Validation report form for post-registration changes for CDM project activities

(Version 01.0)

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

VALIDATION REPORT ON POST-REGISTRATION CHANGES (PRCs)	
Title and reference number of the project activity	Bethlehem Hydroelectric project (UNFCCC reference number: 2692)
Process track	☐ Prior approval ☐ Issuance ☒ Renewal of crediting period
Version number of the validation report on PRCs	Version 0.1
Completion date of the validation report on PRCs	30/08/2016
Type(s) of PRCs	☐ Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline ☒ Corrections ☐ Changes to the start date of the crediting period ☐ Inclusion of a monitoring plan to a registered project activity ☐ Permanent changes from registered monitoring plan, monitoring methodology or standardized baseline ☒ Changes to the project design of a registered project activity ☐ Types of changes specific to afforestation and reforestation project activities
Version number of PDD to which this report applies	Version 12
Project participant(s)	Bethlehem Hydro (Pty) Ltd Statkraft Markets BV
Host Party	South Africa
Sectoral scope(s), selected methodology(ies), and where applicable, selected standardized baseline(s)	Project Scope *(according to UNFCCC sectoral scope numbers for CDM)*

☒	1	Energy Industries (renewable- /non-renewable sources)
☐	2	Energy distribution
☐	3	Energy demand
☐	4	Manufacturing industries
☐	5	Chemical industry
☐	6	Construction
☐	7	Transport
☐	8	Mining/Mineral

				production
		☐	9	Metal production
		☐	10	Fugitive emissions from fuels (solid, oil and gas)
		☐	11	Fugitive emissions from production and consumption of halocarbons and hexafluoride
		☐	12	Solvents use
		☐	13	Waste handling and disposal
		☐	14	Afforestation and Reforestation
		☐	15	Agriculture
		☐	16	Carbon capture and storage
	Applied Methodology(ies) and/or standardized baseline	AMS-I.D, version 18.0: Grid connected renewable electricity generation Standardised baseline: ASB0001 "Standardized baseline: Grid emission factor for the Southern African power pool" Version 01.0		
Name of DOE	TÜV NORD CERT GmbH			
Name, position and signature of the approver of the validation report on PRCs	 Stefan Winter Final Approver			

SECTION A. Executive summary

As this assessment was carried out as part of the renewal of the credting period of the project activity please refer to chapter 2 of the renewal of crediting period validation report.

Table 1: Project Characteristics

Item	Data	
Project title	Bethlehem Hydroelectric project	
Project type	☐ Standard	☐ PoA
Project size	☐ Large Scale	☒ Small Scale
Technical Area(s)	1.2: Renewables	
Location	South Africa	
Crediting period	☒ Renewable Crediting Period (7 y) ☐ Fixed Crediting Period (10 y)	

For a detailed project description please refer to the registered PDD and/or the validation report (to which this report is attached).

SECTION B. Validation team, technical reviewer and approver

On the basis of a competence analysis and individual availabilities an assessment team, consistent of one team leader and 0 additional team members, were appointed. Furthermore also the personnel for the technical review and the final approval were determined.

The list of involved personnel, the tasks assigned and the qualification status are summarized in the following table below.

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)	Validation findings
1.	Team Leader	EI	Kochaniewicz	Grzegorz	Technical Support Ltd	x	x	x	x

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

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	IR	Stöhr	Christina	TÜV NORD CERT
2.	Approver	IR	Winter	Stefan	TÜV NORD CERT

SECTION C. Means of validation

C.1. Desk review

The *assessment of post registration changes* consisted of the following steps:

- Appointment of team members and technical reviewers
- A desk review of the registered and revised PDD/PDD/ submitted by the client and additional supporting documents
- On-Site assessment (if required)
- Background investigation and follow-up interviews with personnel of the project developer and its contractors,
- Resolution of corrective actions (CARs / CLs) (if any)
- Final reporting
- Technical review
- Final approval.

In this case all activities were carried out as part of the validation of the renewal of credtiong period of this project activity.

The registered as well as the revised PDD and supporting background documents related to the project design and the post registration changes were reviewed.
As far as required the assessment 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.

A list all documents reviewed or referenced during this validation is presented in **Fehler! Verweisquelle konnte nicht gefunden werden.**.

