



Validation report form for CDM project activities

(Version 01.0)

Complete this form in accordance with the "Attachment: Instructions for filling out the validation report form for CDM project activities" at the end of this form.

VALIDATION REPORT

Title of the project activity	Jbel Sendouq-Khalladi ("Khalladi") wind farm project in Morocco
Version number of the validation report	1.0 TN P-No. : 8000460676 – 16/088
Completion date of the validation report	17/10/2017
Version number of PDD to which this report applies	CDM PDD ver 3.4 GS passport ver 1.4
Date when PDD was uploaded for global stakeholder consultation	10/02/2012 (CDM publications at UNFCCC #9047)
Project participant(s)	ACWA Power Khalladi S.A.
Host Party	Morocco
Estimated annual average GHG emission reductions or net removals in the crediting period (tCO_{2e})	143,960 tCO _{2e}
Sectoral scope(s) and selected methodology(ies)	Scope: 1 / Technical Area: 1.2 CDM Methodology: ACM0002 ver. 12 - Consolidated baseline methodology for grid-connected electricity generation from renewable sources
Name of DOE	TÜV NORD CERT GmbH
Name, position and signature of the approver of the validation report	 Rainer Winter Final Approver

SECTION A. Executive summary

Dubai Carbon Centre of Excellence has commissioned the TÜV NORD JI/CDM Certification Program to carry out the retroactive GS validation of the project:

“Jbel Sendouq-Khalladi (“Khalladi”) wind farm project in Morocco”

with regard to the relevant requirements for Gold Standard project activities.

The project reduces GHG emissions due to generation of renewable energy which is wheeled to different consumers via the local national grid. The project installs 40 wind turbine generators (WTG) with a nominal unit capacity of 3 MW each, providing a total capacity of 120 MW.

Details of the project location are given in table A-1 below:

Table A-1: Project Location

No.	Project Location
Host Country	Morocco
Region	Tangier-Tetouan Region, Fahs Anjra Province
Latitude:	See table below
Longitude:	See table below
Project location address:	The project is located within three rural communes of Melloussa, Qsar Sghir and Khmis Anjra. approximately 50 Km east of the town of Tangier, in the south of the Qsar Sghir village, between cities of Tangier and Sebta.

Geographical GPS locations of the 40 WTGs in UTM WSG84 Z30 system

WTG No.	Latitude:	Longitude:
V01	264743	3962336
V02	264770	3962144
V03	264884	3961681
V04	264868	3961495
V05	264766	3961322
V06	265746	3961780
V07	266113	3961792
V08	266118	3962032
V09	266095	3962251
V10	266108	3962480
V11	266760	3961670
V12	266065	3961409
V13	266650	3961426
V14	266810	3961159
V15	266964	3960955
V16	267031	3960723

V17	267089	3960502
V18	267180	3960280
V19	267273	3960113
V20	267438	3959923
V21	267527	3959738
V22	267596	3959291
V23	267658	3959122
V24	267815	3958945
V25	267933	3958779
V26	268083	3958594
V27	268154	3958418
V28	268251	3958132
V29	268196	3958013
V30	268588	3957977
V31	268058	3957789
V32	268130	3957598
V33	268143	3957434
V34	267817	3957184
V35	267898	3956991
V36	267906	3956787
V37	267951	3956787
V38	268116	3956551
V39	268289	3956393
V40	268514	3956179

Basic technical details of the project are summarized in table A-2.

Table - A-2: Technical data of the project activity

Parameter	Unit	Description
No. of WTGs	-	40
Manufacturer	-	Vestas
Hub height	m	80
Rotor diameter	m	90
Blade length	m	44
Capacity of each WTG	kW	3,000
Total installed capacity	kW	120,000
Technical lifetime	a	20

In detail the conclusions can be summarised as follows:

- The project is in line with all relevant host country criteria and all relevant UNFCCC requirements for CDM. Project activity approval has been obtained from DNA of Morocco vide the Letter of Approval (HCA) dated 10/08/2012 (Code: 05707).
- The project's additionality is sufficiently justified and referenced in the PDD.
- The monitoring plan is transparent and adequate.
- The sustainable development is sufficiently justified and referenced.
- The calculation of the project emission removals is carried out in a transparent and conservative manner, so that the calculated emission removals of **1,007,720 tCO₂e** are most likely to be achieved within the 7 years of renewable crediting period^{/PDD/}.
- The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the validation.

SECTION B. Validation team, technical reviewer and approver

B.1. Validation team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader/Technical Expert/Validator	IR	Winter	Stefan	TÜV NORD CERT GmbH	x	x	x	x
2.	Host country expert	IR	Beqqal	Samir	TÜV NORD CERT GmbH	x	-	-	x

B.2. Technical reviewer and approver of the validation report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer	EI	Lubanga	David	-
2.	Technical Reviewer/Approver	IR	Winter	Rainer	TÜV NORD CERT

SECTION C. Means of validation

C.1. Desk review

During the desk review all documents initially provided by the client and publicly available documents relevant for the validation were reviewed. The main documents are listed below:

- the draft PDD including the monitoring plan^{/PDD/},
- regulations and approval of project activity^{/ESMMP/, /EL/}
- the Local Stakeholder Consultation Report^{/LSC/},

- the Grid Emission Factor calculation spreadsheet and data Sources^{/XLS/}.
- the emission reduction calculation spreadsheet^{/XLS/}.
- technical details of the project^{/PDD/,/PPA/,/CON/}
- the Summary of the ESIA
- the Environmental Certificate
- the Plant approval by the host country of Morocco
- National legislation^{/MC/,/CTM/,/EL/},

Other supporting documents, such as publicly available information on the UNFCCC website and background information were also reviewed. The published PDD and supporting background documents related to the project design and baseline were reviewed.

Furthermore, the validation team used additional documentation by third parties like host party legislation, technical reports referring to the project design or to the basic conditions and technical data.

C.2. On-site inspection

Duration of on-site inspection: 19/12/2016 to 21/12/2016				
No.	Activity performed on-site	Site location	Date	Team member
1.	Opening meeting	Tanger	19/12/2016	Stefan Winter
2.	Participation in stakeholder feedback round, interview with local people as well as government representatives	Melloussa, Ksar Sguir, Anjra/Fahs	20/12/2016	
3.	Participation in stakeholder feedback round, interview with local people as well as government representatives, Site visit, interview with personnel, document check, closing meeting	Project site	21/12/2016	

C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Bosse	Thomas	Dubai Carbon centre of Excellence	19-21/12/2016	All issues incl. passport, regulations, monitoring, references, supp. docs	Stefan Winter
2.	Tasnim	Suraiya				
3.	Lee	Maria	WOCAN		Support for translation, consulting w.r.t social and economic benefits for women	
4.	Mernizi	Ramzi	NOMAC/HR Manager		Employment regulations, procedures, employment contracts, salary	
5.	Honcini	Adil	Freelance engineer, consultant		Host country legislation, land lease, CSR agreement, relationship with communities	
6.	Ungar	David	ACWA Power / Executive Director		Project set-up, financing, ownership,	
7.	Boughlala	Amal	ACWA Power Khalladi / Safety/Social Manager	21/12/2016	HSE procedures, induction program, toolbox meetings, training, ISO certification, status of construction, technical specifications, grievance procedure, problems with communities, etc.	
8.	Matine	Mohamed	ACWA Power Khalladi / Construction Manager			
9.	Mdlik	Abdal	ACWA Power Khalladi / Security person at gate			
10.	Chergiel	Ali				
Stakeholders from village Mellousa						

14.	Al Hussani	Mohamed	Vice president of Civil Society association	20/12/2016	Any complaints, problems with the project, benefits, whether local people have been employed and further advantages from the project activity, process of invitation, land ownership. Host country regulations esp. land ownership and lease
15.	Khalid	Sahafi	Mellousa Association President		
16.	Al Hussani	Mohamed	student/deputy general Mellousa Association		
17.	Khayat	Mohamed	Mellousa HQ employee		
18.	Al Zahra Al Suisi Al Naimi	Fatima	Civil Society Mellousa Association		
19.	Zainab		Mellousa Association employee		
20.	Al Zahra	Ezgel	Civil Society		
21.	Fadheela	Hilali	Dar Al Fatat in Mellousa		
22.	Al Chat	Thuraiya	Dar Al Fatat Association		
23.	Lanjri	Mohamed	Lanjriech, Mkadem		
24.	Al Khalfawi	Mina	Mellousa Association Employee (technical)		
25.	Al Chat	Hafizeh	Mellousa Association Employee		
26.	Alout	Mohamed	-		
27.	Al Zaaf	Nadia	Ain Hamra Association for Education		
28.	AlAoui	Mouhsine	ACWA Power Khalladi / MD		
29.	Tech	Echchal	CR Melloussa Vice President General		
30.	Mohammad	Khayat	ACWA Power Khalladi		
31.	Ghribo	Al Mujtak	Lanjriech Collective Representative		
32.	Al Ramzi	Mueed	Team for collective motivation		
Stakeholders from village Ksar Squir,					

	Al Haitho	Abdelwahid	Ain Rmel Representative	20/12/2016	Any complaints, problems with the project, benefits, whether local people have been employed and further advantages from the project activity, process of invitation, land ownership. Host country regulations esp. land ownership and lease	
	Al Shryah	Abdelsalam	Ain Rmel Representative			
	Al Hamdi Daoud	Abdelrahman	Dar Foual Representative			
	Shrayih	Mahmoud	Ksar Squir Association President			
	Alsaeedi	Abdelmajeed	Douar Dar Foual Mkadem			
	Salih	Abdelnour	Higher Association Ain Rmel member			
	Alhnin	Abdelaziz	Ksar Sguir Representative			
	Karrouk	Abdelaziz	Dar Foual Representative			
	Al Hasan	Salih	Ain Rmel Mkadem			
	Dhwein	Younis	ACWA Power Khalladi			
	Cano	Diego	ACWA Power Khalladi			
	El Bakali	Abdelilah	Ksar Sguir First Vice President			
	Hassan	Khadraoui	Ksar Sguir Director de service			
	El Matani	Abdelilah	Association Anjra Power Development Vice President			
Stakeholders from village Anjra/Fahs						

	Jameela		Woman Union / Treasurer	20/12/2016	Any complaints, problems with the project, benefits, whether local people have been employed and further advantages from the project activity, process of invitation, land ownership. Host country regulations esp. land ownership and lease	
	Al Qadi	Hanan	Association of Women Support / Vice president			
	Benajiba	Imane	Anjra Association for development and heritage conservation			
	Al Turkey	Khadija	National Assembly of the Union of Moroccan Women			
	Al Eshyry	Hajar	Al Amal Association			
	Ilah	Abdul	-			
	Belal		Wad Al Dor Environment and Social Development			
	Asiri	Rashid	Presenter			
	Lateef	Abdul				
	Allttalidi	Mohammed				
	Al Erya	Albigali				
	Al Lafmesh	Hanan	Collective Office			
	Al Wahed Al Aanni	A.	Aoun Authority			
	Al Asiri	Rashid	Free Group			
	Mohammed,		Local Authority Representative			
	Husayni	Adel	Studies Office			
	Terirak	Najma	C/R Anjra			

C.4. Sampling approach

D.4.1 Sampling during validation

☒	No sampling approach has been used by the PP to determine the monitored parameters				
☐	A sampling approach has been taken for the following monitored parameter(s):				
	Parameter	Sampling approach ¹⁾	Sampling Type ²⁾	Population	Sample Size

¹⁾ Sampling Approaches:

SiRS: Simple Random Sampling
 StRS: Stratified Random Sampling
 SS: Systematic Sampling
 CS: Cluster Sampling
 MSS: Multi-stage Sampling

²⁾ Sampling Types:

PS: Parameter Sampling

C.5. Clarification requests, corrective action requests and forward action requests raised

Areas of validation findings	No. of CL	No. of CAR	No. of FAR
Global stakeholder consultation	-	-	-
Approval	-	-	-
Authorization	-	-	-
Contribution to sustainable development (Sustainability Dev. Matrix)	-	5	-
Modalities of communication	-	-	-
Project design document / passport	-	2	-
Description of project activity	2	2	-
Application of selected baseline and monitoring methodology and selected standardized baseline			
- Applicability of methodology and standardized baseline	-	-	-
- Deviation from methodology	-	-	-
- Clarification on applicability of methodology, tool and/or standardized baseline	-	-	-
- Project boundary	-	-	-
- Establishment and description of baseline scenario	-	-	-
- Demonstration of additionality	-	-	-
- Emission reductions	-	-	-
- Monitoring plan	-	-	-
Duration and crediting period	-	-	-
Environmental impacts	-	-	-
Local stakeholder consultation	-	-	-
Others (missing documents)	-	1	-
Total	2	10	0

SECTION D. Validation findings

D.1. Global stakeholder consultation

Means of validation	By means of the draft PDD submitted to the validation team by the project participants, the DOE has made the PDD publicly available prior to the start of the validation activities through a dedicated interface on the UNFCCC CDM website in accordance with applicable validation requirements related to the global stakeholder consultation in the VVS. The following sources of information have been used in this context: • /PDD/ • /unfccc/	
Findings	☒	The PDD was made publicly available through a dedicated interface on the UNFCCC CDM website for global stakeholder consultation.
	☒	No comments were received during the global stakeholder consultation period.
	☐	Comments were received during the global stakeholder consultation period. The comments (in unedited form) and the consideration/response

		of the validation team are presented below:
Conclusion	☒	No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	☐	The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
		The project is already registered under UNFCCC as a CDM project #9047. The initial CDM PDD was published from 10/02/2012 to 10/03/2012. Besides a first stakeholder consultation has been taken place in October 2011 in the communes Melloussa, Ksar Sghir and Anjra as well as on 02/02/2012 with further interested parties including local authorities, experts, local associations. A third stakeholder consultation took place from 03 to 06 October 2015. On 20/12/2016 a related feedback round in line with Gold Standard requirements have been carried out. Additionally to this further a stakeholder feedback round has been conducted in line with Gold Standard requirements including live meetings to the three main communes (douar) as evidenced during supporting documents such as LSC report, participation of DOE team leader itself for meetings on 20/12/2016, minutes of meeting and pictures etc. The project documentation has been published from Dec 2016 to Feb 2017.

