Operating cost	10.42%	10,30%	10.17%

Electricity Revenue	8.59%	10,30%	11.95%
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The PP has thoroughly analyzed the possible variations +/- of the chosen parameters and has demonstrated that these variations are in fact terminal and there will be no chance to go beyond the chosen limits. The key parameters have been varied to reach the benchmark and the likelihood of this happening has been justified to be small.

The actual variation of the chosen parameters has been also discussed according to the evidences provided /38/. The PP has demonstrated that there is no chance to go beyond the chosen limits.

Investment Cost: during the course of the validation process the project activity became operational and based on the accounts records of the project owner, the investment cost has finalized as approximately 77,000,000 USD /38/ against the estimated 65,887,378 /11/. This is already about 18 % higher than the amounts estimated at the time of investment decision then there is no chance to go beyond the chosen limit. Operating cost: according to the sensitivity analysis results is evident that the change in operating has a negligible Impact on the IRR calculation, thus there is no chance to go beyond the chosen benchmark.

Electricity Revenue: the actual electricity revenues are between 4 to 4.13 cents per kWh /38/. This is also below the estimated electricity sales prices /11/ thus there is no chance to go beyond the chosen benchmark.

Common Practice

According to the methodological tool for the demonstration and assessment of additionality /14/, the common practice analysis shall be conducted applying the following steps:

Step 1: 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 49 MWe; therefore, the applicable output range is 24.5 MWe to 73.5 MWe.

Step 2: The applicable geographical area for the proposed project covers the the Seyhan Catchment area. The investment conditions and the water regimes are similar in this area that this is considered to be the applicable geographic area. All plants that deliver the same output, within the applicable output range calculated in Step 1, as the proposed project activity and have started commercial operation before the start date of the project are defined as N_{all} . The total number of N_{all} is calculated as 2 in the PDD /01/.

Step 3: The power plants apply technologies different that the technology applied in the proposed project activity are identified as N_{diff} . Seyhan HPP was developed very early in history by the government and has totally different investment conditions. Seyhan is not a run off river project but is rather a Dam that became operational in 1958. Thus, N_{diff} is 1.

Step 4: 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. Factor F is calculated to be $0.5 > 0.2$, however $N_{all}-N_{diff} = 2-1=1 < 3$ in that case the Toros HPP is not common practice. In conclusion the proposed project activity is deemed to be additional

according to ACM0002 and the tool and guideline for the demonstration and assessment of additionality /3/ /14/.

Quantification of GHG Emission Reductions and Removals

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).

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 to the methodological "Tool to calculate the emission factor for an electricity system". The relevant electric power system is identified in accordance with the tool /33/. For the calculation of the Simple OM, the "Ex-Ante" option is selected, The data used in calculation of the Simple OM taken from the TEIAS website were crosschecked /39/. The build margin emissions factor is the generation-weighted average emission factor (tCO_2/MWh) of all power units m during the most recent year y for which power generation data is available, calculated as follows. Regarding the BM the list of units providing electricity to the year 2011 Turkish Electricity Grid has been crosschecked /40/. The OM is calculated to be $0.65716 tCO_2e/MWh$ and the BM is calculated to be $0.40930 tCO_2e/MWh$ /05/. The values were calculated according to the "Tool to calculate the emission factor for an electricity system" The combined grid emission factor of the grid is determined ex-ante for the ten 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 $0.53323 tCO_2e/MWh$ and it is correctly calculated according to the tool to calculate the emission factor for an electricity system /04/.

The net electricity supplied by the project activity to the grid is estimated to be 239,400 MWh/year according to the electricity production license /24/. The annual baseline emissions generated by the project activity is correctly calculated to be $127,655 tCO_2e/year$.

Project Emissions

The project activity is a newly built hydropower project activity with a reservoir. The emission of the reservoir area is calculated as given below:

$$PD = \frac{Cap_{PJ} - Cap_{BL}}{A_{PJ} - A_{BL}}$$

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 reservoir 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 reservoir 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.

$$A_{pj} = 42,878 \text{ m}^2$$

$$A_{bl} = 0 \text{ m}^2$$

$$Cap_{pj} = 49,000,000 \text{ W}$$

$$Cap_{bl} = 0 \text{ W}$$

Therefore the Power Density of the project activity is:

$$49,000,000 / 42,878 = 1,142.78 \text{ W/m}^2$$

The project activity has a power density of $1,142.78 \text{ W/m}^2$, which is larger than 10 W/m^2 . As per the applied methodology ACM0002 version 16.0.0 [/3/](#), the project emissions are Zero.

Leakage

No leakage emissions are considered. The emissions potentially arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g. extraction, processing, transport etc.) are neglected.

Emission Reductions

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

$$ER_y = BE_y - PE_y - LE_y$$

$$ER_y = BE_y$$

$$= 127,655 \text{ tCO}_2\text{e/year}$$

The annual emission reductions generated by the project activity is calculated to be 127,655 tCO₂e/year over the selected 10 years renewable crediting period.

The estimation of the emission reductions can be replicated using the data and parameter values provided in the VCS PD [/1/](#) and supporting file [/5/](#). 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.

3.2.6 Methodology Deviations

There are no deviations about the methodology of the project activity.

3.2.7 Monitoring Plan

The approved baseline and monitoring methodology "ACM0002", "Grid-connected electricity generation from renewable sources", version 16.0 of 28/11/2014 [/3/](#) 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 VCS 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 VCS PD and are provided in compliance with the methodology:

	Data / Parameter	Unit	Value applied		Assessment																		
/1/	$FC_{i,y}$	mass or volume unit	Table 1: Source: http://www.teias.gov.tr/TürkiyeElektrikİstatistikleri/istatistik2011/yakit46-49/47.xls		Checked the source of data and data applied: http://www.teias.gov.tr/TürkiyeElektrikİstatistikleri/istatistik2011/yakit46-49/47.xls																		
/2/	NCV	GJ/mass or volume unit	According to the Turkish Electricity Transmission Company Web Site http://www.teias.gov.tr/TürkiyeElektrikİstatistikleri/istatistik2011/yakit46-49/49.xls		Checked the source of data and data applied: http://www.teias.gov.tr/TürkiyeElektrikİstatistikleri/istatistik2011/yakit46-49/49.xls																		
/3/	$EF_{CO2,i,y}$	(tCO2/TJ)	<table><tr><td>Fuel Type:</td><td>EF (tCO2/TJ)</td></tr><tr><td>Coal</td><td>92.80</td></tr><tr><td>Lignite</td><td>90.90</td></tr><tr><td>Fuel Oil</td><td>75.50</td></tr><tr><td>Diesel</td><td>72.60</td></tr><tr><td>LPG</td><td>61.60</td></tr><tr><td>Naphtha</td><td>69.30</td></tr><tr><td>Natural Gas</td><td>54.30</td></tr><tr><td>Bitumen</td><td>73.00</td></tr></table>		Fuel Type:	EF (tCO2/TJ)	Coal	92.80	Lignite	90.90	Fuel Oil	75.50	Diesel	72.60	LPG	61.60	Naphtha	69.30	Natural Gas	54.30	Bitumen	73.00	Checed by Table 2.2.Default Emission Factors for Stationary Combustion in the Energy Industries, Vol.2. Energy, 2006 IPCC Guidelines for National Greenhouse Gas Inventories, (http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_2_Ch2_Stationary_Combustion.pdf)
Fuel Type:	EF (tCO2/TJ)																						
Coal	92.80																						
Lignite	90.90																						
Fuel Oil	75.50																						
Diesel	72.60																						
LPG	61.60																						
Naphtha	69.30																						
Natural Gas	54.30																						
Bitumen	73.00																						

Parameters Monitored Ex-post

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

	Parameter	Description/Assessment
/1/	$EG_{\text{facility},y}$ (MWh/yr)	Quantity of net electricity generation supplied by the project plant to the grid in year y. Data will be monitored continuously by redundant metering devices
/2/	CAP_{PJ} (W)	Installed capacity of the hydro power plant after the implementation of the project activity. The determination of the installed capacity is yearly and based on nameplates supplied by the manufacturer.
/3/	A_{PJ} (m ²)	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. Measured yearly from topographical maps.

Management System and Quality Assurance

The electricity generated from the project activity will be exported to the Turkish National Grid. Data will be measured directly from the electric meter and remotely recorded on TEİAŞ (grid owner) computerized systems. Data will be monitored continuously by redundant metering devices. The recording meter will be in compliance with the communiqué for Metering Devices to be used in the Electricity Market (<http://www.epdk.gov.tr/web/elektrik-piyasasi-dairesi/44>). This meter will provide official data which will be remotely read and recorded by TEİAŞ systems for invoicing. TEİAŞ also conducts the calibration and maintenance of these meters and thus, ensures the accuracy and quality of the measurements. The quality standards that the meters need to comply is "The ICE/TSE 62053-22: Electricity metering equipment (a.c) – Particular requirements - Part 22: Static meters for active energy (Classes 0,2 S and 0,5 S)" The calibration of the meters is done and the meters will be checked continuously if there is a difference of 0.2 % in the readings of the main and the auxiliary meters, the calibration is repeated. These aspects will be verified during monitoring of the project.