C.2. On-site inspection

Duration of on-site inspection: 11/03/2016				
No.	**Activity performed on-site**	**Site location**	**Date**	**Team member**
1.	○ Round of introductions ○ Attendance register ○ Procedure of the audit ○ Introduction of company and local facilities ○ Update of organisaiton, ○ Personal organisation and responsibilities ○ National policies, ○ History, size, future development ○ Plant characteristics (technology, plant capacity, permissions,) ○ Situation of electric production/export/ /import/back up ○ Update of PDD ○ Compliance/update of Baseline ○ Compliance of Monitoring Plan, Monitoring Report with Monitoring Methodology ○ Comparison of technical	Cape Town, PP office	11/03/2016	Grzegorz Kochaniewicz

Duration of on-site inspection: 11/03/2016				
No.	**Activity performed on-site**	**Site location**	**Date**	**Team member**
	parameters with PDD o Meters/ type/ accuracy / data recording/calibration record o Back up source(s); diesel generator o Data management, quality control and quality assurance			

C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Olivier	Anton-Louis	REH Group/Managing Director	11/03/2016	Update and changes to the project activity, national law and regulations, baseline situation, methodology and monitoring arrangements,	Grzegorz Kochaniewicz
2.	Wyngaard	Olga	REH/Compliance and communication officer	11/03/2016		

C.4. Clarification requests, corrective action requests and forward action requests raised

Areas of validation findings	No. of CL	No. of CAR	No. of FAR
Compliance with PDD form	-	-	-
Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline	-	-	-
Corrections	-	-	-
Changes to the start date of the crediting period	-	-	-
Inclusion of a monitoring plan to a registered project activity	-	-	-
Permanent changes from registered monitoring plan, monitoring methodology or standardized baseline	-	-	-
Changes to the project design of a registered project activity	-	-	-
Types of changes specific to afforestation and reforestation project activities	-	-	-
Others (please specify)	-	-	-
Total	-	-	-

SECTION D. Validation findings

D.1. Compliance with PDD form

Means of validation	The project participants used a later version of the PDD form for the revised PDD than the version of the PDD form of the registered PDD. By means of checking updated PDD with the latest applicable and available PDD template form the DOE can confirm that the information transferred to the later version of the PDD form is materially the same as that in the registered PDD besides those changes highlighted and assessed under this report.
Findings	-
Conclusion	The updated PDD is in line with the latest applicable PDD from.

D.2. Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline

Means of validation	Type of change(s):	☐	*Temporary Deviation from Monitoring Plan*	
		☐	*Temporary Deviation from Monitoring Methodology*	
	Description of post registration change			
	Start Date: Please provide the start date of the change	DD/MM/YYYY	**End Date:** Please provide the end date of the change, if applicable	DD/MM/YYYY
	Description: Please give a detailed description of the change(s)			
	Assessment of post registration change – Temporary deviations from MP or MM			
	Accuracy: Please give a detailed assessment whether the deviation is likely to lead to a reduction in the accuracy of the ER calculation.			
	Conservative-ness: Please give a detailed assessment whether conservative assumptions or discount factors have been applied to ensure that ER will not be overestimated.			
	Appendix 1 PS: Check if the changes fall under one of the scenarios of appendix 1 of the PS.			
Findings				
Conclusion	Based on the above the temporary deviation(s) from the registered monitoring plan, applied monitoring methodology and/or applied standardized baseline are in accordance with applicable validation requirements related to the temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline in the VVS.			
	Revised PDD			
	Rev. of PDD: Check whether the changes have been fully addressed in a revised PDD.	☐	The changes have correctly been reflected in the revised PDD.	
		☐	A revision of the PDD is not required (in case of temp. changes).	

		☐	The revised PDD has been forwarded in (i) track-change and (ii) clean version.
	Prior Approval		
	Prior approval: Assess whether the change requires prior approval of the board	☐	The post registration change requires prior approval
		☐	The post registration change does not require prior approval