D.2. Approval

Means of validation		By means of the LoA issued by the DNA of Morocco, the validation team was able to assess the approval from the DNA in accordance with related applicable validation requirements in the VVS. The following sources of information have been used in this context: • /PDD/ • /HCA/ • /dna/ • /unfccc/
Findings	☐	All DNAs from each party involved in the PA issued a LoA.
	☒	The LoA(s) confirms: - that the party is a party to the Kyoto Protocol; - that participation is voluntary; - that the project contributes to sustainable development (only host party LoA); the precise project activity title in the PDD intended for submission for registration.
	☒	The LoA is authentic.
	☒	The respective requirements have widely been complied with. However, the following issues needed to be addressed in this context: CL 02: As the exact project participants are unclear.
Conclusion	☐	No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	☒	The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4. The project is already registered under UNFCCC as a CDM project activity #9047. However ACWA Power has acquired UPC Renewables SARL. All related approvals for initial registered PPs under CDM have been provided and are available on the related UNFCCC project webpage. The project company is

	now ACWA Power Khalladi who is implementing the project as per interview with related representatives and check of supporting documents.
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D.3. Authorization

Means of validation	By means of the LoA issued by the DNA of Morocco, the validation team is able to assess the authorization from the DNA in accordance with related applicable validation requirements in the VVS. The following sources of information have been used in this context: • /PDD/ • /HCA/ • /dna/ • /unfccc/
Findings	☒ The host Party has authorized the project activity in accordance with applicable validation requirements related to the authorization in the VVS.
	☒ The respective requirements have widely been complied with. However, the following issues needed to be addressed in this context: CL 02: As the exact project participants are unclear.
Conclusion	☐ No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	☒ The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
The project is already registered under UNFCCC as a CDM project activity #9047. However ACWA Power has acquired UPC Renewables SARL. All related approvals for initial registered PPs under CDM have been provided and are available on the related UNFCCC project webpage. The project company is now ACWA Power Khalladi who is implementing the project.	

D.4. Contribution to sustainable development

Means of validation	By means of the PDD submitted by the project participants, site visit to project location and interviews with project participant representatives, the validation team has assessed the contribution of the project activity to the sustainable development of the host Country in accordance with applicable related validation requirements in the VVS. The following sources of information have been used in this context: • /PDD/ • /LoA/ • /unfccc/ • /IM01/
Findings	☒ The PDD clearly states that the project contributes to sustainable development of the host country and evidence were presented to the validation team to confirm this information.
	☒ The LoA confirms that the project contributes to sustainable development of the host country.
	☒ The respective requirements have widely been complied with. However, the following issues needed to be addressed in this context: CL 02
Conclusion	☐ No CARs/CLs have been raised in this context. No correction was required in the context.
	☒ The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be

		closed out. For details please refer to Appendix 4.
	As per registered PDD the project contributes to sustainable development through: • Diversification of the national supply of energy; • Project in line with the Moroccan government's objectives to increase the use of renewable energy and reduce reliance on imported fossil fuels. The diversification of energy sources for electricity production is one of the objectives of the new Moroccan energy strategy with an objective of 20% of renewable energy capacity in the nation's electricity production in 2012 and a targeted development of 2,000 MW of installed wind capacity by 2020. • Local development of renewable energy usage; • Reduction of the country's imports in hard currency by the use of wind power instead of electricity mainly currently produced from imported coal, oil products and natural gas; • Reduction of national GHG emissions in accordance with the objectives of the UNFCCC ; • Contribution to the development of national and foreign investments in the energy sector; • Clean technology transfer and local capacity building in wind electricity generation and optimal use of wind energy in a heavy industry ; • Increases local employment opportunities during the construction phase and subsequently for the project's operation phase.	

D.5. Modalities of communication

Means of validation	By means of comparison of the Modalities of Communication (MoC) submitted by the project participants and the contract among the PP and TÜV Nord, the validation team has assessed the MoC in accordance with applicable related validation requirements in the VVS. The following sources of information have been used in this context: • /PDD/ • /MoC/ • /VVS/ • /unfccc/ • /IM01/	
Findings	☐	A valid Modalities of Communication (MoC) was provided to the validation team from a project participant with whom the DOE has a contractual relationship.
	☐	The MoC was signed by a duly authorized person on behalf of the respective project participant.
	☐	The MoC statement was correctly completed.
	☒	The respective requirements have widely been complied with. However, the following issues needed to be addressed in this context: CL 02
Conclusion	☐	No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	☒	The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	The project participant and focal point is included in the presented Modalities of Communication statement, as well as the personal identities, including specimen signatures and employment status. The project is already registered as a CDM project under UNFCCC #9047. The	

	project webpage provides a MOC. However clarification was requested vide CL 02 as ACWA Power has acquired the PP UPC Renewables SARL. As per interview with representatives of ACWA Power UPC Renewables SARL still has a share in the project company ACWA Power Khalladi.
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D.6. Project design document

Means of validation	A Gold Standard passport has been submitted to the validation team by the project participants. By means of the Gold Standard website it has been checked whether the latest applicable passport template has been used. Further it has been checked whether the latest instructions for filling out the passport template have been followed. Every section has been checked against the respective guidance. The following sources of information have been used in this context: • /PDD/ • /GS-PP/ • /GS-T/ • /unfccc/	
Findings	☒	The latest passport template as listed on the Gold Standard website has been used.
	☐	The latest instructions for filling out the passport have been followed. All raised findings have been correctly solved.
	☒	The respective requirements have widely been complied with. However, the following issues needed to be addressed in this context: CAR 02, CAR 10
Conclusion	☐	No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	☒	The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	After update of the passport it is in line with the requirements to fill the passport.	

D.7. Description of project activity

Means of validation	By means of comparison of the registered PDD and passport submitted by the project participants, site visit to project location and interviews with project participant representatives as well as local stakeholders, the validation team has assessed the description of the proposed CDM project activity in accordance with applicable related validation requirements. The following sources of information have been used in this context: • /PDD/ • /GS-PP/ • /unfccc/ • /VAL/ • /PPA/, /OM/, /CON/, /LoA/	
Findings	☒	The PDD and the passport contain a clear, accurate and complete project description.
	☒	The information regarding the project participant is listed in the PDD and it is consistent with Appendix 1 that contains the contact information.
	☒	This description is in accordance with the real situation or (in case of greenfield projects) is it most likely that the project will be implemented according to the project description.

	☐	The project involves an alteration of the existing installation or process and there is a clear description available regarding the differences between the project and the pre-project situation.
	☐	The project qualifies as a small scale CDM project activity as defined in decision 4 / CMP.1 annex II.
	☐	The project qualifies as an afforestation and reforestation (A/R) CDM project activity.
	☒	The respective requirements have widely been complied with. However, the following issues needed to be addressed in this context: CL 02, CAR 01
Conclusion	☐	No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	☒	The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
		The project is already CDM registered vide UNFCCC #9047. Therefore the project description in the Gold Standard passport has been compared with the registered PDD as well as by onsite visit and further supporting documents such as Khadalli project description, Env. And Social Action Plan, and others. Based on that the project description is correct however the involvement of project participants as well as the acquisition of ACWA Power has to be further clarified. Besides the start date of the project activity had to be clarified as the passport refers to 01/07/2016 the date when WTG and elec contracts have been signed which is inconsistent with information received during site visit. Please refer to closure of CAR 01 on further assessment of the start date. The issues have been revised, clarified and could be successfully closed.

D.8. Application of selected baseline and monitoring methodology and selected standardized baseline

D.8.1. Applicability of methodology and standardized baseline

Means of validation	By means of comparison of the PDD and the passport with (i) the applied CDM methodology, (ii) all applicable CDM Meth tools, and (iii) if applicable, a standardized baseline the validation team has checked whether the project activity is in compliance with the related requirements of the applied methodology/tools. The following sources of information have been used in this context: • /PDD/ • /GS-PP/ • /ACM2/ • /unfccc/	
Findings	☒	The project applies a valid version of a CDM Methodology.
	☒	All applied methodological tools are valid and approved.
	☒	The applied methodology and methodological tools are derived from UNFCCC CDM website.
	☒	All methodology applicability conditions are met.
	☒	The project is in line with all requirements and stipulations mentioned in all sections of the applied methodology.
	☐	The project activity is expected to result in significant emissions, related both to project and leakage, other than those listed in the methodology.

	☐	The respective requirements have widely been complied with. However, the following issues needed to be addressed in this context:
Conclusion	☒	No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	☐	The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	The project activity applies approved methodology ACM0002 version 12.0, Grid-connected electricity generation from renewable sources which is valid at the moment of the validation process. All applicability conditions of the applied methodology are met as the project is already CDM registered under UNFCCC. As per registered PDD, the project activity also applies the following methodological tools: - <i>Tool to calculate the emission factor for an electricity system ver 2.2.1^{TL}</i> - <i>Tool for the Demonstration and Assessment of Additionality ver 6.1.0^{TL}</i> which are the latest ones available at time of requesting registration as a CDM project activity at the UNFCCC. Methodology and tools are derived from UNFCCC CDM website. Hence, the PA is in line with all requirements and stipulations mentioned in all sections of the applied methodology.	

D.8.2. Deviation from methodology

Means validation of	By means of comparison of the PDD with the applied CDM methodology and methodological tools, it has been checked whether any deviation from applied methodologies, including standardized baselines have been verified. The following sources of information have been used in this context: • /PDD/ • /ACM2/ • /unfccc/	
Findings	☒	No deviation from or revision of the methodology is necessary.
	☐	A deviation from or revision of the methodology is to be requested and approved.
	☐	The respective requirements have widely been complied with. However, the following issues needed to be addressed in this context: -
Conclusion	☒	No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	☐	The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	The project activity applies approved methodology ACM0002 ver. Version 12.0 which is valid at the moment of the validation process. No deviation or revision of the methodology was requested during the CDM or GS validation period.	

D.8.3. Clarification on applicability of methodology, tool and/or standardized baseline

Means validation of	By means of verification of the proposed CDM project activity with (i) the applied CDM methodology, (ii) all applicable CDM Meth tools, and (iii) if applicable, a standardized baseline the validation team has checked whether if any clarification on applicability of methodology, tool and/or standardized baseline to the proposed CDM project
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	activity has been issued. The following sources of information have been used in this context:
	• /PDD/ • /ACM2/ • /unfccc/
Findings	☒ No clarification on applicability of methodology, tool and/or standardized baseline to the proposed CDM project activity has been issued.
	☐ A clarification on applicability of methodology, tool and/or standardized baseline to the proposed CDM project activity has been issued.
	☐ The respective requirements have widely been complied with. However, the following issues needed to be addressed in this context: -
Conclusion	☒ No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	☐ The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	The project activity applies approved methodology ACM0002 ver. Version 12.0 which is valid at the moment of the validation process. There is no clarification on applicability of methodology, tool and/or standardized baseline to the proposed CDM project activity.

D.8.4. Project boundary

Means of validation	By means of comparison of the PDD with the applied CDM methodology, the validation team has assessed the project boundary in accordance with applicable related validation requirements in the VVS. The following sources of information have been used in this context:
	• /PDD//GS • /ACM2/ • /unfccc/ • /goog/ • /TL/
Findings	☒ The spatial (geographical) boundaries of the project are clearly defined at the PDD.
	☒ All sources and GHGs are included in the project boundary as required in the applied methodology.
	☐ The methodology allows choosing whether a source and/or gas is to be included. The choice is sufficiently explained and justified.
	☐ Emission sources that are expected to contribute more than 1% of the overall expected average annual emissions reductions and which are not addressed by the selected approved methodology have been identified
	☒ The respective requirements have widely been complied with. However, the following issues needed to be addressed in this context: CAR 02: Map with settlements in vicinity of the project is missing in passport.
Conclusion	☐ No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	☒ The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	The project boundary is validated as correct and compliant with the applied large-scale consolidated methodology and applied tools. Further the project is already registered as CDM project and the project boundary has already been

	assessed. During site visit for the Gold Standard validation it could be confirmed that the project boundary did not change since CDM registration. A list of GPS coordinates of all WTGs has been included in the GS passport. As this is a renewable energy project by installation of WTG the only relevant GHG is CO ₂ . No choice of GHGs is required.
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D.8.5. Establishment and description of baseline scenario

Means of validation	By means of comparison of the PDD with the applied CDM methodology, the validation team has assessed the baseline scenario in accordance with applicable related validation requirements in the VVS. The following sources of information have been used in this context: • /PDD/ • /GS-PP/ • /ACM2/ • /VAL/ • /unfccc/ • /ER/
Findings	☒ The baseline scenario is given by the applied methodology: <i>'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, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system".'</i>
	☐ All possible baseline scenarios have been considered.
	☐ The respective requirements have widely been complied with. However, the following issues needed to be addressed in this context:
Conclusion	☒ No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	☐ The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	As the project is already registered as a CDM project under UNFCCC this topic is covered in the related CDM PDD as well as CDM validation report. No change of the baseline scenario since registration of the CDM project.