3.3 Non-Permanence Risk Analysis

There is not any risk for the project activity.

3.4 Environmental Impact

According to the rules and regulations at the time of licence application for electricity production the project was given a certificate of Exemption for the EIA process, by the Adana Provincial Directorate of Environment and Forestry. Because, at the time of licence application the Hydro Power Plants that had installed capacity lower than 50 MW was considered to be out of scope according to EIA regulation that was active during the period of application /27/.

3.5 Comments by Stakeholders

The project owner performed the consultation with stakeholders by letters with the project information attached to government institutions such as Adana Provincial Directorate of Environment and Forestry, Adana Special Provincial Authority, to EMRA, to municipality etc. Evidences of these correspondences, indicating the dates, and the titles of the corresponding parties and the topic of the correspondences have been provided /29/.

4 VALIDATION CONCLUSION

RINA Services Spa (RINA) has performed validation of the project activity “Toros Hydroelectric Power Plant” in Turkey, with regard to the relevant requirements for VCS Version 3 activities.

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

The project correctly applies the approved baseline and monitoring methodology “ACM0002”, “Grid-connected electricity generation from renewable sources”, version 16.0 of 28/11/2014.

By generating renewable energy from hydropower plant, the project results in reduction of CO₂ emissions that are real measurable and giving 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 “Toros Hydroelectric Power Plant” are estimated to be on average 127,655 tCO₂e per year over the selected 10 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 “Toros Hydroelectric Power Plant” in Turkey, as described in the VCS PD version 02.02 of 20/04/2015, meets all relevant UNFCCC and VCS Version 03 requirements for the VCS VER and all relevant host Party criteria and correctly applies the baseline and monitoring methodology “ACM0002”, “Grid-connected electricity generation from renewable sources”, version 16.0 of 28/11/2014.

APPENDIX A

VALIDATION PROTOCOL

TABLE 1 REQUIREMENTS CHECK LIST

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
A Description of Project Activity						
A.1 Title of the project activity						
A.1.1.	Title of the project activity, revision number and date of PDD (section A.1). State the clearly identifiable title of the project activity, the version number and the date of the PDD.	/01/	DR	Yes, the PDD in section A.1. contains the title of the project "Toros Hydroelectric Power Plant", the version number "version 01.00" and the date of the report "10/03/2011"		OK
A.1.2	Does the project comply with the applicable requirements for completing the PDDs?	/01/ /08/	DR	The CDM-PDD template was used by the PP for completing the PDD, which in compliance with the applicable CDM requirements for completing the PDD. However, some VCS PD requirements have not been included in the PDD. <i>The PP is requested to provide the PD which is in the prescribed template and in compliance with the latest VCS requirements for VCS PD, notably the following items:</i> - indicate whether the project is a grouped project - para 1.10 conditions prior to project initiation - para 1.11 compliance with laws, statues and other regulatory frameworks - para 1.12.1 proof of title - para 1.12.2 emissions trading programs and other binding limits - para 1.12.3 participation under other GHG programs - para 1.12.4 other forms of environmental credit	~~GAR1~~	OK

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

Checklist Question		Reference		MoV ¹	Comments	Draft Conclusion	Final Conclusion
					- para 1.12.5 projects rejected by other GHG programs. Furthermore, the PP is requested to present values in international standard format as well as page number in the PDD.		
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?	/01/ /12/	/11/	DR, I, CC	The proposed project activity is to construct a hydroelectric power plant (HEPP) with a total installed capacity of 49 MW, which consists of a dam with an elevation level of 700 m, a diversion tunnel of 11,860 m, a canal, a penstock, two turbines with an unit capacity of 25.6 MW, two generators with an unit capacity of 24.5MW. The power generated from the project will be transmitted to the Turkish National grid via one of the transformer Substations at 154 KV with a transmission line of 15 km. It is envisaged that the project activity will generate 239,400 MWh of electricity and delivered to the Turkish National grid annually. The project is located at the Cakit River, which is close to Belemelik Village within the jurisdiction of Pozanti Town in Adana Province of Turkey. The project was still under construction at the time of site inspection in March 2011. By verifying the EIA report and the FSR, it was found that the elevation level, the length of the diversion tunnel, the unit capacity of the turbines and the expected annual power generation from the project are found to be the consistent with the PDD version 01. However, some of the values are not consistent between the PDD version 01 and the FSR and EIA report, as listed in the following:	CAR-2	OK

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
				- In section A.2 of the PDD version 01, the length of the transmission tunnel is 11.860m, which is consistent with the FSR, whereas in section A.4.3 of the PDD version 01, the length of the diversion tunnel is about 8km. - As per table 2 of the PDD version 01, there is no diversion tunnel for the project, whereas in Section A.4.3 of the same PDD, the length of the diversion tunnel is 8km. - The height from the foundation of the regulator, and the height of the regulator from the River Bed, the full body crest length, the specification of the cofferdam, and the description of the water intake structure could not be found in the EIA report and FSR. Therefore, Clarification is requested. Furthermore, the PP is requested to: -provide the approval of the FSR -provide evidences to demonstrate that the unit installed capacity of the generator is 24.5MW -provide a transparent description of primary energy and secondary energy		
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 described in the PDD?	/01/	DR, I	No, the project activity is a Greenfield project and does not involve any alteration of the existing installation, which is confirmed from onsite inspection.		OK
A.3 Ownership and project eligibility						
A.3.1	Proof of title	/01/	DR, CC	As indicated in Section A.3 of the PDD version 01, the project participants (PPs) are Bereket Enerji Uretim A.S. and Turkuaz Karbon Varlik Yonetimi Enerji Proje ve Dan. San. lth. lhr. Ltd.	CAR-3	

Checklist Question	Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
			Sti. <i>The PP is requested to demonstrate the ownership of the project for both PPs, as well as their roles and responsibilities, with objective document.</i> The validation team has also verified the Certificate of Activity to Bereket Enerji Uretim A.S. issued by the Chamber of Commerce of Denizli and confirmed that they are one of the members from the Chamber of Commerce. Nevertheless, the activity of the company is not clearly indicated in the certificate. The PP is requested to provide evidences to demonstrate the activity of Bereket Enerji Uretim A.S.		
A.3.2	Double counting and whether the project participated in another emission trading programme	/01/	DR	This is not clearly indicated in the PDD version 01. <i>The PP is requested to justify if the project participated in another emission trading programs in the PDD.</i>	~~GAR-4~~ OK
A.3.3	Project applicability to the VCS for projects rejected under other GHG programme (if applicable)	/01/ /08/	DR	<i>The PP is requested to justify in the PDD whether the proposed project activity participate/rejected from another GHG programs. Please refer to Section A.1.2.</i>	~~GAR-1~~ OK
A.3.4	Whether the project is eligible under the VCS	/01/ /06/ /08/ /09/	DR, I	The proposed project activity is classified as "Type I: renewable energy" as per the procedures of CDM project activity. The project is to build a HEPP with an installed capacity of 49 MW using renewable hydro power, which is considered as a large scale project as the total installed capacity of Toros HEPP exceeds the thresholds of 15 MW, as per the Modalities and procedure for a clean development mechanism (CDM). <i>The PP is requested to justify whether the</i>	~~GAR-1~~ OK

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
				<i>proposed project activity is a grouped project. Please refer to Section A.1.2.</i>		
A.4 Technical description of the project						
A.4.1	Is the project location clearly defined?	/01/	DR, I	As indicated in the PD version 01.00, the project is located at Cakit River, which is close to the Belemedik Village, Pozanti Town, Adana Province. The geographical coordinates of the project activity is not transparently indicated (for instances, point 1 and point 2 are not clearly specified) in the PDversion 01.00. <i>Therefore, the PP is requested to clarify the geographical coordinates of the project site in a transparent manner with documented evidences.</i>	CAR-5	OK
A.4.2	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?	/01/ /11/ /12/ /15/	DR, I, CC	The project activity consists of the construction of a regulator, a water transmission tunnel, a penstock and the power plant building. It will install two set of turbines, each with an unit capacity of 25.6 MW, and two sets of generator, each with an unit capacity of 24.5 MW. <i>The technical description of the transmission tunnel and the generators are not consistent between the FSR and the PDD version 01.00. Clarification is requested. Please refer to section A.2.1.</i> HEPP reflects the current good practice for safe on environment and has no negative damage to the ecosystem. Currently, electricity is predominately generated from fossil fuel-fired power plant in Turkey, which constitutes over 65% of the total power generation in Turkey, as per the Turkish electricity generation-transmission statistics in 2009. It is envisaged that the proposed project activity would result a better performance in terms of GHG emission due to the nature of	CAR-2 GL-1	OK