D.3. Corrections

Means of validation	**Description of post registration change**			
	Start Date: Please provide the start date of the change	08/10/2016	**End Date:** Please provide the end date of the change, if applicable	onwards
	Description: Please give a detailed description of the change(s)	Several editorial changes have been done in the latest PDD: 1. Section A.1, Change of the design capacity: The design capacity of 3 + 4 MW, as stated in the registered PDD is not correct. During validation the power factor of the generators were not taken into account. The output of the installed generator at Sol Plaatje Dam is 3000 kVA which results by multiplying with the Power Factor (PF) of 0.8 in an installed capacity of **2.4 MW**. The output of the installed generator at Merino site is 4000 kVA which results by multiplying with the given Power Factor (PF) of 0.85 in an installed capacity of **3.4 MW**. The kVA value has mistakenly been cosndiered as MW capacity. 2. Section A.1. The description of project activity was revised to accound for tense "past". The time of registration and the perod of 1st credtiong period were added. 3. Section A.2.4. The address of PP was updated in line with real situation and in line with LoA and MoC. 4. Section A.3. The description of the technology was elaborated to be in line with "Instructions for filling out the project design document form for CDM project activities"**.** 5. Section B.1. The list of applied methodology and tools was completed in line with "Instructions for filling out the project design document form for CDM project activities"**.** Exact reference to the methodology and tools have been included as required by the latest PDD template. 6. Section B.2. The applicability conditons were added in line with "Instructions for filling out the project design document form for CDM project activities"**.** 7. Section B.3. The descripoitn of the project boundary was revised. Diagram and source of emssions were added in line with "Instructions for filling out the project design document form for CDM project activities". The revised PDD and monitoring plan meet the latest requirements of the applied methodology. 8. Section B.4. Establishment and description of baseline scenario was revised to account for use of standardized baseline and to improve transparency. 9. Section B.5. was revised to improve transparency. 10. Secton B.6.1. was revised to improve transparency of methodological choices. 11. Section B.6.2. Data and paramters not used in the calculation of Emisson reduction (NCV_{diesel}; $EF_{CO2,dielsel}$; ρ_{diesel}) were removed. The parameter EF (South African		

		Emission factor calculated using the Combined Margin methodological tool) was replaced by $EF_{grid,y}$ (South African standardised baseline grid emission factor,) 12. Section B.6.3. was revised in line with applied methodology. Removed statement under section B.3.regarding electricity imports monitoring. Revised PDD and monitoring plan meet the latest requirements of the applied methodology. 13. Section B.6.4. The Summary of ex ante estimation of emission reduction was revised for 2nd crediting period also accounting for change in value of GEF. 14. Section B.7.1. The paramters E1g, E2g, E1i, E2i were removed in line with methodology. Instead one monitoring parameter $EG_{PJ,facility,y}$ (Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh)) was introcuced in line with applied methodology. The monitoring parameters have been revised to align with the latest methodology. The only monitoring parameter is net electricity supplied to the grid. This electricity is supplied by both sites, Sol Plaatje and Merino. There is no change to the actual metering or the calculation. There are two bidirectional meters to measure net electricity at each facility (Sol Plaatje and Merino). To simplify the calculations, the quantity of net electricity generation supplied by the project to the grid is obtained from the sum of the net electricity generation from both main meters. This complies with the monitoring requirements of the methodology. There is no change in the metering between the first and second crediting period. Both a main meter and a check meter still exist at each facility. The correction relates to the parameter in the revised PDD. 15. Section B.7.3. was revised to describe the calculation of net electricity generation. 16. Section B.8. was added and filled as per applicable version of PDD template. 17. Section C.1.1. was revised to account for the second credtiong period. 18. Section C.2.1. was revised to account for the second credtiong period. 19. Section F. was revised to account for issuance of new LoA. 20. Appendix 1. The address of PP Brethlehem Hydro (PTY) Ltd was revised and the responsible person for completing the PDD entity was added. 21. Further editorial changes to Appendixes 3.; 4.; 5. There is no effect to the baseline caclulation. 22. Appenix 6. The Summary of post registration changes was added.
	Assessment of post registration change – Corrections	
	Accuracy: Please give a detailed assessment whether the deviation is likely to lead to a reduction in the accuracy of the ER calculation.	The listed corrections in the PDD are in line with the applicable medhodology, they improve transparency and do not negatively effect the accuracy of baseline and calculation of ER calculation. The correction of the installed capacity do not negatively effect the applicability of the methodology AMS-I.D. With the combined installed capacity of 5.8 MW the project remains under the limit for small scale project activity. The equipment is as it has been installed from the project start on. No equipment has been changed at any time, only the design capacity calculation was corrected. The technical