D.8.6. Demonstration of additionality

Means of validation	By means of comparison of the PDD with the applied CDM methodology, the validation team has assessed the additionality of the project activity in accordance with applicable related validation requirements in the VVS. The following sources of information have been used in this context: • /PDD/ • /ACM2/ • /unfccc/ • /VAL/ • /GS-PP/ • /GS/
Findings	☒ The PDD describes how the project is additional in accordance with the requirements of the applied methodology
	☒ The simplified procedure to demonstrate additionality as per applied methodology is applicable
	☒ The respective requirements have widely been complied with; however;

Conclusion		the following issues needed to be addressed in this context: CAR 01, CAR 10							
	☐	No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.							
	☒	The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.							
	As the project is already registered as a CDM project under UNFCCC the additionality has been already demonstrated during UNFCCC registration process. Therefore no further assessment on this regard is required. During the onsite inspection and assessment no information has been observed which would trigger to re-evaluate the demonstration of additionality as set out in the CDM documentation. However as this is retroactive submission the following has been assessed:								
	<table border="1"> <tr> <td>a) Has a prefeasibility assessment been carried out?</td> <td>Yes Gold Standard has conducted a related pre-feasibility check.</td> </tr> <tr> <td>b) Has the PP provided the DOE during validation with the Gold Standard pre-feasibility assessment feedback?</td> <td>Yes, the PP provided. A conference call has been conducted on 24/08/2016 where Gold Standard has provided the PP with the outcome of the pre-feasibility assessment. The DOE has participated in the call.</td> </tr> <tr> <td>c) The revenues from CO₂-certificates were seriously considered in the decision to implement the project.</td> <td> The revenues for carbon credits have been seriously considered as the project is already CDM registered since 27/12/2012 under UNFCCC# 9047. Section B. of the GS passport states that the start date of the project is 01/07/2016, the signing of the WTG contract and Elec contract. Related CAR 01 has been raised to clarify the statement and the exact start date of the project. CAR 10 has been raised as related section in GS passport w.r.t. additionality has not been filled yet. </td> </tr> <tr> <td>d) There was continuous interest in CO₂-certificates for the project in parallel with its implementation</td> <td>As the project is already registered under CDM since 27/12/2012 long before the start date of the project activity and as the project is not commissioned yet this criterion is fulfilled. CO₂-certificates could have been claimed since the registration date under CDM. At least since the start of the crediting period this is 01/05/2014 or in case of GS in maximum up to 2 years prior to GS registration.</td> </tr> </table>		a) Has a prefeasibility assessment been carried out?	Yes Gold Standard has conducted a related pre-feasibility check.	b) Has the PP provided the DOE during validation with the Gold Standard pre-feasibility assessment feedback?	Yes, the PP provided. A conference call has been conducted on 24/08/2016 where Gold Standard has provided the PP with the outcome of the pre-feasibility assessment. The DOE has participated in the call.	c) The revenues from CO ₂ -certificates were seriously considered in the decision to implement the project.	The revenues for carbon credits have been seriously considered as the project is already CDM registered since 27/12/2012 under UNFCCC# 9047. Section B. of the GS passport states that the start date of the project is 01/07/2016, the signing of the WTG contract and Elec contract. Related CAR 01 has been raised to clarify the statement and the exact start date of the project. CAR 10 has been raised as related section in GS passport w.r.t. additionality has not been filled yet.	d) There was continuous interest in CO ₂ -certificates for the project in parallel with its implementation
a) Has a prefeasibility assessment been carried out?	Yes Gold Standard has conducted a related pre-feasibility check.								
b) Has the PP provided the DOE during validation with the Gold Standard pre-feasibility assessment feedback?	Yes, the PP provided. A conference call has been conducted on 24/08/2016 where Gold Standard has provided the PP with the outcome of the pre-feasibility assessment. The DOE has participated in the call.								
c) The revenues from CO ₂ -certificates were seriously considered in the decision to implement the project.	The revenues for carbon credits have been seriously considered as the project is already CDM registered since 27/12/2012 under UNFCCC# 9047. Section B. of the GS passport states that the start date of the project is 01/07/2016, the signing of the WTG contract and Elec contract. Related CAR 01 has been raised to clarify the statement and the exact start date of the project. CAR 10 has been raised as related section in GS passport w.r.t. additionality has not been filled yet.								
d) There was continuous interest in CO ₂ -certificates for the project in parallel with its implementation	As the project is already registered under CDM since 27/12/2012 long before the start date of the project activity and as the project is not commissioned yet this criterion is fulfilled. CO ₂ -certificates could have been claimed since the registration date under CDM. At least since the start of the crediting period this is 01/05/2014 or in case of GS in maximum up to 2 years prior to GS registration.								

D.8.7. Emission reductions

Means of verification	During the validation the calculations of GHG emissions reductions and the grid emission factor for Morocco have been checked. In detail the following has been verified: • Transparency: It has been checked whether the calculation of $EF_{grid,CM,y}$ and baseline emissions is fully traceable and, where used, the Excel calculation provides all calculation formulae. • Parameter consistency: It has been checked whether all internal and
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	external parameters and data used for the calculation are applied consistently in the PDD and the calculation spreadsheet. • Correctness: It has been checked whether the applied formulae and methods for calculating baseline emissions and the grid emission factor are in accordance with the Tool to calculate the emission factor for an electricity system, version 02.2.1, monitoring plan and the approved methodology. • Completeness: It has been checked whether all calculations are complete and without omissions. The equation applied for the determination of baseline GHG emissions is consistent with the methodology: $BE_{y} = EG_{PJ,y} * EF_{grid,CM,y}$ Where: BE_{y} : Baseline emission in year y; (tCO₂/year). $EG_{PJ,y}$: Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr) $EF_{grid,CM,y}$: Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (tCO₂/MWh) According to the methodology, $EG_{PJ,y}=EG_{facility,y}$ In line with applied methodology the following parameters are fixed throughout the 1st crediting period: • Combined margin CO₂ emission factor for grid connected power generation in year y ($EF_{grid,CM,y}$) • Operating Margin CO₂ emission factor for grid connected power generation in year y ($EF_{grid,OM,y}$) • Build Margin CO₂ emission factor for grid connected power generation in year y ($EF_{grid,BM,y}$) All data and parameters not monitored throughout the monitoring period of the project activity were correctly sourced in line with the applied methodology and tools. Correct assumptions were applied. Only Quantity of net electricity generation supplied by the project plant/unit to the grid in year y ($EG_{facility,y}$) will be monitored in line with applied methodology. The following sources of information have been used in this context: • /ACM2/ • /XLS/ • /PDD/ • /VAL/	
Findings	☒	The equations applied for calculation are correctly applied according to the approved methodology.
	☒	Conservative assumptions were used when calculating the project emissions.
	☒	All values of data to be applied for the purpose of calculating expected emissions reductions are considered to be reasonable, applicable and conservative.
	☐	The respective requirements have widely been complied with. However, the following issues needed to be addressed in this context:

Conclusion	☒	No CARs/CLs/FARs has been raised in this context. No correction was required. The project is in line with the respective requirements.									
	☐	The raised CARs/CLs/FARs has been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.									
	During the validation the calculations of GHG emissions reductions and the grid emission factor for Morocco have been checked. In The ER calculation is as following: $ER_y = BE_{,y} - PE_{,y}$ $BE_{,y} = EG_{PJ,y} * EF_{grid,CM,y}$ Where: <table> <tr> <td>ER_y</td> <td>Emission reductions</td> </tr> <tr> <td>PE</td> <td>project emissions</td> </tr> <tr> <td>$BE_{,y}$</td> <td>: Baseline emission in year y; (tCO₂/year).</td> </tr> <tr> <td>$EG_{PJ,y}$</td> <td>Quantity of net electricity generation</td> </tr> <tr> <td>$EF_{grid,CM,y}$</td> <td>CO2 emission factor for grid connected power generation</td> </tr> </table> According to the methodology, $PE_y = 0 \text{ t CO}_{2e}$ and $EG_{PJ,y} = EG_{facility,y}$ The calculations of the grid emission factor has been carried out in accordance with the options, equations and methods described in the <i>Tool to calculate the emission factor for an electricity system</i>^{TL}. The emission factor applied is an ex-ante value valid for the fixed crediting period. It can therefore be confirmed that the emission reduction calculation is in line with the applicable methodology and tool. Further the related default and ex-ante fixed values are already covered by the CDM registered PDD.		ER_y	Emission reductions	PE	project emissions	$BE_{,y}$	: Baseline emission in year y; (tCO ₂ /year).	$EG_{PJ,y}$	Quantity of net electricity generation	$EF_{grid,CM,y}$
ER_y	Emission reductions										
PE	project emissions										
$BE_{,y}$	: Baseline emission in year y; (tCO ₂ /year).										
$EG_{PJ,y}$	Quantity of net electricity generation										
$EF_{grid,CM,y}$	CO2 emission factor for grid connected power generation										

D.8.8. Monitoring plan

Means of validation	During the validation all monitoring parameters (as listed in chapter B.7.1 of the PDD) have been checked with regard to the (i) description, (ii) source of data, (iii) appropriateness of the applied measurement / determination method, (iv) monitoring frequency, (v) applied QA/QC measures, (vi) purpose of data (vii) formats. The following sources of information have been used in this context: • /PDD/, /GS-PP/ • /ACM2/ • /unfccc/ • /VVS/, /VAL/ • /PS/	
Findings	☒	All monitoring parameters required by the applied methodology are contained in the monitoring plan.
	☒	The means of monitoring of all parameters contained in the monitoring plan are feasible.

	☒	All equations necessary to ex-post emission reduction calculation are clearly defined.
	☐	The respective requirements have widely been complied with. However, the following issues needed to be addressed in this context:
Conclusion	☒	No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	☐	The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
		Further the related monitoring plan for methodology (GHG) parameters are already covered by the CDM registered PDD and assessed in the related CDM validation report.

D.9. Duration and crediting period

Means of validation	By means of comparison of the PDD and evidence presented, the validation team has checked the compliance of the duration and crediting period with validation requirements related to the starting date, duration and crediting period in the VVS. The following sources of information have been used in this context: • /PDD/ • /PDD-T/ • /PPA/ • /VAL/ • /GS/ • /GS-PP/	
Findings	☐	The starting date of the project activity is clearly defined and evidenced.
	☒	The type, duration and start date of the crediting period are clearly defined.
	☒	The operational lifetime of the project activity is clearly defined and evidenced.
	☒	The respective requirements have widely been complied with. However, the following issues needed to be addressed in this context: CAR 01
Conclusion	☐	No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	☒	The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
		The project start date is 01/07/2016 as per GS passport ver. 1.0 section B, the date of signing the WTG contracts and elec contract, and therefore, real action as per CDM Glossary of Terms. However CAR has been raised as the start date as per onsite interview is not when WTG contract and Elec contract was signed but in 01/07/2016 when financial closure was conducted. Only after this date the signed contracts became effective due to a clause which states when financial closure is not given the contract will become ineffective. The start of the (<i>renewable</i>) CDM crediting period is appropriately given as 01/05/2014 as per related UNFCCC project webpage^{/unfccc/}. The earliest start date of the GS project activity is in maximum two years before the date of GS registration.

D.10. Environmental impacts

Means of validation	By means of provided evidence and by the assessment of host party regulations regarding the environment, the validation team has checked the compliance of the analysis of the environmental impacts with applicable validation requirements related to the environmental impacts in the VVS. The following sources of information have been used in this context: • /VAL/ • /PDD/ • /IM01/ • /GS-PP/ • /ESAP/	
	☒	The project complies with host Party requirements for an Environmental Impact Assessment.
	☒	The respective requirements have widely been complied with. However, the following issues needed to be addressed in this context:
		CAR 04, CAR 05, CAR 06, CAR 07, CAR 08, CAR 09, CL 01
Conclusion	☐	No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	☒	The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	An Environment & Social Impact Plan (ESAP) is required for the project activity. It has been assessed that the environmental impacts associated with the installation and operation of the proposed wind turbines will be minimal, and the mitigation measures proposed are sufficient. As per CDM PDD and validation report the project is required to conduct an EIA as per law 13-09 (2010). The approval has been granted by the national committee of EIAs (CNEI) on 15/12/2011. However further environmental impacts have been analysed in accordance with the Gold Standard registration in accordance with the “Do-No-harm assessment” and the assessment w.r.t. the sustainable development matrix. Pls refer to Appendix 9 of this report for further details.	