Checklist Question	Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
			hydro power generation. As per the PDD version 01.00, there is no information addressing whether the technology (i.e. turbines and generators) employed in the project activity are manufactured domestically or imported from another (Annex I/Non-Annex I) country. <i>The PP is requested to justify whether the project activity involved technology transfer from Annex I country with documented evidence.</i>		
A.4.3	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?	/01/	DR	<i>The PP is requested to justify the sources of finances for developing the project activity with documented evidences.</i>	CL-2 OK
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?	/01/ /03/	DR	The proposed project activity applies the approved consolidated baseline and monitoring methodology ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" version 12.1, which is the latest available version.	OK
B.2 Applicability criteria of the methodology/tools					
B.2.1	How was it validated that the project activity complies with the applicability criteria?	/01/ /03/	DR, I	The proposed project activity meets the criteria as per the approved methodology ACM0002 version 12.1, as listed in the following: - the proposed project activity is a "Greenfield" grid-connected renewable hydro-power plant - the project activity results in creation of new	CAR-6 OK

Checklist Question	Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
			reservoir with the power density of 441W/m², which exceeds the thresholds of 4W/m² as indicated in the methodology. -the proposed project activity does not involve switching from fossil fuels to renewable energy sources at the site of project activity, which can be confirmed through the onsite inspection <i>The PP is requested to provide objective evidences to demonstrate the power generated from the project is delivered to the grid as well as evidences (including the data sources and reference) to prove that the power density of the project activity meets the criteria of the applied methodology.</i>		
B.2.2	Is the selected baseline one of the baseline(s) described in the methodology and this hence confirms the applicability of the methodology?	/01/ /03/	DR, I	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 12.1, i.e. electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, which is in line with the PDD version 01.00.	OK
B.3 Project boundary					
B.3.1	Is the project boundary are clearly defined and in accordance with the applied methodology?	/01/ /03/	DR, I	The project boundary described in the PDD version 01 is not in line with the applied methodology ACM0002 version 12.1, where <i>project boundary is not defined in a transparent manner in the PDD version 01.</i> Clarification is requested	OK
B.3.2	What are the project's system boundaries (components and facilities used to mitigate GHGs)?	/01/ /03/	DR, I	Please refer to section B.3.1	OK
B.3.3	Which sources are identified for	/01/ /03/	DR, I	As indicated in the PDD version 01.00, the	OK

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
	the project? Does the identified project boundary cover all possible sources linked to the project activity?			baseline emissions of the project activity is the CO ₂ emission from electricity generation, whereas the CH ₄ emission from the reservoir from the project emission is considered as zero as the power density of the reservoir is greater than 10W/m ² . <i>The PP is requested to provide documented evidences demonstrating how the power density of the reservoir is calculated in the PDD including the input values and reference sources for the project activity. Please refer to section B.2.1.</i>		
B.3.4	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 reductions of the project?	/01/ /03/	DR, I	The PDD does not include any information regarding the other emissions sources not foreseen by the methodology that can contribute by more than 1 % to the estimated emission reductions of the project. As per the PDD version 01.00 of 10/03/2011, it is mentioned that the possible emission from fossil fuel combustion at auxiliary power generation in case of power shortage at operation phase. Nevertheless, the emission is considered as negligible and won't be monitored. <i>The PP is requested to justify whether the emission from fossil fuel combustion is "negligible" and would not contribute more than 1% to the estimated emission reduction of the project.</i>	CAR-8	OK
B.4 Baseline scenario identification						
B.4.1	Which baseline scenarios have been identified? Is the list of the baseline scenarios complete?	/01/ /03/	DR, I	According to the approved methodology ACM0002 version 12.1, the baseline scenario for project activity is the installation of a new grid-connected renewable power plant/unit is electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources.		OK

Checklist Question	Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
			Since the baseline is defined by the approved methodology, no further analysis is requested.		
B.4.2	How have the other baseline scenarios been eliminated in order to determine the baseline?	/01/ /03/	DR, I	Please refer to Section B.4.1.	OK
B.4.3	What is the baseline scenario? Is the determination of the baseline scenario in accordance with the guidance in the methodology?	/01/ /03/	DR, I	Please refer to Section B.4.1.	OK
B.4.4	Has the baseline scenario been determined using conservative assumptions? Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	/01/ /03/	DR, I	Please refer to Section B.4.1.	OK
B.5 Additionality determination					
B.5.1	What tool does the project use to assess additionality? Is this in line with the methodology?	/01/ /03/ /16/	DR, I	The project additionality has been demonstrated through "Tool for demonstration and assessment of additionality" version 5.2,1 which is in line with the applied methodology ACM0002 version 12.1	OK
B.5.2	What is the project additionality mainly based on?	/01/ /03/ /16/	DR, I	The demonstration of the additionality of the project activity is mainly based on the investment analysis.	OK
B.5.2	Investment analysis				
B.5.2.1	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?	/01/ /03/ /16/ /17/	DR	The PP demonstrated the additionality of the project activity by applying option III "benchmark analysis" of investment analysis of the methodological tool. This is deemed appropriate as the project generates benefits other than the VERs income (i.e. the sales of electricity generated from the project).	OK

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
B.5.2.2	What the financial indicator is used?	/01/ /03/ /16/ /17/	DR, I	As per the PDD version 01.00 of 10/03/2011, project internal rate of return (IRR) is used for benchmark analysis, which is derived from the Eurobond rate. <i>The PP is requested to clarify (with documented evidences) whether the project IRR used for financial assessment is pre-tax or post-tax.</i> <i>Furthermore, as noted in Section B. 5 of the PDD version 01.00, the investment decision was made on 04/02/2008, whereas the investment date as indicated in footnote 4 in the same section is 04/02/2010. Clarification is requested.</i> <i>The PP is requested to provide objective evidences to demonstrate that the benchmark selected is suitable for the proposed project activity, available at the date of the investment decision made and should be in compliance with the starting date of the proposed project activity as well as the calculation for deriving the benchmark.</i> PP to also submit the detailed calculation sheet for the calculated WACC of 16.4% and to demonstrate on how it is appropriate as per the latest guidance on investment analysis.	~~CAR-9~~	OK
B.5.2.3	Does the income tax calculation take depreciation into account? Is the depreciation year in accordance with normal accounting practice in the Host Country?	/01/ /03/ /16/ /17/	DR	<i>The PP is requested to provide documented evidences to demonstrate the corporation tax as well as the choice of the 20 years depreciation years and confirming this is in accordance with normal accounting practice in the Host Country</i>	~~CL-3~~	OK
B.5.2.4	Is the time period of the investment analysis and operating time of the project realistic? Has salvage value been taken into account? Is the working capital returned in the	/01/ /03/ /16/ /17/	DR	As per the PDD version 01.00, the operational lifetime of the HEPP is about 50 years, and the time period for investment analysis is 20 years by considering that the major equipments need to be replaced every 20 years.	~~CL-4~~	OK

Checklist Question	Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
last year of the operation?			<i>The PP is requested to provide evidences for demonstrating the salvage values assumption</i>		
B.5.2.5 Cross-check of main parameters used in the financial analysis: electricity generation, electricity tariff, investment costs, operating and maintenance costs, taxes, other costs. The main parameters can be changed for the different project category.	/01/ /03/ /16/ /17/	DR	<i>It is not clear from the PDD from which sources have been taken the input parameters used in the financial analysis and if they are valid and applicable at the time of the investment decision. Moreover neither the PDD nor in the IRR sheet contain the source references for the input values used in the financial analysis.</i> <i>The PP is requested to provide objective evidences to support the following issues:</i> <i>• Third party evidences for the project cost (which can be in the form of contracts, invoices, audited accounts or certificate from auditors, etc.)</i> <i>• Breakdown of the total investment cost (79,473,322 USD)</i> <i>• Breakdown of the operational costs</i> <i>• Information regarding the loans, electricity sales prices</i> <i>Furthermore, the PP is requested to clarify/justify the loan issues as summarized below:</i> <i>• Any other cost of borrowing, for instances, arrangement fees, etc.</i> <i>• The duration of the loan period, please specify the repayment dates</i> <i>The PP is also requested to justify whether any existing debt at the time of decision making with evidence.</i> <i>The PP is requested to justify if they receive other financial support, such as ex-tax break and government subsidy, etc. for the project with objective evidences.</i>	GAR 10	OK

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
B.5.2.6	Sensitivity analysis: have the key parameters contributing to more than 20% of the revenue/costs during operating or implementation been identified?	/01/ /03/ /16/	DR, I	<i>The PP is requested to clarify why electricity production is not included in the sensitivity analysis as it contributes more than 20% of revenues/costs.</i> <i>No justification has provided on the variations of each parameter to reach the benchmark and the likelihood for that to happen. Clarification is requested.</i>	~~CAR-11~~	OK
B.5.2.7	Sensitivity analysis: is the range of variations is reasonable in the project activity? The main parameters can be changed for the different project category.	/01/ /03/ /16/	DR, I	<i>Please refer to Section B.5.2.6</i>	~~CAR-11~~	OK
B.5.2.8	Have the key parameters been varied to reach the benchmark and the likelihood of this happening been justified to be small?	/01/ /03/ /16/	DR, I	<i>Please refer to Section B.5.2.6</i>	~~CAR-11~~	OK
B.5.3 Barrier analysis						
B.5.3.1	Are the barriers identified complimentary to a potential investment analysis?	/01/ /03/ /16/	DR, I	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" version 5.2.1		OK
B.5.3.2	How were the investment barriers assessed to be real? How does VCS alleviate the investment barriers?	/01/ /03/ /16/	DR, I	<i>Please refer to Section B.5.3.1</i>		OK
B.5.3.3	Is the project activity prevented by the investment barriers and at least one of the possible alternatives to the project activity is feasible under the same	/01/ /03/ /16/	DR, I	<i>Please refer to Section B.5.3.1</i>		OK

Checklist Question	Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
	circumstances?				
B.5.3.4	How were the technological barriers assessed to be real? How does VCS alleviate the technological barriers?	/01/ /03/ /16/	DR, I	Please refer to Section B.5.3.1	OK
B.5.3.5	Is the project activity prevented by the technological barriers and is at least one of the possible alternatives to the project activity is feasible under the same circumstances?	/01/ /03/ /16/	DR, I	Please refer to Section B.5.3.1	OK
B.5.3.6	How were the barriers due to prevailing practice assessed to be real? How does VCS alleviate the barriers due to prevailing practice?	/01/ /03/ /16/	DR, I	Please refer to Section B.5.3.1	OK
B.5.3.7	Is the project activity prevented by the barriers due to prevailing practice and is at least one of the possible alternatives to the project activity is feasible under the same circumstances?	/01/ /03/ /16/	DR, I	Please refer to Section B.5.3.1	OK
B.5.3.8	How were the other barriers assessed to be real? How does VCS alleviate the other barriers?	/01/ /03/ /16/	DR, I	Please refer to Section B.5.3.1	OK
B.5.3.9	Is the project activity prevented by the other barriers and is at least one of the possible alternatives to the project activity is feasible under the same circumstances?	/01/ /03/ /16/	DR, I	Please refer to Section B.5.3.1	OK
B.5.4 Common practice analysis					
B.5.4.1	What are the geographical scope and scope of technology of the common practice analysis?	/01/ /03/ /16/	DR, I	The common practice analysis in the PDD version 01.00 is not in line with the methodological tool "tool for the demonstration"	~~GAR-12~~ OK

Checklist Question	Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
			and assessment of additionality" version 5.2.1" <i>The PP is requested to define the geographical scope and the scope of technology used and scale with respect to regulatory framework, investment climate, access to technology and finances, etc. for the common practice analysis with objective evidences.</i> <i>The PP is requested to discuss how many similar projects are in operation in the selected area and why they are not similar to the proposed project activity, as required under sub steps 4a and 4b of the additionality tool.. All assumptions used for the analysis must be supported by objective evidences.</i>		
B.5.4.2	How many similar non-CDM-projects exist in the region within the scope?	/01/ /03/ /16/	DR, I	Please refer to section B.5.4.1	CAR 12 OK
B.5.4.3	How were possible essential distinctions between the project activity and similar activities assessed?	/01/ /03/ /16/	DR, I	Please refer to section B.5.4.1	CAR 12 OK
B.5.4.4	What is the data source(s) used for the common practice analysis?	/01/ /03/ /16/	DR, I	Please refer to section B.5.4.1	CAR 12 OK
B.5.5 Conclusion on the additionality assessment					
B.5.5.1	What is the conclusion with regard to the additionality of the project activity?	/01/ /03/ /16/ /17/	DR, I	Please refer to section B.5.2 and B.5.4.	CAR-9 CAR-10 CAR-11 CAR-12 CL-3 CL-4 OK
B.6 Calculation of GHG emission reductions					
B.6.1 Baseline emissions					
B.6.1.1	Are the calculations documented	/01/ /03/ /04/	DR,	The baseline emission of the project activity is	CAR 13

Checklist Question	Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
according to the approved methodology and in a complete and transparent manner?	/05/ /15/ /20/ /21/ /22/	CC	calculated based on the quantity of net electricity generation that is produced and fed into the grid and the combined margin (CM) CO₂ emission factor for grid connected power generation. "Tool to calculate the emission factor for an electricity system" version 2 has been used to determine the grid emission of the national transmission grid of Turkey, as indicated in the PDD version 01.00. However, a more update version is available at the time of validation. <i>Hence, the PP is requested to use the latest version of the methodological tool to calculate the GHG emission reduction.</i> Option (a) simple OM is selected to calculate the operating margin (OM) emission factor of the grid, it is deemed reasonable as the low-cost/must-run resources constitutes less than 50% of total grid generation in average of the five most recent years in Turkey, which is confirmed by the annual Development of Turkey's Installed capacity by primary energy resources between 2005 and 2009 published by the Turkish electricity generation – transmission company (TEIAS). Option B under simple OM is selected, as the necessary data for option A is not available, which is deemed appropriate by cross-checking the statistical data from Turkish electricity generation-transmission statistics. <i>Nevertheless, the OM emission factor calculation in the spreadsheet "Toros_CM_2010.xls" is not in line with the methodological tool. Clarification is requested.</i> The build margin (BM) emission factor of the grid is not calculated as per the methodological tool. <i>The PP is requested to clarify the calculation by referring the document "request for guidance:</i>		

Checklist Question	Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
			application of AM0005 and AMS-I.D in China" and the latest version of the methodological tool "Tool to calculate the emission factor for an electricity system".		
B.6.1.2 Have conservative assumptions been used when calculating the baseline emissions and are the uncertainty estimates properly addressed?	/01/ /03/ /04/ /05/ /15/ /20/ /21/ /22/ /23/	DR, CC	The input data (including heating value of the fuel, fuel consumption, and the annual power generation) used to determine the OM emission factor of the grid is obtained from "Turkish electricity generation- transmission statistics 2009", 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. <i>Nevertheless, it is not clearly indicated whether the heating value of the fuel in the statistics is net calorific value or gross calorific value. Clarification is requested.</i> The default values at lower limit of the uncertainty at a 95% confidence interval in table 1.4 of Chapter 1 of Volume 2 of IPCC guidelines on national GHG inventories was used as the input value for the emission factor of fossil fuel used in power plant, which is in line with the methodological tool, and considered as appropriate. The BM emission factor is determined based on the additional capacity of Turkish Grid over the period of 2005-2009. <i>The PP is requested to provide the original sources of data for the additional capacity of the grid for year 2007. Furthermore, it is found that the values of additional capacity of Turkish is not in line with the sources used as indicated in the PDD version "10 years of electricity production capacity projection." Clarification is requested.</i> The default values as indicated in the	CAR 14	OK

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
				methodological tool were used to define the net energy conversion efficiency of power unit, which is deemed reasonable. <i>Nevertheless, the PP is requested to justify why such default value is chosen for the corresponding power plant with objective evidence.</i> The ex-ante electricity generated from the project activity is found to be 239,400 MWh per annum. <i>The PP is requested to justify how this value is determined in accordance with EB 48 Annex 11 with objective evidences.</i>		
B.6.2 Project emissions						
B.6.2.1	Are the calculations documented according to the approved methodology and in a complete and transparent manner?	/01/ /03/	DR, I	As stated in the PDD version 01.00, the power density of the proposed project activity is 441 W/m², the project emission is zero, which is in line with the applied methodology ACM0002 version 12.1. <i>The PP is requested to provide documented evidences demonstrating how the power density of the reservoir is calculated in the PDD including the input values and reference sources for the project activity. Please refer to section B.2.1.</i>	CAR-6	OK
B.6.2.2	Have conservative assumptions been used when calculating the project emissions and are the uncertainty estimates properly addressed?	/01/ /03/	DR, I	Please refer to section B.6.2.1	CAR-6	OK
B.6.3 Leakage						
B.6.3.1	Are the calculations documented according to the approved methodology and in a complete and transparent manner?	/01/ /03/	DR	As per the applied methodology ACM0002 version 12.1, potential leakage emissions such as power plant construction and upstream emissions from fossil fuel used are considered as negligible.		OK
B.6.3.2	Have conservative assumptions been used when calculating the	/01/ /03/	DR	Please refer to section B.6.3.1		OK

Checklist Question	Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
leakage and are the uncertainty estimates properly addressed?					
B.6.4 Emission reductions					
B.6.4.1 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?	/01/ /03/ /04/ /05/ /15/ /20/ /21/ /22/ /23/	DR	Please refer to section B.6.1 and B.6.2.	CAR-6 CAR-14	OK
B.6.5 Data and parameters that are available at validation and that are not monitored					
B.6.5.1 How were the parameters available at validation verified?	/01/ /03/ /04/ /05/ /15/ /20/ /21/ /22/ /23/	DR	Please refer to section B.6.1 and B.6.2.	CAR-6 CAR-14	OK
B.7 Monitoring plan					
B.7.1 Data and parameters monitored					
B.7.1.1 Does the monitoring plan described in the PDD comply with the requirements of the methodology?	/01/ /03/	DR, I	The monitoring plan described in the PDD is not in compliance with the applied methodology ACM002 version 12.1 <i>Correction is requested. Please refer to Section B.7.1.2</i>	CAR-15	OK
B.7.1.2 Does the monitoring plan contain all necessary parameters and are they clearly described?	/01/ /03/	DR, I	As per the PDD version 01.00, the parameter that will monitor is the electricity supplied to the grid by the project activity, which is not in line with the applied methodology ACM002 version 12.1. <i>The PP is requested to clarify whether gross or net electricity supplied to the grid is monitored. Two of the parameters, namely, the installed capacity of the HEPP after the implementation of the project (Cap_{PJ}) and the area of the reservoir measured in the surface of the water when the reservoir is full after the implementation of the project (A_{PJ}), which should be monitored as per the applied methodology are not indicated in the PDD. Correction is requested.</i>	CAR-15	OK
B.7.1.3 Is the measurement equipment described? Is the accuracy of the	/01/ /03/	DR, I	As indicated in the PDD version 01.0, the electricity supplied to the grid by the project	GL-5	OK