D.11. Local stakeholder consultation

Means of validation	By means of provided evidence and by the assessment of host party regulations, the validation team has checked the compliance of the local stakeholder consultation process with applicable validation requirements related to the local stakeholder consultation in the VVS. The following sources of information have been used in this context: • /PDD/ • /VAL/ • /GS-PP/ • /GS/ • /LSC/ • /IM01/	
Findings	☐	The relevant local stakeholders were invited to consultation prior to the publication of the PDD.
	☒	The local stakeholder consultation process can be assessed as adequate and in accordance with host Country requirements.
	☒	The respective requirements have widely been complied with; however; the following issues needed to be addressed in this context: CAR 09 and CAR 10

Conclusion	☐	No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	☒	The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	The project is already registered under UNFCCC as a CDM project #9047. The initial CDM PDD was published from 10/02/2012 to 10/03/2012. A first stakeholder consultation has been taken place in October 2011 in the communes Melloussa, Ksar Sghir and Anjra as well as on 02/02/2012 with further interested parties including local authorities, experts, local associations, etc.. A third stakeholder consultation took place from 03 to 06 October 2015. The stakeholders have been invited vide official letter as well as a press release in a nationwide newspaper and flyers as well as notice. A summary of comments and how they have been considered is included in Sections E.2 and E.3 of the PDD. A list of participants as well as how their comments have been addressed has sufficiently been included in the PDD. On 20/12/2016 a related feedback round in line with Gold Standard requirements have been carried out. Additionally to this further a stakeholder feedback round has been conducted in line with Gold Standard requirements including live meetings to the three main communes (douar) as evidenced during supporting documents such as LSC report, participation of DOE team leader itself for meetings on 20/12/2016, minutes of meeting and pictures etc. The project documentation has been published from Dec 2016 to Feb 2017.	

SECTION E. Internal quality control

Before the submission of the final validation report a technical review of the whole validation procedure was carried out. The technical reviewers are competent GHG auditors where at least one is being appointed for the scope this project falls under. The technical reviewers are not considered to be part of the verification team and thus not involved in the decision making process up to the technical review.

As a result of the technical review process the validation opinion and the topic specific assessments as prepared by the validation team leader may have been confirmed or revised. Furthermore reporting improvements might have been achieved.

After the successful technical review, an overall (esp. procedural) assessment of the complete validation has been carried out by a senior assessor located in the accredited premises of TÜV NORD CERT GmbH.

After this step the submission for requesting for registration is conducted.

SECTION F. Validation opinion

Dubai Carbon Center of Excellence PJSC has commissioned the TÜV NORD JI/CDM Certification Program to validate the CDM project "Jbel Sendouq-Khalladi ("Khalladi") wind Farm Project in Morocco", with regard to the relevant requirements of the Gold Standard for CDM project activities, as well as criteria for consistent project operations, monitoring and reporting. Gold Standard criteria next to relevant and related UNFCCC criteria include article 12 of the Kyoto Protocol, the modalities and procedures for CDM (Marrakech Accords) and the relevant decisions by COP/MOP and CDM Executive Board.

In detail the conclusions can be summarized as follows:

- The project is in line with all relevant host country criteria (Morocco) and all relevant

UNFCCC requirements for CDM. Project activity approval has been obtained from DNA of Host Country vide the Letter of Approval (HCA) dated 10/08/2012

- The baseline has been appropriately identified as per the applied methodology.
- The framework for determination project additionality is sufficiently justified in the PDD in line with the applied methodology.
- All applicability conditions of the applied methodology have been fulfilled.
- the monitoring plan is transparent and adequate;
- The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of **1,007,720 tCO₂e** are most likely to be achieved within the (1st renewable) crediting period.
- Information on the environmental impact assessment and local stakeholders' consultation by the project participant is sufficiently provided.

Essen, 17/10/2017



Stefan Winter
TÜV NORD JI/CDM CP
Validation Team Leader

Appendix 1. Abbreviations

Abbreviations	Full texts
CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CO ₂	Carbon dioxide
CO _{2eq}	Carbon dioxide equivalent
CL	Clarification Request
DOE	Designated Operating Entity
DNA	Designated National Authority
DvalR	Draft Validation Report
EBRD	European Bank for Reconstruction and Development
EIA	Environmental Impact Assessment
ESAP	Environmental & Social Impact Assessment Plan
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse gas(es)
HSE	Health, Safety and Environment
IM	Interview Memo
IPCC	Intergovernmental Panel on Climate Change
LALRP	Land Acquisition and Livelihood Restoration Plan
MP	Monitoring Plan
MR	Monitoring Report
PA	Project Activity
PPA	Power Purchase Agreement
PDD	Project Design Document

PP	Project Participant
PRC	Post Registration Changes
PS	CDM Project Standard
QA/QC	Quality Assurance / Quality Control
SIA	Social Impact Assessment
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard
WOCAN	Women Organizing for Change in Agriculture and Natural Resource Management
WTG	Wind Turbine Generator

Appendix 2. Competence of team members and technical reviewers



Statement of Competence

Appointment and authorization according to the procedures of the TUV NORD JICDM Certification Program

Mr. Stefan Winter

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2020-07-27
VCS	Senior Assessor (Validation, Verification) Technical Reviewer	2020-07-27

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.1	Thermal energy generation
1.2	Renewables
2.1	Energy distribution
3.1	Energy demand
4.1	Cement and lime production
4.2	Paper
5.2	Caprolactam, nitric and adipic acid
9.1	Aluminium and magnesium production
9.2	Iron, steel and Ferro-alloy production
13.1	Solid waste and wastewater
13.2	Manure

163 - Rev. 5, Date: 2017-07-20

163_2011-VA060-F20_2017-07-20_rev5

001-VA060-F20 rev3 / 2012-10-25



Statement of Competence

Appointment and authorization according to the procedures of the TUV NORD JICDM Certification Program

Mr. Rainer Winter

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2019-07-01
J1	Senior Assessor Technical Reviewer	2019-07-01
VCS / ISO 14064-2	Senior Assessor Technical Reviewer	2019-07-01

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.1	Thermal Energy Generation
1.2	Renewables
4.1	Cement and lime production
4.2	Paper
5.1	Chemical Industry
5.2	Caprolactam, nitric and adipic acid
8.1	Mining/mineral production
9.1	Aluminium and magnesium production
9.2	Iron, steel and Ferro-alloy production
11.1	Emissions of fluorinated gases
11.2	Refrigerant gas production
12.1	Chemical industry
13.1	Solid waste and wastewater

003 - Rev. 10, Date: 2016-07-01

003_2011-VA060-F20_2016-07-01_rev10.doc

001-VA060-F20 rev3 / 2012-10-25

Statement of Competence

Appointment and authorization according to the procedures of the TUV NORD JICDM Certification Program

Mr. David Lubanga

SCHEME	STATUS	VALID UNTIL
CDM	Lead Assessor (Validation, Verification)	2018-10-20
VCS / ISO 14064-2	Lead Assessor	2018-10-20

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
3.1	Energy demand

251 - Rev. 4, Date: 2015-10-21

Appendix 3. Documents reviewed or referenced

No.	Author	Reference	Title	References to the document	Provider
1	UNFCCC	/ACM2/	ACM0002: Large-scale Consolidated methodology - <i>Grid-connected electricity generation from renewable sources</i> , version 12.0	https://cdm.unfccc.int/methodologies/DB/EY2CL7RTEHRC9V6YQHLLAR6MJ6VEU83	Other
2	DOE	/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)		Other
3	IPCC	/IPCC/	1. 1996 IPCC Guidelines for National Greenhouse Gas Inventories: work book 2. 2006 IPCC Guidelines for National Greenhouse Gas Inventories: work book	www.ipcc-nggip.iges.or.jp	Other
4	UNFCCC	/KPI/	Kyoto Protocol (1997)	http://unfccc.int/kyoto_protocol/items/2830.php	Other
5	UNFCCC	/MA/	Decision 3/CMP. 1 (Marrakesh – Accords)	http://cdm.unfccc.int/Reference/COPMOP/index.html	Other
6	ERM	/VAL/	CDM Validation report “Jbel Sendouq-Khalladi (“Khalladi”) wind farm project in Morocco” by ERM Certification and Verification Services, version 2.0, dated 27/12/2012	http://cdm.unfccc.int/filestorage/m/t/Q3P2HBRN410FS5YAIZUKD6MJ7GXOTW.pdf/Khalladi_FVR.pdf?t=ZW98b2p2bW5zfDCx0iRc22g7k3SsGQra_C72	
7	UNFCCC	/PDD-T/	Project Design Document Form (CDM-PDD-FORM) – Version 3.0	https://cdm.unfccc.int/Reference/PDDs_Forms/index.html	Other
8	UNFCCC	/PS/	CDM Project Standard (Version 9.0)	http://cdm.unfccc.int/Reference/Standards/index.html	Other
9	UNFCCC	/VVS/	CDM Validation and Verification	http://cdm.unfccc	Other

No.	Author	Reference	Title	References to the document	Provider
			Standard (Version 09.0)	c.int/Reference/Standards/index.html	
10	UNFCCC	/PCP/	CDM Project Cycle Procedure (Version 09.0)	https://cdm.unfccc.int/Reference/Procedures/index.html	Other
11	UNFCCC	/PS/	CDM Project Standard (Version 09.0)	http://cdm.unfccc.int/Reference/Standards/index.html	Other
12	UNFCCC	/TL/	Tool to calculate the emission factor for an electricity system Version 02.2.1 Tool for demonstration and assessment of additionality ver 6.0	http://cdm.unfccc.int/Reference/tools/index.html	Other
13	UNFCCC	/GT/	Glossary “CDM terms” (version 08.0)	https://cdm.unfccc.int/filestorage/e/x/t/extfile-20150226124447549-glos_CDM.pdf/glos_CDM.pdf?t=UmZ8bnFjODI3fDCW9A3vJwR03kQQh4sbLiYu	Other
14	The Gold Standard	/GS/	Gold Standard regulatory documentation: - GS toolkit v2.2 - Annex C: Specific Eligibility Criteria - Annex C: Specific Eligibility Criteria (ESPAÑOL) - Annex P: PFA Fast-Track - Annex W: Grievance Mechanism - Annex X: Conflict Zones & Refugee Camps - Double Counting Guidelines - Annex A: The Gold Standard Governance - Annex B: Project Cycle Overview - Annex E: Registry Operational Guidelines - Annex G: SD Checklist for Wind, Biomass + Hydro - Annex H: Do No Harm Guidance - Annex I: Guidance on SD Indicators - Annex J: LSC Best Practice - Annex AB: LSC Checklist for DOEs - Annex AC: SD Indicator Questions	http://www.goldstandard.org/resources/energy-requirements	

No.	Author	Reference	Title	References to the document	Provider
			- How to convert GS CERs to GS VERs - How to transition from CDM to GS VER project - Double Counting Guidelines - Annex D: ODA Declaration Form - Gold Standard prefeasibility check outcome - Filled Annex S		
15	PP	/PDD/	CDM Project Design Document "Jbel Sendouq-Khalladi ("Khalladi") wind farm project in Morocco" • version 3.4, dated 26/12/2012		PP
16	The Gold Standard	/GS-T/	Gold Standard passport template v2.2	http://www.goldstandard.org/resources/energy-requirements	
17	PP	/GS-PP/	Gold Standard passport: • Version 1.0, dated 19/07/2016 • Version 1.1, dated 10/04/2017 • Version 1.2, dated 08/06/2017 • Version 1.3, dated 18/07/2017 • Version 1.4, dated 19/07/2017		PP
18	PP	/GS-PFA/	GS PFA report GS Prefeasibility notes on call with GS and PP by DOE		PP
19	PP	/PDI/	Project Description and Discussion of Environmental Planning Assessments, Tangier, Morocco; July 2015		ACWA Power
20	PP	/BPP/	Biodiversity Protection Plan; July 2015		
21	PP	/SIA/	Social Impact Assessment; July 2015		
22	PP	/SEP/	Stakeholder Engagement Plan; July 2015		
23	PP	/LALRP/	Land Acquisition and Livelihood Restoration Plan; July 2015		
24	PP	/ESMMP/	Environmental and Social Management & Monitoring Plan; July 2015		
25	PP	/INTS/	Non-Technical Summary (English and Arabic version); July 2015		
26	PP	/ESAP/	Environmental and Social Action Plan; July 2015		
27	PP	/HSE/	1. Procedure "HEALTH, SAFETY, AND ENVIRONMENT MANAGEMENT PLAN" dated 13/01/2015 2. HSE Induction program presentation shown at site (to be provided)		ACWA Power UPC Ren.