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
	measurement equipment addressed and deemed appropriate? Are the requirements for maintenance and calibration of measurement equipment described and deemed appropriate?			activity will be measured by redundant metering devices. Furthermore, two auxiliary meters will be installed for the purpose of cross-checking, where calibrations will take place if the difference between the main meters and the auxiliary meters exceeds 0.2%. <i>However, the number of redundant metering devices is not specified in the PDD, while it was indicated two auxiliary meters will be installed. Clarification is requested.</i> TEAIS will be responsible for the calibration and maintenance of the meters and the quality of the meters is in accordance with ICE/TSE 62053-22. As per the PDD version 01.00 of 10/03/2011, the quality standards that the meters need to comply for active energy is class 0.2s and 0.5s. <i>The PP is requested to specify the accuracy class of the meters that are used for monitoring.</i>		
B.7.1.4	Is the monitoring frequency adequate for all monitoring parameters? Is it in line with the monitoring methodology?	/01/ /03/	DR, I	The electricity supplied to the grid will be measured continuously and the data will be aggregated in a monthly basis, which is in line with the methodology ACM0002 version 12.1. <i>However, the monitoring and recording frequency for Cap_{PJ} and A_{PJ} are not indicated in the PDD. Clarification is requested. Please refer to Section B.7.1.2.</i>	~~GAR-15~~	OK
B.7.1.5	Is the recording frequency adequate for all monitoring parameters? Is it in line with the monitoring methodology?	/01/ /03/	DR, I	Please refer to Section B.7.1.4.	~~GAR-15~~	OK
B.7.2 Monitoring of sustainable development indicators/environmental impacts						
B.7.2.1	Is the monitoring of sustainable development indicators/environmental impacts warranted by legislation in the host country?	/01/ /03/	DR, I	There is no specific legislation in Turkey requires to monitor the sustainable development indicators and/or environmental impacts.		OK

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
B.7.2.2	Does the monitoring plan provide for the collection and archiving of relevant data concerning environmental, social and economic impacts?	/01/ /03/ /14/	DR, I	There is no regulation in Turkey requires to collect and archive data regarding social and economic impacts. EIA regulation in Turkey requires evaluating the environmental impacts of the project, which the proposed project has already obtained an EIA affirmative certificate from the MoEF, which is shown in Annex 5 of the PDD version 01.00. <i>Nevertheless, the PP is requested to submit a copy of the EIA affirmative certificate for Toros HEPP for cross-verification.</i> Furthermore, according to the interviews with the PP during the onsite visit, it was found that the environmental impact of the project would be monitored by local environmental authority in a regular basis in order to confirm that the project activity does not lead to negative environmental impacts. <i>The PP is requested to submit the documented evidences regarding the regular monitoring from the local environmental authority.</i>	CAR-16	
B.7.2.3	Are the sustainable development indicators in line with stated national priorities in the host country?	/01/ /03/	DR, I	There is no specific legislation in Turkey requires to monitor the sustainable development indicators.		OK
B.7.3 Management, quality assurance and quality control						
B.7.3.1	How has it been assessed that the monitoring arrangements described in the monitoring plan are feasible within the project design?	/01/ /03/	DR, I	No monitoring arrangement was installed at the time of the site visit. <i>Please refer to section B.7.1</i>	CAR-15	OK
B.7.3.2	Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)?	/01/ /03/	DR, I	The electricity generation data will be monitored continuously and aggregated on a monthly basis. An officer from TEAIS will come to the plant and record the main meters once a month, which the record will be served as official data. The PP has established a monitoring team and	CL-6	OK

Checklist Question	Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
			each member have been assigned for specific responsibilities, where the arrangement of the team is deemed appropriate. <i>Nevertheless, it is not clearly indicated in the PDD that the storage area of records. Clarification is requested.</i>		
B.7.3.3	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?	/01/ /03/	DR, I	As indicated in the PDD version 01.00, two auxiliary meters will be installed with the purpose of crossing checking the main meters continuously, whenever the difference between the main meters and the check meters is greater than 0.2%, calibration will be carried out. The collected data will be cross-checked with the data published in the Market Financial Reconciliation Centre (PMUM) managed by TEAIS.	OK
B.7.3.4	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?	/01/ /03/	DR	As indicated in the PDD version 01.00, the monitored data will be kept for two years after the end of the crediting period or the last issuance of VERs.	OK
C. Duration of the project activity and crediting period.					
C.1 Start date of project activity					
C.1.1	What is the expected starting date of the project activity and how has been determined? When was the first construction activity?	/01/ /13/	DR	As indicated in section C.1 of the PDD version 01.00, the start date of the project is estimated to be in December 2011 (the commissioning date), which is not in line with the Glossary term of CDM. <i>The PP is requested to define the start date of the project in accordance with the Glossary term of CDM with objective evidences.</i>	OK
C.1.2	What is the expected operational lifetime of the project activity? Is it reasonable?	/01/	DR	As indicated in section C.1 of the PDD version 01, the expected operational lifetime of the project activity is 20 years. <i>The PP is requested to provide evidences for demonstrating that operational lifetime of the project activity is 20 years</i>	OK

Checklist Question	Reference	Mov ¹	Comments	Draft Conclusion	Final Conclusion
C.2 Start date of crediting period					
C.2.1	What is the expected starting date of the proposed project activity? Does the crediting period start eight week after the request for registration?	/01/	DR	As per the PDD version 01.00, the start date of the crediting period of the project is December 2011.	OK
C.2.2	What is the length of the crediting period? Is it clearly defined and reasonable?	/01/	DR	As per the PDD version 01.00, the length of the crediting period is 10 years. <i>Please refer to Section C.1.2.</i>	OK
D. Environmental Impact					
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?	/01/ /11/	DR, I	As per the PDD version 01.00, it is indicated that the evaluation of environmental impacts due to the project activity, which is in line with the EIA report dated 2008 prepared by a third party entity. However, as per Section D.1 of the PDD version 01.00 of 21/03/2011, only the measures for mitigating the environmental impacts were mentioned, whereas the evaluation of the actual environmental impacts of the project is missing in the PDD. Correction is requested	OK
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?	/01/ /11/ /14/	DR, I	According to the By-law on Environmental Impact Assessment (EIA) Official Gazette No. 25318 of 16/12/2003, EIA is not subjected to River type power station below 50MW. This Official Gazette was valid till 17/07/2008. As per the PDD version 01.00, the PP has obtained a certificate of Exemption for the EIA process from the Adana Provincial Directorate of Environment and Forestry on 26/06/2008. <i>The PP is requested to provide a copy certificate of Exemption for the EIA process (an attachment in Annex of the PDD is not enough to demonstrate the evidences)</i>	OK
D.1.4	Is it the project in line with the current environmental legislation in the host Country?	/01/ /11/	DR, I	<i>Please refer to Section D.1.3</i>	OK
E. Local stakeholder consultation					

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
E.1.1	Are the local stakeholders be invited by the PP prior to the publication of the PDD to the UNFCCC website?	/01/	DR	It is not clearly indicated in the PDD when and how the local stakeholder consultation is taken place. <i>The PP is requested to include this information in the PDD with objective evidences.</i>	~~CAR-19~~	OK
E.1.2	Area the stakeholders invited be considered as regards commenting the proposed project activity?	/01/	DR	It is not clearly indicated in the PDD how the stakeholders are invited to provide their comment for the proposed project activity. <i>The PP is requested to include this information in the PDD with objective evidences</i>	~~CAR-19~~	OK
E.1.3	Is the summary of the comments received from the stakeholders, provided in the PDD complete?	/01/	DR	As indicate in the PDD version 01.00, two key comments were received for the project, addressing the concerns of the crude oil pipelines and the potential job opportunities. <i>The PP is requested to provide documented evidence to demonstrate that those comments were received from local stakeholders.</i>	~~CAR-19~~	OK
E.1.4	Has due account been taken by the project participants of any stakeholder comments received?	/01/	DR	<i>Please refers to Section E.1.3</i>	~~CAR-19~~	OK
E.1.5	If a stakeholder consultation process is required by regulations/laws in the host Country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	/01/	DR	No, the stakeholder consultation process is not required by any regulations or laws in Turkey.		OK

TABLE 2 RESOLUTION OF CORRECTIVE ACTION REQUESTS AND CLARIFICATION REQUESTS

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
CAR1 <i>The PP is requested to provide the PDD which is in the prescribed template and in compliance with the latest VCS requirements for VCS PD, notably the following items:</i> - <i>indicate whether the project is a grouped project</i> - <i>para 1.10 conditions prior to project initiation</i> - <i>para 1.11 compliance with laws, statues and other regulatory frameworks</i> - <i>para 1.12.1 proof of title</i> - <i>para 1.12.2 emissions trading programs and other binding limits</i> - <i>para 1.12.3 participation under other GHG programs</i> - <i>para 1.12.4 other forms of environmental credit</i> - <i>para 1.12.5 projects rejected by other GHG programs.</i> Furthermore, the PP is requested to present values in international standard format as well as page	A.1.2 A.3.3 A.3.4	Please see version 2.00 of the Toros PDD. The recent most VCS template is used and all the indicated parts are completed accordingly. The units are SI units, the page numbers are given in version 2.00 of the PDD. 2nd round answer The earlier version number was 1 so his version was 2.0 but considering the minor changes we did at the last edition we changed the version number to 2.01.	The VCS PD has been revised as per the VCS PD Template version 3.2 All the indicated parts are completed. However the revision number has not been changed (last version available is 2.00). CAR 1 is not closed Ok, revision number updated. CAR 1 is closed.

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
number in the PDD.			
CAR2 <i>some of the values are not consistent between the PDD version 01 and the FSR and EIA report, as listed in the following:</i> - In section A.2 of the PDD version 01, the length of the transmission tunnel is 11.860m, which is consistent with the FSR, whereas in section A.4.3 of the PDD version 01, the length of the diversion tunnel is about 8km. - As per table 2 of the PDD version 01, there is no diversion tunnel for the project, whereas in Section A.4.3 of the same PDD, the length of the diversion tunnel is 8km. - The height from the foundation of the regulator, and the height of the regulator from the River Bed, the full body crest length, the specification of the cofferdam, and the description of the water intake structure could not be found in the EIA report and FSR <i>Furthermore, the PP is requested to:</i> -provide the approval of the FSR -provide evidences to demonstrate that the unit installed capacity of the generator is 25.5MW -provide a transparent description of primary energy and secondary energy The technical description of the transmission tunnel and the generators are not consistent between the	A.2.1 A.4.2	Please see version 2.00 of the PDD. The technical aspects are taken from the Toros HPP FSR dated July, 2005. The DSI (Host Country Authority that approves the FSR) Approval is provided as "Doc1-DSI Feasibility Approval" -In Section 1.8 of the PDD version 2.00 the length of the tunnel is corrected and referenced to FSR. -Table 2 is updated to include diversion tunnel data, and is referenced to FSR. -The height from the foundation of the regulator, and the height of the regulator from the River Bed, the full body crest length, the specification of the cofferdam, and the description of the water intake structure are updated based on section 1.3 Proje Karakteristikleri of the Toros HPP FSR –See pdf page 15 to 18 of the file Toros HES Fizibilite 1.pdf. The data provided in Table 2.0 of the PDD version 2.00 is also based on this document. -As mentioned above DSI Approval is provided as "Doc1DSI Feasibility Approval". -The unit installed capacity is half the total capacity as indicated in the FSR and this is updated in the PDD version 2.00, and the unit value of each generator is 24.50 MW. The Primary energy and the Secondary energy is a distinction made when calculating the total maximum amount of electricity a hydroelectric Poer Plant is capable of producing. Since this distinction was given in the FSR we have followed the same procedure to represent it in Table 2 of the	The FSR approval has been provided. According to the FSR the length of the transmission tunnel is 11.860m (11,86 km), while in section A.4.3 of the PDD are indicate 11,86 km³ and not km. The data provided in Table 2.0 of the PDD version 2.00 are based on the document: Proje Karakteristikleri of the Toros HPP FSR –page 15 to 18 of the file Toros HES Fizibilite 1.pdf. - Evidence of the total installed capacity of the generators is provided. According to the Energy the unit installed capacity of the generator is 24.5MWe as for the PDD. Difference between Firm and Secondary energy is explained but not yet transparently included in the PDD. CAR 2 is closed

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
FSR and the PDD version 01. Clarification is requested		PDD version 2.00. As explained on page 9 of the pdf provided in the following link: (http://www.dsi.gov.tr/docs/yayinlarimiz/kanal-santrallarında-su-iletim-hattı.pdf?sfvrsn=4 .) the Firm or Primary energy is the energy that is possible to be produced at all times by the power plant, any other energy produced at other times is the secondary energy. The technical definitions are updated and referenced to the FSR.	
CAR 3 <i>The PP is requested to demonstrate the ownership of the project for both PPs, , as well as their roles and responsibilities, with objective document.</i> <i>The PP is requested to provide evidences to demonstrate the activity of Bereket Enerji Uretim A.S.</i>	A.3.1	As Documented by the Toros HPP Electricity Production License (See Doc2-Toros lisans) Bereket Energy is the license and title owner as indicted on section 1.3 and the Role of Turkuaz Carbon is to write the PDD. Upon request the Cover of the Consultancy Contract can be submitted. The Bereket Enerji Uretim A.Ş, is a company Registered at Denizli Chamber of Commerce as can be substantiated by the "Doc3-BereketTradeRegistry".	The project owner of the project activity is "Bereket Enerji Üretim A.S." as confirmed through the Generation License. CAR 3 is closed
CAR 4 The PP is requested to justify if the project participated in another emission trading programs in the PDD.	A.3.2	The host country Turkey cannot take part in CDM or JI Activities as it is considered as an Annx 1 Party, and the size of the project activity is larger than acceptable limits by Gold standard. So The project activity is definitely not participating to another GHG emissions trading programme.	There is no other form of emission trading programs generated by the project as stated in Section 1.12 of the VCS PD version 02 since there is no such system within the host country. Hence, <u>CAR 4 is closed.</u>
CAR 5 The PP is requested to clarify the geographical coordinates of the project site in a transparent manner with documented evidences	A.4.1	Please see new version of the PDD (version 2.00) and please check the attached google Earth documents titled "Doc4a-Toros General Outline_.kmz, Doc4bTOROS	There is no other form of emission trading programs generated by the project as stated in Section 1.12 of the

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		Weir.kmz, Doc4cTOROS SurgeChamber.kmz".	VCS PD version 02 since there is no such system within the host country. Hence, <u>CAR 5 is closed.</u>
CAR 6 The PP is requested to provide objective evidences to demonstrate the power generated from the project is delivered to the grid as well as evidences (including the data sources and reference) to prove that the power density of the project activity meets the criteria of the applied methodology.	B.2.1 B.3.3 B.6.2.1 B.6.2.2 B.6.4.1 B.6.5.1	Please see "Doc5-torosHPPConnectionAgreement" This document is the proof that the produced electricity will be supplied to the national grid system of the host country. Please see version 2.00 of the PDD, Appendix 5 indicates the reservoir area and accordingly the calculations are clearly provided to show that the project activity is in compliance with the applied methodology.	It has been confirmed through the Connection Agreement dated 07/12/2010 that the generated electricity will be feed to grid. Also, it has been demonstrated that power density of the project activity is higher than 4 W/m². Hence, <u>CAR 6 is closed.</u>
CAR 7 The project boundary is not defined in a transparent manner in the PDD version 01. Clarification is requested.	B.3.1 B.3.2	Please see version 2.00 of the PDD, a clear indication of the project boundary is provided on section2.3.	CO₂ emissions are included as baseline emission since fossil fuels fired for electricity generation. Project emissions are neglected since the power density of the project activity is greater than 10 W/m². The project boundary is defined in line with applied methodology, thus <u>CAR 7 is closed.</u>
CAR 8 The PP is requested to justify whether the emission from fossil fuel combustion is "negligible" and would not contribute more than 1% to the estimated emission reduction of the project.	B.3.4	Please see section 3.2 of the PDD version 2.00, "There may be one diesel generator installed within the project boundary. This is only going to be utilized as a back-up or emergency generator, therefore, the	ACM0002 Version 16.0.0 indicates that "...The use of fossil fuels for the back up or emergency purposes (e.g. diesel generators) can be