No.	Author	Reference	Title	References to the document	Provider
			3. Attendance sheets of workers for the HSE induction program (to be provided) 4. Risk assessment analysis STAM 5. Safety and environmental Plan for civil works 6. Safety and environmental Plan for elec works 7. HSE Board and performance signs 8. Job safety and env. analysis 9. Safety statistic board		
28	PP	/REC/	1. PROCEDURE DE RECRUTEMENT dated 16/01/2016 2. Sample employment contract to proof local people are employed 3. Personnel Khalladi (list of employed local persons)		
29	PP	/SER/	Samples of "SAFETY & Environmental Observation Report", dated: - 21/02/2016 - 22/03/2016 - 27/04/2016 - Hazardous position		
30	PP	/GM/	1. Procedure to manage complaints 2. Excel list of managing complaints 3. Sample complaint forms „Formulaire de Plainte” No 02/2015 and No 03/2015		
31	PP	/PPA/	Power Purchase Agreement		
32	PP	/OM/	O&M Contract (for WTG and electricity)		ACWA Power UPC Ren.
33	PP	/LSC/	1. Local Stakeholder consultation report 2. Attendance sheets for LSC feedback round 3. Presentation of feedback round if not included in the LSC report 4. Scanned samples of filled feedback form		
34	PP	/CON/	Contracts on: a. WTG b. Civil work c. Electricity d. AGTT for transport and erection Extension letters for WTG (Vestas), Civil Work (STAM), Electricity (CEGELEC) and transport and erection (AGTT)		

No.	Author	Reference	Title	References to the document	Provider
			Notice to Proceed (NTP) by Cegelec dated 30/06/2016		
35	PP	/FIN/	Supporting document for financial closure of the project		
36	PP	/CSR/	CSR sheets on - money spent for which CSR measure (2016 and 2017) - number of employment over years by different company		
37	PP	/BIO/	Contract with ERM and SELF on env. and biodiversity advisory		
38	PP	/WASTE/	- Example voucher on clinic waste - Example voucher on oil waste - Pic and invoice of emptying septic tank		
39	Different accredited companies	/ISO/	ISO9001, ISO14001 and OHSAS certificates for EUROGRUES MAROC, CEGELEC, NOMAC and VESTAS		PP
ER spreadsheets					
1	PP	/XLS/	- ER Ex-Ante Calc - IRR calculation	http://cdm.unfccc.int/Projects/DB/ERM-CVS135608845/9.66/view	PP
Regulatory & Approvals					
1	Morocco DNA	/LoA/	Host Country Letter of Approval	http://cdm.unfccc.int/Projects/DB/ERM-CVS135608845/9.66/view	PP
2	Ministry of Environment	/EL/	Environmental Licence, dated 20/10/2015	Ministry of Environment	PP
3	Ministry of Employment and Social Affairs	/CTM/	CODE DE TRAVAIL Maroc: Dahir n° 1-03-194 du 14 Rajab 1424 (11 septembre 2003) portant loi n° 65-99 relative au code de travail	http://www.ilo.org/dyn/travail/docs/450/Maroc%20-%20Code%20travail.pdf	PP
4		/BL/	Business licence of ACWA Power Khalladi		PP
5	Constituteproject.org	/MC/	Morocco's Constitution of 2011	https://www.constituteproject.org/constitution/Morocco_2011.pdf?lang=en	Other
6	US Dept. of Labour	/US/	Morocco – Labour Rights Report, July 2004	https://www.dol.gov/ilab/reports/pdf/mlrr.pdf	Other

No.	Author	Reference	Title	References to the document	Provider
7	World Bank	/AC/	MOROCCO: PRESSING FOR PROGRESS ON ANTICORRUPTION BY EDOUARD AL-DAHDAH & FLORENCE BRILLAUD	http://siteresources.worldbank.org/INTMNAREGTOPGOVERNANCE/Resources/dahdahandbrillaud.pdf	
Websites					
1	Morocco DNA	/dna-HP/			Other
2	ACWA Power	/acwa/	http://www.acwapower.com/en		Other
3	UPC Renewables SARL	/upc/	https://www.upcrenewables.com/		Other
5	UNFCCC	/unfccc/	http://cdm.unfccc.int	UNFCCC	Other
6	IPCC	/ipcc/	www.ipcc-nggip.iges.or.jp	IPCC publications	Other
7	Google	/goog/	https://earth.google.com/	Google Earth	Other
8	UN Human rights Office of the High Commissioner	/ohchr/	http://tbinternet.ohchr.org/_layouts/TreatyBodyExternal/Treaty.aspx?CountryID=117&Lang=en View the ratification status by country or by treaty	UN Human Rights	Other
9	United Nations on Drugs and Crime	/unodc/	https://www.unodc.org/unodc/en/treaties/CAC/signatories.html Signature and Ratification Status as of 12 December 2016	United Nations on Drugs and Crime	Other
10	WOCAN	/wocan/	http://www.wocan.org/		Other

Appendix 4. Clarification requests, corrective action requests and forward action requests

Table 3. CL from this validation

CL ID	01	Section no.	F.2	Date: 21/12/2016
Description of CL				
Clarification is requested w.r.t. the number of employees mentioned in the passport (150). As per onsite inspection and document provided (CSR sheet employment over years) the number does not add up.				
Project participant response				Date: 07/02/2017
The number of employees has been revised by the project proponent to be 60 during the 14 months construction period as agreed with the 8 douars affected by the project. This has been updated in section F.2 of the Passport in accordance with the Recruitment Management Procedure.				
Documentation provided by project participant				
1. Recruitment Management Procedure 2. Passport ver 1.1				
DOE assessment				Date: 16/05/2017
The passport has been updated according to the information and data found during onsite inspection. Further the provided Procedure substantiates on page 6 that 60 workers will be employed during the 14 months construction period from 8 different douars located close to the project site.				
Conclusion <i>Tick the appropriate checkbox</i>		☐ Additional action should be taken (finding remains open) ☒ The finding is closed		

CL ID	02	Section no.	B	Date: 21/12/2016
Description of CL				
The passport refers in Section B that the project has been developed by UPC Renewables SARL and further that UPC has been acquired by ACWA Power and renaming UPC to ACWA Power Khalladi. Clarification and specification is requested who would be the project participant receiving the certified emission reductions. Besides further specify whether UPC has been renamed to ACWA Power Khalladi or a new company has been established named ACWA Power Khalladi. Related business licence of ACWA Power Khalladi is to be provided.				
Project participant response				Date: 07/02/2017
The project participant receiving the emission reductions would be ACWA Power Khalladi S.A. This is because UPC Renewables S.A has been renamed to ACWA Power Khalladi S.A as per the trade licence.				
Documentation provided by project participant				
1. Trade License_APK 2. Passport ver 1.1				
DOE assessment				Date: 16/05/2017
As per provided Trade Licence ^{BL/} it is confirmed that UPC Renewables is renamed to ACWA Power Khalladi on 27/09/2016. Therefore the local company installing and operating the project activity would be ACWA Power Khalladi S.A and the PP receiving the ERs. Therefore the passport has been updated correctly and consistent with information provided and received by interviews with project representatives during the onsite inspection. However please forward related updated MoC and LoA submitted to UNFCCC due to the change in PP.				
Project participant response				Date: 17/10/2017

The issue with the PP has been resolved: Annex S (as advised by GS) has been filled by ACWA Khalladi and uploaded to the registry. This solves the issue. Kindly proceed with the validation and registration.	
Documentation provided by project participant	
1. Filled GS Annex S form	
DOE assessment	Date: 17/10/2017
Ok. Related Annex S has been checked and found consistent. Based on response by GS and Annex S this issue is closed.	
Conclusion <i>Tick the appropriate checkbox</i>	☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Table 2. CAR from this validation

CAR ID	01	Section no.	B, C.5	Date: 21/12/2016
Description of CAR				
Start date has to be clarified based on information provided on signature of contracts for WTG, civil work, elec. Works and transport and erection in consideration of the financial closure of the project. Besides section B states that on 01/07/2016 the WTG and Electrical contracts have been signed which is inconsistent with information received during site visit. Further related evidence is to be provided.				
Project participant response				Date: 07/02/2017
The start date of the project activity is 01/07/2016, the implementation date of WTG contract & Electrical contract, as it is the earliest date on which the implementation of the project activity has begun. There are four subcontractors with whom contracts have been signed for civil works, electrical works, transportation & installation, and wind turbine supply. For each contract, the date of signature • Civil Works – STAM – 23.10.2015 • Wind Turbine Purchase Agreement – VESTAS – 04.09.2015 • Electrical Works – CEGELEC – 22.10.2015 • Transportation & Installation – AGTT – 03.11.2015 is earlier from the effectiveness date of the contract which falls after the 01/07/2016. This is because, under the clause 19 of each contract, the Owner shall fulfill the following conditions prior to the start of the work: • Financial close • Provisory acceptance under the law 1309 • Signature of PPA • Advance payment The project was originally started by UPC Renewables in 2012, after which UPC Renewables was acquired by ACWA Power on the 4th of November 2015 renaming it to ACWA Power Khalladi S.A. The project work was started shortly as outlined above in chronological dates. This information has been clarified in both sections B & C.5 of the Passport.				
Documentation provided by project participant				
1. Civil Works contract_STAM 2. TSA contract_Vestas 3. Electrical Works contract_Cegelec 4. Transport & Installation Works contract_AGTT 5. Khalladi - Extension letter - STAM 6. Khalladi - Extension letter - VESTAS 7. Khalladi - Extension letter - Cegelec 8. Khalladi - Extension letter – AGTT 9. Khalladi - HOLCIM Financial Close Certificate - Lenders - Executed version 10. Khalladi - CIMAT Financial Close Certificate - Lenders - Executed version 11. Khalladi - ASMENT Financial Close Certificate - Lenders - Executed version 12. PPA_ONEE_Agreement 13. PPA_Holcim_Agreement & Amendment Agreement 14. PPA_Cimat_Agreement & Amendment Agreement 15. PPA_Asment_Agreement & Amendment Agreement 16. Trade License: APK 17. Passport ver 1.1				

DOE assessment		Date: 16/05/2017
As checked during site visit contracts received may have been signed prior to the given start date of 01/07/2016. However all signed contracts include a clause which states that the contract will only be effective if the four conditions stated by PP in the response are fulfilled. Therefore DOE considered the financial closure by PP as the relevant condition and date as this would then be the earliest date of action. Any payment (even advance) would only be thereafter, signing PPA even earlier would not mean that the project would be actually executed similar to acceptance under the host country law 13-09. Further the signed contracts have been made under previous project owner UPC Renewables. Due to the reason that ACWA Power Khalladi took over UPC Renewables all contracts had to be renamed too. Related letters for all four main contracts have been provided and checked, e.g. the WTG letter with VESTAS is dated 06/06/2016. However specification and clarification is requested why 01/07/2016 is considered as start date as the financial closure documents provided are all dated 21/06/2016.		
Project participant response		Date: 08/06/2017
The difference between the financial closing date and commencement date of the works corresponds to the period of time necessary for each Contractor to fulfill the Conditions Precedent for the issuance of the Note to Proceed (NTP). To issue the NTP for the start of the works, each contractor is entitled to submit mainly: • Invoice of advance payment • Bond of the advance payment and warranties Therefore, 01/07/2016 is deemed the start date. An example of each document mentioned above is provided, as well as, the NTP for the sub-contractor dated 31/06/2016 ordering services and reaffirming contract details.		
Documentation provided by project participant		
1. Advance payment invoice_Cegelec 2. Bond_Cegelec 3. NTP_Cegelec		
DOE assessment		Date: 12/06/2017
As per provided specification and checked documents applying start date of 01/07/2016 is considered reasonable, plausible and correct. E.g. the NTP by Cegelec is dated 30/06/2016 as the NTP reconfirms the contract signed by the PP by the contracting party.		
Conclusion <i>Tick the appropriate checkbox</i>	☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

CAR ID	02	Section no.	D.2	Date: 21/12/2016
Description of CAR				
Map with settlements in vicinity is missing in D.2.				
Project participant response				Date: 07/02/2017
An updated map with settlement in vicinity has been included in Sec D.2. of the Passport, the same as used in the PDD.				
Documentation provided by project participant				
1. Registered PDD 2. Passport ver 1.1				
DOE assessment				Date: 16/05/2017
Ok. The passport has been updated accordingly.				
Conclusion <i>Tick the appropriate checkbox</i>	☐ Additional action should be taken (finding remains open) ☒ The finding is closed			

CAR ID	03	Section no.	F.2	Date: 21/12/2016
Description of CAR				
Sustainable Development Matrix, MDG-7: Clarification is requested w.r.t. the relation of elec generation and access to affordable and clean energy services for the poor people as the project elec generation is not sold to the grid but is wheeled to three contractors.				
Project participant response				Date: 07/02/2017

In the project scenario, the project uses wind resources for electricity generation which is delivered to the national grid. It is clean energy, which replaces the fossil fuel fired grid electricity generation. However, this electricity is provided through the grid to mainly 3 specific private industrial consumers, namely Holcim, Cimat, and Asment de Tamara. Hence, the local community does not benefit neither is it adversely impacted from the clean energy. This has been updated in Sec F.2 of the Passport.	
Documentation provided by project participant	
1. ONEE PPA 2. Holcim PPA 3. Cimat PPA 4. Asment de Tamara PPA 5. Khalladi Wind: Case Study 6. Passport ver 1.1	
DOE assessment	Date: 16/05/2017
The passport has been revised accordingly to specify that the renewable electricity from wind is provided to three customers, manufacturers or producers, via wheeling which ensures affordable and clean energy for them for the contracted period.	
Conclusion <i>Tick the appropriate checkbox</i>	☐ Additional action should be taken (finding remains open) ☒ The finding is closed