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		emissions from this back up generator have been deemed negligible as per the ACM0002 (version 16.0.0) methodology."	neglected" thus <u>CAR 8 is closed.</u>
CAR 9 <i>The PP is requested to clarify (with documented evidences) whether the project IRR used for financial assessment is pre-tax or post-tax.</i> <i>Furthermore, as noted in Section B. 5 of the PDD version 01, the investment decision was made on 04/02/2008, whereas the investment date as indicated in footnote 4 in the same section is 04/02/2010. Clarification is requested.</i> The PP is requested to provide objective evidences to demonstrate that the benchmark selected is suitable for the proposed project activity, available at the date of the investment decision made and should be in compliance with the starting date of the proposed project activity as well as the calculation for deriving the benchmark. PP to also submit the detailed calculation sheet for the calculated WACC of 16.4% and to demonstrate on how it is appropriate as per the latest guidance on investment analysis.	B.5.2.2 B.5.5.1	Please see version 2.00 of the Financial analysis "TorosHPPFinancialAnalysisV2.0.xlsx" As clearly shown in the cash flow we are considering Equity IRR against the default benchmark suitable for the time of investment decision which is clearly defined in the version 2.00 of the PDD. And this IRR is calculated post tax. As indicated on page 16 footnote 7 of the PDD version 2.00, "The investment decision date is marked as the construction start date (May 2008), e.i. when the project owner decided to start up with the construction. Because the project owner have communicated with the finance institutions and were sure to receive a loan for the project. So they decided to move forward with the project. To be conservative we have utilised the parameters and values of the realized loan agreement, because this was the best offer for the project owner. Please also note that the Moodys Index for Turkey was same for the years 2008 and 2009 (when the loan agreement was signed)." The benchmark is updated in version 2.00 of the PDD and as indicated above it is the default benchmark suitable for the time of investment decision which is clearly defined in the version 2.00 of the PDD. The WACC related question is deemed irrelevant after the major changes made in version 2.00 of the PDD.	According to the financial analysis an Equity IRR is considered. The investment decision is clarified (May 2008). The PP has provided objective evidences to demonstrate that the benchmark selected is suitable for the proposed project activity, available at the date of the investment decision made and it is in compliance with the starting date of the proposed project activity as well as the calculation for deriving the benchmark thus <u>CAR 9 is closed.</u>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
CAR 10 <i>It is not clear from the PDD from which sources have been taken the input parameters used in the financial analysis and if they are valid and applicable at the time of the investment decision. Moreover neither the PDD nor in the IRR sheet contain the source references for the input values used in the financial analysis.</i> <i>The PP is requested to provide objective evidences to support the following issues:</i> • <i>Third party evidences for the project cost (which can be in the form of contracts, invoices, audited accounts or certificate from auditors, etc.)</i> • <i>Breakdown of the total investment cost (79,473,322 USD)</i> • <i>Breakdown of the operational costs</i> • <i>Information regarding the loans, electricity sales prices</i> <i>Furthermore, the PP is requested to clarify/justify the loan issues as summarized below:</i> • <i>Any other cost of borrowing, for instances, arrangement fees, etc.</i> • <i>The duration of the loan period, please specify the repayment dates</i>	B.5.2.5 B.5.5.1	Please see version 2.00 of the Financial analysis “TorosHPPFinancialAnalysisV2.0.xlsx” . The references are firmly provided, and considering the date of investment decision, the FSR data was available at that time. In the new revised version 2.00 of the financial analysis the investment cost is based on the numbers provided in the FSR and are more conservative as : 65,887,378 USD. Its breakdown is also given, and these numbers are based on host country authorities approaches. Operational cost is also taken from the FSR, but as the FSR doesnot take into account the staff salaries, staff number is taken from the Pre-EIA report as 9 staff, and it breakdown is estimated, and annual salaries are calculated taking into account the possible salaries for the time of investment decision. Loan agreement is provided as “Doc6-TorosLoanAgreement”and the payback schedule is requested to be provided by the Project owners Finance department and it is integrated to the financial analysis under the title of the tab : “LoanDetails” No the project only had VAT exemption for the purchase of the hydromechanical equipment, and this is taken into consideration in the financial analysis version 2.00.	The sources of inputs for investment parameters used in the financial analysis and if they are valid and applicable at the time of the investment decision have been clarified in the PDD and in the Financial Analysis CAR 10 is closed.

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
<i>The PP is also requested to justify whether any existing debt at the time of decision making with evidence.</i> The PP is requested to justify if they receive other financial support, such as ex-tax break and government subsidy, etc. for the project with objective evidences			
CAR 11 <i>The PP is requested to clarify why electricity production is not included in the sensitivity analysis as it contributes more than 20% of revenues/costs.</i> No justification has provided on the variations of each parameter to reach the benchmark and the likelihood for that to happen. Clarification is requested	B.5.2.6 B.5.2.7 B.5.2.8 B.5.5.1	Because electricity production is taken as the maximum number and the revenue can only be changed by the price of the electricity. So it makes the same outcome, to simplify the approach we have considered the two under the revenues heading.	A discussion has provided on the variations of each parameter to reach the benchmark and the likelihood for that to happen. Clarification is requested. Justification for the electricity exclusion is sufficient. CAR 11 is closed.
CAR 12 <i>The PP is requested to define the geographical scope and the scope of technology used and scale with respect to regulatory framework, investment climate, access to technology and finances, etc. for the common practice analysis with objective evidences.</i> The PP is requested to discuss how many similar	B.5.4.1 B.5.4.2 B.5.4.3 B.5.4.4 B.5.5.1	Please see version 2.00 of the PDD, the common practice analysis is updated according to the "According to the Guidelines on Common Practice (EB69 Report;Annex8-version 02)". Please also check the xls sheet that we have presented the common practice data utilized for the project activity.	The common practice analysis is updated according to the "According to the Guidelines on Common Practice (EB69 Report;Annex8-version 02)". thus <u>CAR 12 is closed.</u>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
projects are in operation in the selected area and why they are not similar to the proposed project activity as required under sub steps 4a and 4b of the additionality tool. All assumptions used for the analysis must be supported by objective evidences.			
CAR 13 <i>The PP is requested to use the latest version of the methodological tool to calculate the GHG emission reduction.</i> <i>The OM emission factor calculation in the spreadsheet "Toros_CM_2010.xls" is not in line with the methodological tool. Clarification is requested.</i> The PP is requested to clarify the calculation by referring the document "request for guidance: application of AM0005 and AMS-I.D in China" and the latest version of the methodological tool "Tool to calculate the emission factor for an electricity system".	B.6.1.1	The Emissions calculations are updated please see version 2.00. "TorosHydro_CM_2012v2.0"	"Tool to calculate the emission factor for an electricity system". (Version 04.0) applied thus <u>CAR 13 is closed.</u>
CAR 14 <i>It is not clearly indicated whether the heating value of the fuel in the statistics is net calorific value or gross calorific value. Clarification is requested.</i> <i>The PP is requested to provide the original sources of data for the additional capacity of the grid for year 2007. Furthermore, it is found that the values of additional capacity of Turkish is not in line with the sources</i>	B.6.1.2 B.6.4.1 B.6.5.1	Please see version 2.00 of the PDD. With the updaed version this CAR is deemed irrelevant.	The heating values of fuels consumed in thermal power plants is expressed in net calorific value. Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources has been calculated according to the "Tool to calculate the emission

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
<i>used as indicated in the PDD version “10 years of electricity production capacity projection.” Clarification is requested.</i> <i>The PP is requested to justify why such default value is chosen for the corresponding power plant with objective evidence.</i> The PP is requested to justify how the ex-ante power generation from the project activity is determined in accordance with EB 48 Annex 11 with objective evidences.			factor for an electricity system”. (Version 4.0.0). Expected Annual Electricity Generation is 239,400 MWh according to the Electricity Production Licence Dated 18/01/2007 numbered EÜ/1062-2/782 page 7, thus <u>CAR 14 is closed.</u>
CAR 15 <i>The PP is requested to clarify whether gross or net electricity supplied to the grid is monitored.</i> Two of the parameters, namely, the installed capacity of the HEPP after the implementation of the project (Cap_{PJ}) and the area of the reservoir measured in the surface of the water when the reservoir is full after the implementation of the project (A_{PJ}), which should be monitored as per the applied methodology are not indicated in the PDD. Correction is requested. The monitoring and recording frequency for Cap_{PJ} and A_{PJ} are not indicated in the PDD. Clarification is requested	B.7.1.1 B.7.1.2 B.7.1.4 B.7.1.5 B.7.3.1	Please see version 2.00 of the PDD, the net electricity supplied to the grid will be monitored. Please see version 2.00 of the PDD Cap_j and A_{pj} are added, and their recording frequency is also shown.	The following parameters are monitored subsequent to validation: EG_y, Cap_{PJ}, A_{PJ}, thus <u>CAR 15 is closed.</u>
CAR 16 <i>The PP is requested to submit a copy of the EIA</i>	B.7.2.2 D.1.3	The EIA certification is added as Appendix III in version 2.00 of the PDD, the EIA	In appendix III the EIA exemption Certificate of the