CAR ID	04	Section no.	F.2, G	Date: 21/12/2016
Description of CAR				
As per site interview it has been reported that the subcontractors are required to show ISO14001 and OHSAS 18001 as well as ISO 9001 in order to be considered as subcontractor. Further ACWA Power Khalladi plans to be certified during the first year of operation according to ISO14001 and OHSAS 18001. This is inconsistent with the description in the passport. Revision requested.				
Project participant response				Date: 07/02/2017
Description has been revised accordingly in Sec F.2				
Documentation provided by project participant				
1. AGTT & Eurogruas Certificates – ISO 9001, FONASBA 2. CEGELEC Certificates – ISO9001, OHSAS18001 3. NOMAC Certificates – ISO14001, ISO9001, OHSAS18001 4. VESTAS Certificates - ISO14001, ISO9001, OHSAS18001 5. Passport ver 1.1				
DOE assessment				Date: 16/05/2017
The related certificates of the four contracted companies relevant for the project activity have been provided. Further the description in the passport in section F.2 and G have been revised. However the passport now states that the 4 EPC sub-contracts are required to be certified under ISO14001 and OHSAS18001 whereas for only two of the four companies ISO14001 certificates have been provided. Further all 4 sub-contractors are ISO9001 certified which is not mentioned. Pls clarify.				
Project participant response				Date: 08/06/2017
ISO14001 certificates for all 4 sub-contractors are provided. Section F.2 in the passport has been revised to include mentioning of ISO9001 certification.				
Documentation provided by project participant				
1. AGTT & Eurogruas Certificates – ISO14001, ISO 9001, OHSAS18001, FONASBA 2. CEGELEC Certificates – ISO14001, ISO9001, OHSAS18001 3. NOMAC Certificates – ISO14001, ISO9001, OHSAS18001 4. VESTAS Certificates - ISO14001, ISO9001, OHSAS18001 5. Passport ver 1.2				
DOE assessment				Date: 12/06/2017
Related certificates for ISO 9001, ISO 14001 and OHSAS18001 for all 4 sub-contractors have been provided now. Passport has been revised accordingly.				
Conclusion <i>Tick the appropriate checkbox</i>	☐ Additional action should be taken (finding remains open) ☒ The finding is closed			

CAR ID	05	Section no.	F.2, G	Date: 21/12/2016
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Description of CAR	
Even if an indicator is scored "0" there might be the necessity for a monitoring parameter as there has been a negative impact which has been mitigated by a measure. Therefore these measures should be monitored e.g. soil condition or biodiversity.	
Project participant response	Date: 07/02/2017
Relevant indicators have been revised to include both parameters to be monitored to assess mitigation measures, and explanation for why the indicator has been selected in comparison to baseline scenario. Justifications have been provided with references, and monitoring plan updated for the relevant parameters.	
Documentation provided by project participant	
Passport ver. 1.1	
DOE assessment	Date: 16/05/2017
The passport has been updated accordingly and now also indicators which are scored "0" have a related monitoring parameter in case the impact by the project activity is negative and countermeasures are taken to balance the impact by the project activity.	
Conclusion <i>Tick the appropriate checkbox</i>	☐ Additional action should be taken (finding remains open) ☒ The finding is closed

CAR ID	06	Section no.	F.2,	Date: 21/12/2016
Description of CAR				
Justification of choices on SDM Water quality: Specification is requested w.r.t. fresh water and septic tank to substantiate that no wastewater is generated by the project.				
Project participant response				Date: 07/02/2017
Waste water is generated throughout the construction phase of the project, however, this is transported and treated offsite by licensed contractors. This has been clarified in the passport for the relevant indicator in Sec F.2. Also the water treatment is included in the monitoring plan.				
Documentation provided by project participant				
1. Photographic evidence of emptying septic tank 2. Example voucher of emptying septic tank 3. Integrated Waste Management Plan				
DOE assessment				Date: 16/05/2017
As per the provided integrated waste management plan the waste water is collected in a tank, transported offsite and treated accordingly. This is evidenced by a picture of the septic tank and a related voucher by the company collecting the waste water for treatment "service industriel & environnement du Maroc". Therefore this finding is closed.				
Conclusion <i>Tick the appropriate checkbox</i>	☐ Additional action should be taken (finding remains open) ☒ The finding is closed			

CAR ID	07	Section no.	F.2, G	Date: 21/12/2016
Description of CAR				
The PP conducts CSR activities next to the project implementation however several of the issues have not been mentioned in the passport. Please clarify why those have not been included and considered in the GS activity.				
Project participant response				Date: 07/02/2017
All CSR activities and Livelihood Restoration Plan activities are now included in the Passport's Sections F.2 & G to accurately record and monitor activity success.				
Documentation provided by project participant				
1. CSR Strategy 2. Land Acquisition & Livelihood Restoration Plan 3. Passport ver 1.1				
DOE assessment				Date: 16/05/2017
Validation team has checked the updated passport and can confirm that all CSR activities by the PP are now described as per CSR Strategy by ACWA Power Khalladi. This includes activities in the area of agriculture, health, infrastructure and other actions "culture". For each activity a related budget is fixed. During onsite inspection DOE by interview with local representatives and neighbours could confirm that some of the activities have already been started and in progress.				

Conclusion <i>Tick the appropriate checkbox</i>	☐ Additional action should be taken (finding remains open)
	☒ The finding is closed

CAR ID	08	Section no.	F.2, G	Date:	21/12/2016
Description of CAR					
As per onsite interview it has been identified that there are two companies contracted (ERM and SELF) w.r.t. advisory for biodiversity issues. However clarify why this is not further specified in the monitoring parameter for biodiversity.					
Project participant response					Date:
The company contracted for advisory of biodiversity issues is now included in the monitoring plan of Biodiversity, and included in the explanation of neutralizing negative scoring of the indicator through mitigation measures.					
Documentation provided by project participant					
1. Contract with Self-ERM 2. Biodiversity Protection Plan					
DOE assessment					Date:
The passport has been revised and ACWA Power Khalladi has established a biodiversity protection plan which is developed and implemented as well as conducted by two sub-contractors "Self" and "ERM".					
Conclusion <i>Tick the appropriate checkbox</i>	☐ Additional action should be taken (finding remains open)				
	☒ The finding is closed				

CAR ID	09	Section no.	E.1, E.2, H, H.1, H.2	Date:	21/12/2016
Description of CAR					
Passport ver. 1.0 section H including H.1 and H.2 have not been filled. Revision requested. Further the feedback round info and description is missing in section E.2 of GS Passport. CDM-PDD states Feb 2012 workshop but Passport refers to October 2011, please clarify.					
Project participant response					Date:
Sections E.2, H.1 and H.2 have been completed according to guidelines in the toolkit. Three stakeholder consultations have taken place as updated in Section E.1 of the Passport – Oct'11, Feb'12, and Jul'15. Stakeholder Feedback Round was held in Dec'16 as updated in Section E.2.					
Documentation provided by project participant					
1. Registered PDD 2. Stakeholder Engagement Plan 3. LSC Reports for Stakeholder Feedback Round with attendance & evaluation sheets					
DOE assessment					Date:
Section H.1 and H.2 has been filled with a description that the topics are already considered, assessed and validated during the registration of the project as a CDM project activity at the UNFCCC. DOE checked the CDM PDD as well as validation report and can confirm that the stated is correct. Further as per CDM validation report stakeholder consultation workshop has taken place on 02/02/2012. Besides DOE can confirm the feedback round has taken place in December 2016 as DOE has been onsite and participated in the stakeholder meetings. The provided stakeholder consultation plan refers to further consultations in 2011 and 2015 however related documents to substantiate the same is still missing.					
Project participant response					Date:
Related documents are provided.					
Documentation provided by project participant					
1. Public Consultation 2011 – Images 2. Public Consultation 2015 – Images, audio & video recordings, consultation reports					
DOE assessment					Date:
Further supporting documents (Picture from notice, taken during meeting, report of meeting dated 6 Oct 2015, Picture from newspaper as well as file on radio announcement) have been provided which substantiate that additional stakeholder consultation rounds have been conducted on 02/02/2012 as well as from 03 to 05/10/2015. Based on this DOE considers that sufficient evidence provided to substantiate the stakeholder meetings conducted at the stated dates. Besides please indicate in section E.2 of the passport the exact date when the documents have been published publically in order to determine whether the 60 days period has been covered and please indicate where it was published e.g. via GS webpage.					

Project participant response		Date: 19/07/2017
Passport revised.		
Documentation provided by project participant		
Passport ver 1.4		
DOE assessment		Date: 20/07/2017
The exact dates have now been provided. The documents have been published from 20/12/2016 until 28/02/2017 for 61 days in total.		
Conclusion <i>Tick the appropriate checkbox</i>	☐ Additional action should be taken (finding remains open) ☒ The finding is closed	

CAR ID	10	Section no.		Date: 21/12/2017
Description of CAR				
Following documents are to be provided: 1. Business licence of ACWA Power Khalladi 2. PPA (three companies) 3. O&M contract (WTG and elec) 4. LSC report 5. Attendance sheets for LSC feedback round 6. Presentation of feedback round if not included in the Lsc report 7. Contracts: a. WTG b. Civil work c. Electricity d. AGTT for transport and erection 8. Supporting document for financial closure of the project 9. CSR sheets on a. money spent for what (2016 and 2017) b. number of employment over years by different company 10. Scanned samples of filled feedback form 11. HSE Induction program presentation shown at site 12. Attendance sheets of workers for the HSE induction program 13. Procedure to manage complaints 14. Contract with ERM and SELF on env. and biodiversity advisory 15. Example voucher on clinic waste 16. Example voucher on oil waste 17. Pic and invoice of emptying septic tank 18. Sample employment contract to proof local people are employed 19. Personnel Khalladi (list of employed local persons)				
Project participant response				Date: 07/02/2017
All documents have been provided in folder –CAR ID 10-				
Documentation provided by project participant				

1. Trade license of ACWA Power Khalladi 2. PPA (three companies) 3. O&M contract (WTG and elec) 4. LSC report including a. Attendance sheets for LSC feedback round b. Presentation of feedback round c. Scanned samples of filled feedback form 5. Contracts: a. WTG b. Civil work c. Electricity d. AGTT for transport and erection e. ERM and SELF on env. and biodiversity advisory f. Sample employment contract to proof local people are employed 6. Supporting document for financial closure of the project 7. CSR sheets on a. money spent for what (2016 and 2017) – CSR Strategy b. number of employment over years by different company – Recruitment Management Procedure, recruitment stat excel 8. HSE Induction program presentation shown at site 9. Attendance sheets of workers for the HSE induction program 10. Procedure to manage complaints 11. Example voucher on clinic waste 12. Example voucher on oil waste 13. Pic and invoice of emptying septic tank 14. Personnel Khalladi (list of employed local persons)	
DOE assessment	Date: 16/05/2017
Ok. All related and stated documents have been provided. The LSC stated documents a. – c. are included in the LSC report. The content is correct as validation team has been onsite and participated in the live LSC feedback meeting. Further the documents have been published for 61 days from 20/12/2016 until 28/02/2017.	
Conclusion Tick the appropriate checkbox	☐ Additional action should be taken (finding remains open) ☒ The finding is closed

Table 3. FAR from this validation

FAR ID	N/A	Section No.	N/A	Date: DD/MM/YYYY
Description of FAR				
Project participant response				Date: DD/MM/YYYY
Documentation provided by project participant				
☐	Changes in the PDD	Section(s):	New version No.:	
☐	Changes in XLS	Worksheet(s):	New version No.:	
☐	Other:			
DOE assessment				Date: DD/MM/YYYY
Conclusion Tick the appropriate checkbox	☐ To be checked during the next periodic verification			

Appendix 5. Assessment of Baseline Identification

Table A-5: Assessment of Baseline Identification (VVS §§ 88 – 95)

☒	Baseline is pre-defined by the methodology besides already assessed in the related CDM validation report for the registered CDM project #9047
☐	Assessment of baseline alternatives see below

Baseline Alternatives identified	In line with the Methodology?	Eliminated	Reasons for elimination / non-elimination from list of alternatives	Evidence used	DOE Assessment	
					Appropriateness of elimination	Assessment of validation team (results and means of assessment)
	☐	☐			☐	
	☐	☐			☐	
	☐	☐			☐	
	☐	☐			☐	
	☐	☐			☐	
	☐	☐			☐	

Appendix 6. Monitored Parameters

Table A-6: Validation Checklist – Monitored Parameters

Checklist Item (incl. guidance for the verification team)	Reference	Validation Team Comments (Means and results of assessment)				Draft Concl.	Final Concl.
1. EG _{Facility,y}	Parameter: Quantity of net electricity generation supplied by the Project activity to the grid						
<i>Indicate whether the provided information for the monitoring parameter complies with the approved methodology including applicable tool(s) in the aspects listed.</i> <i>For checking the use of international standards in the nomenclature, consider:</i> <i>Standard format (e.g. 1,000 representing one thousand and 1.0 representing one).</i> <i>Values shall be directly given in SI units – or additionally to original units transferred to SI.</i> <i>Short scale naming system: (Only) million = 10⁶ and billion 10⁹ shall be used.</i>	/VAL/ /PDD/	Requirement	OK	Not OK	N/A	OK	OK
		Label	☒	☐	☐		
		Data Unit	☒	☐	☐		
		Description	☒	☐	☐		
		Source of data	☒	☐	☐		
		Measurement equipment / measure method	☒	☐	☐		
		Monitoring frequency	☒	☐	☐		
		QA/QC procedures	☒	☐	☐		
		Purpose of data	☒	☐	☐		
		Standard format	☒	☐	☐		
		SI units	☐	☐	☒		
		Short scale naming	☐	☐	☒		
		In the context of this parameter the following finding was raised: N/A					

Appendix 7. Assessment of Applicability Criteria of Methodology

Table A-7: Assessment of Applicability Criteria

Applicability Criteria	Evidence used	Met	N/A	Assessment of validation team
Project registered as CDM project #9047	/PDD/ /VAL/ /unfccc/	☒	☐	All applicability criteria have been already assessed during the CDM registration process. The project is already registered as a CDM project under UNFCCC vide #9047. Therefore no further assessment required. During onsite investigation not information or observation has been observed which would result in a re-assessment of the applicability criteria.