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
<i>affirmative certificate for Toros HEPP for cross-verification. (an attachment in Annex of the PDD is not enough to demonstrate the evidences)</i> The PP is requested to submit the documented evidences regarding the regular monitoring from the local environmental authority.	D.1.4	certification related documents are provided as "Doc7-TorosEIACertifications"	project activity is provided, thus <u>CAR 16 is closed.</u>
CAR 17 The PP is requested to define the start date of the project in accordance with the Glossary term of CDM with objective evidences.	C.1.1	Please see version 2.00 of the PDD, the project activity was granted certificate of provisional acceptance on 17 May 2013. This date is considered as the project start date according to VCS version 3.00 rules. Please see "Doc8-TorosCertificateofProvisionalAcceptance"	The estimated project start date is defined as 17.05..2013, the date when project activity was granted certificate of provisional acceptance. This date is considered as the project start date according to VCS version 3.00 rules, thus <u>CAR 17 is closed.</u>
CAR 18 As per Section D.1 of the PDD version 01 of 21/03/2011, only the measures for mitigating the environmental impacts were mentioned, whereas the evaluation of the actual environmental impacts of the project is missing in the PDD. Correction is requested.	D.1.1 D.1.3	As per the host country regulations the project didn't undergo a full EIA process however, a Project Identification Document was Presented to the Adan Provincial Representation of the Ministry of Environment and Forestry (later the title of the ministry changed to Ministry of Environmnet and Urban Planning) and accordingly the project was granted a EIA Exemption certification presented as Appendix III of the PDD version 2.00. We have summarized possible environmental impacts related to the project activity in the relevant chapter of the PDD version 2.00.	The environmental impacts of the project activity are explained in Section 5 of the VCS DP version 02 in line with the EIA Report, thus <u>CAR 18 is closed.</u>
CAR 19 The PP is requested to include this information in the PDD with objective evidences.	E.1.1 E.1.2 E.1.3	As explained in the PDD version 2.00 "According to the rules and regulations at the time of licence application for electricity	It is still not clearly indicated in the PDD how the stakeholders are invited to provide their

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
It is not clearly indicated in the PDD how the stakeholders are invited to provide their comment for the proposed project activity. The PP is requested to include this information in the PDD with objective evidences. The PP is requested to provide documented evidence to demonstrate that the local stakeholders' comments indicated in the PDD version 01 were received from local stakeholders.	E.1.4	production the project was given a certificate of Exemption for the EIA process, by the Adana Provincial Directorate of Environment and Forestry. Because, at the time of licence application the Hydro Power Plants that had installed capacity lower than 50 MW was considered to be out of scope according to EIA regulation that was active during the period of application. And since no EIA process was followed, there was no stakeholders consultation meeting held for the project activity. However, in order to comply with the rules and regulations of the host country (also listed in Appendix I), the project owner officially corresponded with all the relevant authorities that can as well be considered as stakeholders. The relations with public are monitored within the framework of the Social Carbon Standard Report." Please see Doc9a to d, as samples of the mentioned official correspondences. We have further elaborated the section related to stakeholders consultation, by providing a list of the correspondences with the dates of correspondence and the topics dealt in these correspondences. As we have explained earlier the stakeholders are not gathered into a meeting but they have been contacted on a one to one basis. In addition to this as explained in the PDD version 2.01 there is no extensive settlement nearby project area and there are not much local people living nearby, and therefore they are contacted about the project on an adhoc	comment for the proposed project activity. Also the final results of the consultation are not sufficiently described. <u>CAR 19 is not closed.</u> Sufficient information are provided. <u>CAR 19 is closed.</u>

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		basis.	
CL1 The PP is requested to justify whether the project activity involved technology transfer from Annex I country with documented evidence	A.4.2	The project activity is utilizing the latest technology available for the hydropower plants	No evidence of the technology transfer from Annex I Countries, anyway, it is not a requirement, thus the <u>CL 1 is closed.</u>
CL2 The PP is requested to justify the sources of finances for developing the project activity with documented evidences	A.4.3	Please see "Doc6-TorosLoanAgreement" Document. 78.6 % of the project was financed by private bank loan and for the rest the project tittle owners capitals were used.	The sources of finances for developing the project are justified, thus <u>CL 2 is closed.</u>
CL 3 The PP is requested to provide documented evidences to demonstrate the corporation tax as well as the choice of the 20 years depreciation years and confirming this is in accordance with normal accounting practice in the Host Country	B.5.2.3 B.5.5.1	The related references is provided on the PDD version 2.00 see table 5 on page 16.	Documented evidences are provided, thus <u>CL3 is closed</u>
CL 4 The PP is requested to provide evidences for demonstrating the salvage values assumption	B.5.2.4 B.5.5.1	As the approaches have been changed this request is deemed irrelevant please see version 2.00 of the PDD and Financial Analysis.	Approach changed. Moreover PP provided evidences for demonstrating that operational lifetime of the project activity is 20 years. <u>CL 4 is closed.</u>
CL 5 The number of redundant metering devices is not specified in the PDD, while it was indicated two auxiliary meters will be installed. Clarification is requested. The PP is requested to specify the accuracy class of the meters that are used for monitoring	B.7.1.3	There will be one main and one auxiliary meter. This is indicated in the uptodate version of the PDD (version 2.00).	Two meters will be installed, one main meter and one backup meter. The accuracy class of the meters is defined as 0.2S in the VCS PD version 02. <u>CL 5 is closed.</u>
CL 6 It is not clearly indicated in the PDD that the storage area of records. Clarification is requested.	B.7.3.2	This is indicated in the uptodate version of the PDD (version 2.00).	The collected data will be kept by Bereket Enerji Üretim Anonim Şirketi During the crediting period and until two

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
			years after the last issuance of VERs for the “Toros Hydroelectric Power Plant” project activity for that crediting period. <u>CL 6 is closed.</u>
CL 7 The PP is requested to provide evidences for demonstrating that operational lifetime of the project activity is 20 years.	C.1.2 C.2.2	This is indicated in the uptodate version of the PDD (version 2.00).	Evidences for demonstrating that operational lifetime of the project activity is 20 years. <u>CL 7 is closed.</u>



RINA

CERTIFICATO DI QUALIFICA QUALIFICATION CERTIFICATE

Rita Valoroso

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

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. OPT
Head of OPT

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

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

Wing Yu Tong

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

è qualificato come¹:
is qualified as:

CDM-TEC, VCS-TEC, GS-TEC, SCS-TEC, JI-TEC,
VCS-VAL

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

1.2

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
1.2	Energy generation from renewable Energy sources	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	04-12-2010	-
6	29-07-2013	Annual revision

Il Resp. QPT
Head of QPT

¹ Legend:

VAL:	Validator	CDM: Clean Development Mechanism
VER:	Verifier	VCS : Verified Carbon Standard:
TEC:	Technical Expert	GS: Gold Standard
TL:	Team Leader	SCS: SocialCarbon Standard
FIN-EXP:	Financial Expert	JI: Joint Implementation
DET:	Determiner	

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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RINA

CERTIFICATO DI QUALIFICA QUALIFICATION CERTIFICATE

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

Felice Alfieri

è qualificato come¹:
is qualified as:

CDM-TEC,
VAL, ITRP

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

13.2, 5.2

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
5.2	Caprolactam, nitric and adipic acid	5
13.2	Manure	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	13-09-2010	-
9	08-07-2015	Updating qualification as Validator and Technical Reviewer.

Il Resp. QPT
Head of QPT

Roma Severino

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 GHG GHG QUALIFICATION CERTIFICATE

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

Hasan Zor

è qualificato come¹:
is qualified as:

LOCAL EXPERT
(Turkish mother tongue)

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

-

AREA TECNICA TECHNICAL AREA	CODICE RINA RINA CODE	SCOPO SETTORIALE SECTORAL SCOPE	CODICE RINA RINA CODE
-	-	-	-

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	23-03-2011	-

Il Responsabile di Schema
Scheme Manager

Il Resp. Tecnico della Divisione
Head of CRT

¹ Legend:

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

CDM: Clean Development Mechanism
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GS: Gold Standard
SCS: Social Carbon Standard
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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, quale Validatore / Verificatore VCS, per condurre la Validazione e la Verifica di Progetti VCS, da GS Foundation, quale Validatore / Verificatore GS, per condurre la Validazione e la Verifica di Progetti GS, da Ecologica Institute quale Validatore/Verificatore SCS, 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, as VCS Validator/Verifier, to carry out Validation and Verification of VCS Projects, by the GS Foundation, as GS Validator/Verifier, to carry out Validation and Verification of GS Projects and by the Ecologica Institute, as SCS Validator/Verifier, to carry out Validation and Verification of SCS Reports



RINA

CERTIFICATO DI QUALIFICA QUALIFICATION CERTIFICATE

Rekha Menon

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

è qualificato come¹:
is qualified as:

CDM-TEC, -VAL, -VER, -TL

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

1.2, 2.1, 13.1, 13.2, 14.1

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
1.2	Renewables	1
2.1	Energy Demand	2
13.1	Solid Waste and wastewater	13
13.2	Manure	13
14.1	Afforestation and reforestation	14

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	06-03-2008	-
10	22-12-2014	Update qualification according to AS ver.6.0

Il Resp. QPT
Head of QPT

¹ Legend:

VAL:	Validator	CDM: Clean Development Mechanism
VER:	Verifier	VCS : Verified Carbon Standard:
TEC:	Technical Expert	GS: Gold Standard
TL:	Team Leader	SCS: SocialCarbon Standard
FIN-EXP:	Financial Expert	J1: Joint Implementation
DET:	Determiner	

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