Appendix 8. Assessment of Financial Parameters

Table A-8: Assessment of Financial Parameters

☒	Not applicable as the project is already registered under UNFCCC as a CDM project activity ^{/unfccc/}
☐	Assessment of all financial parameters see below

Parameter	Value applied	Unit	Source of Information	Reference	DOE ASSESSMENT		
					Correctness of applied value	Appropriateness of source	Comment
					☐	☐	
					☐	☐	
					☐	☐	

Appendix 9. Assessment of Gold Standard criteria

Do-no-harm Assessment		Assessment	Conclusion
Human Rights			
1. The project respects internationally proclaimed human rights including dignity, cultural property and uniqueness of indigenous people. The project is not complicit in Human Rights abuses	Via interview with the stakeholders during feedback round and representative of the villages as well as regional governor. Further by checking land acquisition and livelihood restoration plan as well as procedure for recruitment as well as CODE DE TRAVAIL w.r.t. employment. Besides checking Universal human rights index by UN via http://uhri.ohchr.org/search/results. Further Communal land is regulated by Dahir of 27 April 1919. Communal land belongs to tribes, tribal fractions, douars (communities) or other groups that have the right to use it collectively. According to the Dahir of 27 April 1919, the following are the key characteristics of communal land: • It cannot be sold; • It cannot be acquired by acquisitive prescription, that is a method of acquiring property by meeting statutory requirements of continuous possession; • It cannot be used as collateral for mortgages. Therefore two agreements are signed with local village majors. One for CSR cooperation and one for land lease. A fixed budget is to be paid for the land lease which increases every 3 years. Besides the land lease which follows local regulations the PP supports the communities with several CSR activities such as Infrastructural (school transport, repair of mosque, road construction, water source development), cultural (festival sponsoring), agriculture (studies to improve agricultural methods for farming) and health (mobile dentist). The budget for the CSR is 2.4 Mio MAD for 2016 and 2.2 Mio MAD for 2017 as shown on presentation during interview with PP. The same has been confirmed by villagers and majors during feedback round.	Future risk of non-compliance: ☒ Low ☐ Medium ☐ High ☐ not applicable, as not relevant	OK
2. The project does not involve and is	As per checking project layout, maps, onsite inspection as well as	Future risk of non-compliance:	OK

not complicit in involuntary resettlement	interview and feedback by neighbours during the live stakeholder feedback meeting no resettlements have been necessary for the project activity. Also the area is not restricted for the farmers to bring their livestock to grazing areas as done previously. They might be guided or made aware when passing the project area.	☒ Low ☐ Medium ☐ High ☐ Not applicable, as not relevant	
3. The project does not involve and is not complicit in the alteration, damage or removal of any critical cultural heritage	Via checking the maps, by onsite inspection as well as interview with neighbours and village officials during feedback round, it is confirmed that there are no such sites within the project area. Hence the risk on non-compliance is low.	Future risk of non-compliance: ☒ Low ☐ Medium ☐ High ☐ Not applicable, as not relevant	OK
Labour Standards			
4. The project respects the employees' freedom of association and their right to collective bargaining and is not complicit in restrictions of these freedoms and rights	Via the on-site interview with local people, it is confirmed that there is not any restriction regarding workers' rights caused by the project activity. Local people are free to establish and join any labour organisations as they wish. Morocco constitution has been checked which provides the right to strike and the right of free establishment of associations. Further as per /MC/ Article 8 there is the right to join trade unions. It further states that the constitution of trade unions and their actions are free. This is further substantiated by a report of US Dept of Labour chapter V. A. 1 ^{/US/} . Finally the PP has prepared an ESAP which is established and implemented to protect worker rights, fair treatment of neighbours and equal opportunities of workers. Hence the risk on non-compliance is low in the future.	Future risk of non-compliance: ☒ Low ☐ Medium ☐ High ☐ Not applicable, as not relevant	OK
5. The project does not involve and is not complicit in any form of forced or compulsory labour.	As per /US/ chapter V. C. "The new Labor Code prohibits employers from coercively or forcibly subjugating workers to perform work, and those who violate this provision may be sanctioned with a fine of 25,000 to 30,000 dirhams (US\$2,706 to US\$3,247). Although the Government lacks the resources to inspect all workplaces to ensure that compulsory labor is not being used, forced labor is not viewed as an issue in the commercial and agricultural sectors. Morocco ratified ILO Convention No. 29 on Forced Labor in May 1957 and Convention No. 105 on the Abolition of Forced labor in December 1966." Based on that the risk on non-compliance is low in the future.	Future risk of non-compliance: ☒ Low ☐ Medium ☐ High ☐ Not applicable, as not relevant	OK
6. The project does not employ and is not complicit in any form of child	As per /US/ chapter V. C. "A law was enacted in 1993 for the protection of abandoned children in Morocco. According to this	Future risk of non-compliance: ☒ Low	OK

labour.	law, persons younger than 18 and unable to support themselves economically are identified as abandoned if their parents are unknown, unable to be located, or incompetent of assuming a parental role. [...] the new Labor Code (Art. 4 and 143) does empower inspectors to bring charges for employing children under age 15." Further und D. "The new Labor Code raises the minimum age for employment from 12 to 15 years. The minimum age restriction applies to the industrial, commercial, and agricultural sectors and also extends to children working in apprenticeships and family enterprises. Under the Labor Code, children under the age of 16 are prohibited from working more than 10 hours per day, which includes at least a one-hour break. Children under the age of 18 are not permitted to work in hazardous occupations that include work involving the operation of heavy machinery and exposure to toxic materials or emissions. [...]Further, the Labor Code provides for legal sanctions against employers who recruit children under the age of 15 to work. Violations of child labor laws are enforceable by criminal penalty, civil fine, and withdrawal or suspension of one or more civil, national, or family rights, including denial of residence for a period of five to 10 years." Further as per onsite inspection as well as interview with HR person as well as neighbours no one under 18 are employed. Also PP's procedure for recruitment does not allow the same. Based on that the risk on non-compliance is low in the future.	☐ Medium ☐ High ☐ Not applicable, as not relevant	
7. The project does not involve and is not complicit in any form of discrimination, based on gender, race, religion, sexual orientation or any other basis.	PP has prepared and established an ESAP which covers the issues stated. Further the constitution and related laws in Morocco protect people against discrimination, based on gender, race, religion, sexual orientation etc. Please see several sections in /US/. Hence the risk on non-compliance is low in the future.	Future risk of non-compliance: ☒ Low ☐ Medium ☐ High ☐ Not applicable, as not relevant	OK
8. The project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments.	As per onsite inspection the PP is very aware about occupational health and safety of their workers. The PP has established an ESAP as well as procedures^{/HSE/} to ensure safe work environment. As per onsite inspection all visitors had to participate in a EHS introduction before entering the site. If there are even close misses or an employee identifies a risk a safety and env. observation report is filled and frequently introduced to workers during meetings^{/SER/}. Further see above section on child labour and employment.	Future risk of non-compliance: ☒ Low ☐ Medium ☐ High ☐ Not applicable, as not relevant	OK

		Hence the risk on non-compliance is low in the future.			
Environmental Protection					
9. The Project takes a precautionary approach in regard to environmental challenges and is not complicit in practices contrary to the precautionary principle. This principle can be defined as: "When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically."	The PP has prepared and established a ESAP which includes the following ^{/ESAP/} :		Future risk of non-compliance: ☒ Low ☐ Medium ☐ High ☐ Not applicable, as not relevant	CAR 08 CAR 09 CAR 10	
	Resource Efficiency and Pollution Prevention and Control	1			Determine the appropriate pollution prevention and control methods, technologies and practices to be applied to the project, for resource use and waste management.
		2			Develop a Waste management plan (solid and liquid wastes, spoils)
		3			Implement the recommendations of the Biodiversity Protection Plan which relate to revegetation, top-soil management and erosion control for temporary sites, and new access roads.
		4			Implementation of mitigation measures required by the Flicker effect report
		5			Fire prevention and emergency management plan to be prepared by the contractor for the construction period and updated by the contractor for the operator for the operation period
		6			Closure and dismantlement plan to be prepared by the operator.
	Health and Safety	1			OHS plan to be developed by contractor and operator
		2			Fire prevention, natural hazards and emergency management plan
		3			Develop and implement traffic management plan
		4			Monitor noise at sensitive receptors as requested and take necessary corrective actions.
		5			Investigate complaints of shadow flicker and develop mitigation measures

	Biodiversity and Living Natural Resources	1	Implement the Biodiversity Protection Plan prior to any land clearing activities/construction on the site. Appoint qualified ornithologist and ecologist/botanists. Appoint qualified chiropterology, specialist for `bat survey		
		2	Conduct a cumulative Impact Study of the Windfarm to assess the impacts on Avifauna from the combined operations of the windfarms in the Tangier region.		
		3	Development a Biodiversity Offset Implementation and Monitoring Programme		
		The implementation of the plan can be confirmed by onsite inspection and interview with employees as well as e.g. by contracted third party ERM and SELF for advisory on environmental and biodiversity issues. Pictures of training of employees by representatives of these companies have been shown during site inspection. Also the PP has designed a biodiversity protection plan ^{/BPP/} . Hence the risk on non-compliance is low in the future.			
10. The project does not Involve and is not complicit in significant conversion or degradation of critical natural habitats, including those that are (a) legally protected, (b) officially proposed for protection, (c) identified by authoritative sources for their high conservation value or (d) recognised as protected by traditional local communities	As per interview with authorities and local people it is confirmed that the project activity is neither located in critical habitat, legally protected or officially proposed land nor identified for their high conservation value as well as recognised as protected by traditional local communities. Further the host country has established a national charter and constitution which safeguard these topics. Hence the risk on non-compliance is low in the future.		Future risk of non-compliance: ☒ Low ☐ Medium ☐ High ☐ Not applicable, as not relevant	OK	
Anti-Corruption					
11. The project does not involve and is not complicit in corruption	/AC/ states that “Over the last two to three years, the government has taken a number of important measures to step up its engagement to fight corruption. The ratification of the United Nations Convention against Corruption (UNCAC) on May 9, 2007 is a testimony to the government’s responsiveness to the global		Future risk of non-compliance: ☒ Low ☐ Medium ☐ High	OK	

	wave of advocacy and awareness-raising in this realm. The treaty is both a declaration of intent and a commitment to making progress on a wide array of issues." Further as per /unodc/ Morocco has ratified the convention against corruption on 09/05/2007. As per onsite interview with neighbours during feedback round no one stated that the PP requested bribe or similar. Hence the risk on non-compliance is low in the future.	☐ Not applicable, as not relevant	
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Sustainable Development Matrix			
No	Indicator	Score in GS Passport	Validation Opinion
1	Air quality	0	<u>SO₂, NO_x emissions:</u> If the project was not implemented, the electricity would be imported from fossil fuel dominated grid. An EIA has been conducted and has been approved on 27/07/2012 as per CDM-PDD. It is confirmed that during the construction period, only dust emission are caused, while the regular watering of construction sites and access tracks had been carried out to control fugitive dust emissions. Thus the potential for causing dust impacts during construction phase is very low. Further the PP has established a procedure by which for each work a related work permit is been issued which also analyses the environmental issues. Further the PP has established and HSE Management Plan. Also the related subcontractors for elec and civil works have provided a safety and environmental plan^{/HSE/}. For each work to be carried out a job safety and environmental analysis is carried out and if impacts are identified related actions or countermeasures are described^{/HSE/}. The same is transferred to the employees via training and so call toolbox meetings, regular meetings with the employees at least on weekly basis. By this it is ensured that any issues are identified and measures are taken to compensate impacts. However, these emission reductions are insignificant in relation to the total emissions and therefore the score is chosen as "0". A related monitoring parameter is introduced. However CAR 05 and CAR 10 have been raised.
		0	<u>Dust:</u> As checked via onsite inspection to the project t site in the baseline scenario, no dust pollution occurs as the natural landscape is undisturbed.

Sustainable Development Matrix			
No	Indicator	Score in GS Passport	Validation Opinion
			An EIA has been conducted and has been approved on 27/07/2012 as per CDM-PDD. It is confirmed that during the construction period, only dust emission are caused, while the regular watering of construction sites and access tracks had been carried out to control fugitive dust emissions. Thus the potential for causing dust impacts during construction phase is very low. Further the PP has established a procedure by which for each work a related work permit is been issued which also analyses the environmental issues. Further the PP has established and HSE Management Plan. Also the related subcontractors for electricity and civil works have provided a safety and environmental plan^{/HSE/}. For each work to be carried out a job safety and environmental analysis is carried out and if impacts are identified related actions or countermeasures are described^{/HSE/}. The same is transferred to the employees via training and so call toolbox meetings, regular meetings with the employees at least on weekly basis. By this it is ensured that any issues are identified and measures are taken to compensate impacts. In lieu of abovementioned factors, the impact is selected to be "0". However CAR 05 and CAR 10 have been raised.
2	Water quality and quantity	0	<u>Water quantity and waste water treatment:</u> The project is wind power project. As per project description, map in the PDD and passport as well as onsite inspection the occupied land by the project is located on a crest made up of rocky sub soil without any nearby water resources such as rivers. The fresh water required during construction for sanitary issues is provided by tank lorries and stored in a fresh water tank. Sanitary wastewater will be generated during the construction period. The sanitary wastewater from the temporary living area, including excrement and urine, washing water, shower water, etc is collected in a septic tank. The septic tank is emptied time by time when almost full and collected by local WWT treatment company. The same has been checked during onsite inspection. The indicator is scored 0. However CAR 06 and CAR 10 have been raised.
3	Solid condition	0	<u>Soil quality and erosion:</u> The main impact to soil is the construction of roads and excavation for the foundation of the WTGs. PP has implemented related an Environmental and Social Action Plan which refers in PR3 point 3.3 to top-soil management and erosion control for temporary sites^{/ESAP/}. Further the Environmental and Social Management

Sustainable Development Matrix			
No	Indicator	Score in GS Passport	Validation Opinion
			and Monitoring Plan refers in Table 6-2 Environmental Monitoring and Monitoring Chart on page 32 that any kind of liquid or soil waste has primarily to be reused. This includes also excavated soil which is used for road construction as well as to prepare the concrete for the foundations. No extra soil is required from other regions. If any tree has to cut due to the project activity several new trees will be planted for compensation as per onsite interview with PP. The analyzed negative impacts can be fully mitigated and therefore this indicator is scored 0. However CAR 06 has been raised.
4	Other pollutants	0	<u>Noise:</u> Noise pollution is identified as a typical risk related to wind power project activities. Especially while grading and construction of site offices. However, this impact is temporary during construction only. Mitigation measures are in place to reduce the noise pollution as per check of supporting documents^{/SIA/, /ESMMP/, /ESAP/, /HSE/}, as this is a concern from stakeholders, and continuous input is received from them through grievance mechanism as identified during interview with stakeholders. During operations, noise from wind turbine rotating is also considered. It is intended to make the vegetation screens denser to reduce noise to acceptable levels for nearby douars/communes. The Environmental and Social Management and Monitoring Plan covers in Table 6-2 Environmental Monitoring and Monitoring Chart on page 32 noise as parameter to be observed along with countermeasure and related budget. The analyzed negative impacts can be fully mitigated and therefore this indicator is scored 0. However CAR 06 and CAR 10 have been raised.
		0	<u>Vibration:</u> In the baseline scenario vibration is not existent. During the project scenario construction phase, the vibrations of the devices used and explosives are identified as a potential source of disturbance for the communes. The Environmental and Social Management and Monitoring Plan covers in Table 6-2 Environmental Monitoring and Monitoring Chart on page 31/32 vibration as parameter to be observed along with countermeasure and related budget. The analyzed negative impacts can be fully mitigated and therefore this indicator is scored 0. However CAR

Sustainable Development Matrix			
No	Indicator	Score in GS Passport	Validation Opinion
			06 and CAR 10 have been raised.
		0	<u>Shadow flicker:</u> In the baseline scenario flickering is not existent. During construction flickering has been considered for the determination of the location of each turbine. Further as based on interview with personnel during site visit the location of turbines have been revised due to this issue. If there is still flickering during operation local stakeholders can drop their issue via the implemented grievance mechanism. Besides the Environmental Social Action Plan^{/ESAP/} page 10 under No 3.4 and 4.5 considers “Implementation of mitigation measures required by the Flicker effect report” along with related resources, responsibilities and monitoring. The analyzed negative impacts can be fully mitigated and therefore this indicator is scored 0. However CAR 06 and CAR 10 have been raised.
		0	<u>Landscape and visual impact:</u> During construction clearance of vegetation, building of access roads and site-office as well as excavation will occur changing the landscape with loss of aesthetics. However as the WTGs are located along the ridge of the mountain the impact due to clearance is limited and distant from the villages. As per Environmental Social Action Plan^{/ESAP/} mitigation measures are in place to reuse the excavated soil for re-vegetation in disturbed lands. The height of the wind turbines have also been taken into account during the initial assessment of placements of wind turbines, therefore reducing negative impacts during operation as confirmed via interview with PP during onsite assessment. The analyzed negative impacts can be fully mitigated and therefore this indicator is scored 0. However CAR 06 and CAR 10 have been raised.
		0	<u>Electromagnetic Interference & Radiation (EMI):</u> Main impact from EMI would result from the transformers esp. the transformers converting to finally 225kV. However there will be only one (max two) final transformer for high level voltage and this will be constructed as per grid company specifications as well as host country legislation. Besides the location for the transformer is not close to any village building to raise concerns on interference. Hence scoring indicator 0 is considered reasonable and plausible.

Sustainable Development Matrix			
No	Indicator	Score in GS Passport	Validation Opinion
		0	<u>Waste:</u> In the project scenario, due to construction work and employees' consumption of food & drinks, and medical needs, waste will be generated. The Environmental and Social Management and Monitoring Plan refers in Table 6-2 Environmental Monitoring and Monitoring Chart on page 32 that any kind of liquid or soil waste has primarily to be reused. Besides PP has contracts for the emptying the septic tank and proper treatment as per host country regulation which is checked with related invoices. Same has been checked for medical and oil waste based on provided invoices. Further as per onsite visit related waste bins are available and personnel are trained on preventing and recycling waste. The analyzed negative impacts can be fully mitigated and therefore this indicator is scored 0. However CAR 06 and CAR 10 have been raised.
5	Biodiversity	0	<u>Vegetation and bird migration:</u> The PP has prepared a biodiversity study and related to this developed a biodiversity protection plan. The protection plan covers the method, potential and cumulative impacts, measures, training and awareness as well as inspection and audits. The identified types to be observed are flora, herpetofauna, birds and bats. Further it is analyzed if the related identified species/genus on the wind farm is on the IUCN red list and under conservation status of the host country Morocco. Based on this assessment mitigation measures have been developed. For each type the impact by direct loss, fragmentation and loss and damage of vulnerable species as well as vehicle movement has been analyzed and countermeasures have been considered. E.g. for vehicle movement a speed limit is introduced. For the most endangered oak wood any loss will be offset. However as per the biodiversity action plan the oak wood habitat will only be impacted by 0.25%. A related offset strategy is included in the plan which also includes related management methods. Further tree seedlings will be provided to local households which also contributes to the increase in biodiversity. Hence the scoring of 0 is considered reasonable and plausible. However CAR 06 has been raised.
6	Quality of employment	+	<u>Number of HSE training:</u> Based on check of salary slips for social security system the employees are paid above the minimum wages required by local law^{/CTM/, /CSR/}. Further the PP has a recruitment policy which is followed. Further as per onsite

Sustainable Development Matrix			
No	Indicator	Score in GS Passport	Validation Opinion
			visit and interview with employees it is confirmed that local people are hired. E.g. two women overlook the kitchen and catering, another two of them are security guards and one is social manager. Therefore the project already brought employment to the region. Further all employees have to pass the HSE induction training and further trainings as per their job description and responsibilities^{/HSE/}. DOE checked several induction attendance sheet and can therefore confirm that the same is conducted. Also pictures of a training w.r.t. the use of fire extinguisher has been shown. All employees had related safety equipment from safety boots, helmets, reflecting signal vests, safety glasses, warm clothes for cold days etc. The work environment is kept clean and there is even a small kitchen which provides the employees with lunch during the day. Besides also subcontractors for main equipment are subject to aligning HSE with related standard. The certificates have been provided to DOE for check^{/ISO/}. Based on this the scoring of this indicator with “+” is considered reasonable and plausible. However CAR 05, CAR 06 and CAR 10 have been raised.
7	Livelihood of the poor	+	<u>Number of people impacted by CSR activities:</u> The PP supports the communities with several CSR activities such as Infrastructural (school transport, repair of mosque, road construction, water source development), cultural (festival sponsoring), agricultural (studies to improve the agricultural methods for farming) and health (mobile dentist). The budget provided by the PP for these CSR activities is 2.4 Mio. MAD for 2016 and 2.2 Mio MAD for 2017 as shown on presentation during interview with PP. The same has been confirmed by villagers and majors during feedback round and onsite visit. Also tree seedlings are provided for recultivation. Further as per land lease the rental fee has been directed to the related communities in line with host country law. This is confirmed during feedback round and even confirmed by the regions’ representative of Morocco’s king. As the PP is very active and in close relation to the local communities as well as has set out a Social Impact Plan^{/SIP/} as well as Stakeholder Engagement Plan^{/SAP/} next to the numbers of activities conducted and to be conducted it is reasonable and plausible to score the indicator “+”. Related monitoring parameter is established. However CAR 06 and CAR 10 have been raised.
8	Access to affordable and	0	In the baseline electricity consumed by the receiving companies would be used from the local grid which is mainly based on fossil fuel based energy generation. The electricity generated by the project is renewable

Sustainable Development Matrix			
No	Indicator	Score in GS Passport	Validation Opinion
	clean energy services		energy by WTGs. As the generated electricity is wheeled to mainly three companies and not used by the local douars/communes it is considered reasonable to score the indicator “0” as there is no change to the baseline situation for the local stakeholders. Therefore the indicator is scored “0”. However CAR 05, CAR 06 and CAR 10 have been raised.
9	Human and institutional capacity	+	<u>Number of people impacted by CSR activities:</u> The project does not have any impact on gender equality, social structures, and access to schooling or distribution of assets. The PP supports the communities with several CSR activities such as Infrastructural (school transport, repair of mosque, road construction, water source development), cultural (festival sponsoring), agriculture (studies to improve agricultural methods for farming) and health (mobile dentist). The budget provided by the PP for these CSR activities is 2.4 Mio MAD for 2016 and 2.2 Mio MAD for 2017 as shown on presentation during interview with PP. The same has been confirmed by villagers and majors during feedback round. Also tree seedlings are provided. Further the PP has developed a Land acquisition and Livelihood Restoration Plan^{/LALRP/}. The LALRP includes a gap analysis between Morocco law/regulations and EBRD requirements. Also measures to address the gap are introduced. As per feedback round it can be confirmed that these measures are followed. One important issue is the improvement of standards of living of affected people. The plan depicts the following livelihood restoration measures: • Traditional Weaving Cooperative; • Apiculture Cooperative; • Alphabetization Programme; • Provision of tree seedlings to local households; • Mobile Dentist Project; • Hiring from local communities and capacity buildings Therefore, the indicator is scored “+”. However CAR 06 and CAR 10 have been raised.
10	Quantitative	+	<u>Number of workers from local communities employed by the project:</u>

Sustainable Development Matrix			
No	Indicator	Score in GS Passport	Validation Opinion
	employment and income generation		The validation team agrees that “Number of jobs created during the implementation of the Project“ and “the staff position, salary level and length of employment” are suitable monitoring indicators as it can reflect the actual amount of employment opportunities created by the project. The improvement of income generation can be also indicated by the staff salary records. Annual monitoring will be carried out for the assessment of quantitative employment and income generation. The project will improve the livelihood of those hired through income and national social security. In addition, the tax paid by the project will be used for local infrastructure construction. DOE has checked social security slips of two employees against host country Code de travail^{/CTM/} which states the minimum salary to be paid and can therefore confirm that the salaries are above the minimum level. Further as per onsite visit and interview with employees it is confirmed that local people are hired. E.g. two women overlook the kitchen and catering, another two of them are security guards and one is social manager. Therefore the project already brought employment to the region. Further as per Procedure de Recruitment it is planned that 60 persons from the surrounding communes/douars will be hired by the project company. The indicator is scored “+”. However CAR 06 and CAR 10 have been raised.
11	Balance of payments and investment	+	<u>Amount of foreign investment:</u> The electricity generated by the bundled project will displace equivalent electricity mainly produced by fossil fuel fired power plants, thus result in reduced fossil fuel consumption. Since the fossil fuel consumption in Morocco depends on domestic sources, thus there is no net foreign exchange reserve generated from the project. However the project owners’ headquarter is in Saudi Arabia and therefore investment will be made from abroad to the host country Morocco. Further the project activity requires huge investment. The webpage of the European Bank for Reconstruction and Development (EBRD) supports the project via low interest loans. Together with further banks 126 Mio € is provided to the project covering approx 75% of the project investment. The remaining is provided by the project owners company located in Saudi Arabia. Therefore scoring the indicator “+” is considered reasonable and plausible. However CAR 06 and CAR 10 have been raised.
12	Technology	0	<u>Technology imported from overseas:</u>

Sustainable Development Matrix			
No	Indicator	Score in GS Passport	Validation Opinion
	transfer and technological self-reliance		The WTGs are provided by VESTAS a Danish wind turbine manufacturer^{/PDD/}. Further for the construction, installation and operation employees of the operating company ACWA Power Khalladi will be trained by the manufacturer as per interview with the PP. The foreign manufacturer wind turbines is used by the proposed project, hence, the technical know-how is transferred to Morocco. This is confirmed by checking the related purchase contract^{/CON/}. The indicator is scored 0 which is reasonable as there are other similar projects in the host country. However CAR 06 and CAR 10 have been raised.