			data of the installed equipment has been checked and the name plates of both turbines and generators have been checked during on site visit.
	Conservative-ness: Please give a detailed assessment whether conservative assumptions or discount factors have been applied to ensure that ER will not be overestimated.		The listed corrections are in line with the applied medhodology. The corrections are reflecting the provisions of the applied methodology applying defined baseline scenario and standardized baseline. The calculation of ex-ante ER was based on FSR and therefore remain unchanged which is conservative and not overestimated.
	Appendix 1 PS: Check if the changes fall under one of the scenarios of appendix 1 of the PS.		The changes do not effect the design of the project activity and in line with para 1 of Appendix 1. Of PS Version 9 do not require prior approval by the CDM Executive Board.
Findings			
Conclusion	Based on the above stated the corrections to the registered PDD are in accordance with applicable validation requirements related to the corrections in the VVS.		
	Revised PDD		
	Rev. of PDD: Check whether the changes have been fully addressed in a revised PDD.	☒	The changes have correctly been reflected in the revised PDD.
		☐	A revision of the PDD is not required (in case of temp. changes).
		☒	The revised PDD has been forwarded in (i) track-change and (ii) clean version.
	Prior Approval		
	Prior approval: Assess whether the change requires prior approval of the board	☐	The post registration change requires prior approval
		☒	The post registration changes do not require prior approval

D.4. Changes to the start date of the crediting period

Means of validation	**Description of post registration change**			
	Start Date: Please provide the registered start date of the CP.	DD/MM/YYYY	**Revised Start Date:** Please provide the proposed revised start date of the CP	DD/MM/YYYY
	Description: Please give a detailed description /reasoning of the requested revision of CP starting date:	n/a		
	LDC: Please check if the host country is an LDC. In case of LDCs the timeframes of the below defined categories are to be doubled.	☐	The host country is a LDC	
		☐	The host country is **not** a LDC	
	Categories: Please check under which category - as defined below – the requested changes fall. In case of LDCs the timeframes are to be doubled.	☐	Category A: > ± 2 a	
		☐	Category B: < ± 1 a; not before registration date	
		☐	Category C: $(SD_{old} \pm 1\ a) \leq SD_{new} \leq (SD_{old} \pm 2\ a)$	
	Assessment of post registration change			
	Cat. A: > ± 2 a	☐	The change is a cat. A case. The change of the CP	

	Changes of start date of more than 2 years (4 years for LDCs) are not allowed as per the PS.		start date as requested by the PP is not allowed as per the PS. Thus a corresponding CAR has been raised.
	Cat. B: < ± 1 a Prior notification is not required if changes of less than 1 year are requested. The CP start date shall not be earlier than the date of the project registration.	☐	The change is a cat. B case. The proposed new CP start date differs less than ± 1 year (2 years in case of LDCs) from the registered CP start date. Furthermore it is confirmed that the proposed new CP start date is not before the registration date of the PA. Thus a prior approval is not required.
	Cat. B: **± 1a < SD < ± 2a** Check whether the project falls under this category. If yes prior approval is required. The assessment team shall assess on the basis of a demonstration by the PPs whether the conservativeness of the baseline is not effected by changes that have occurred in-between. Further it has to be assessed, whether substantive progress has been made by the PPs to start the project activity.	☐	The change is a cat. C case.
		☐	The PPs have provided the assessment team with a sufficient demonstration regarding (i) potential effects on the baseline and (ii) progress made to start the project.
		☐	On the basis of a detailed analysis of the PP´s demonstration as well as background investigation (incl. on-site inspection) the assessment team confirms that no changes have occurred to the PA which would result in a less conservative baseline. This assessment is based on the following considerations: < further details >
		☐	On the basis of a detailed analysis of the PP´s demonstration as well as background investigation (incl. on-site inspection) the assessment team confirms that substantive progress has been made by the PPs to start the PA. This assessment is based on the following considerations: < further details >
Findings			
Conclusion	Based on the assessment above the changes to the start date of the crediting period are in accordance with applicable validation requirements related to the changes to the start date of the crediting period in the VVS.		
	Revised PDD		
	Rev. of PDD: Check whether the changes have been fully addressed in a revised PDD.	☐	The changes have correctly been reflected in the revised PDD.
		☐	A revision of the PDD is not required (in case of temp. changes).
		☐	The revised PDD has been forwarded in (i) track-change and (ii) clean version.
	Prior Approval		
	Prior approval: Assess whether the change requires prior approval of the board	☐	The post registration change requires prior approval
		☐	The post registration change does not require prior approval

D.5. Inclusion of a monitoring plan to a registered project activity

Means of validation	**Description of post registration change**			
	Start Date: Please provide the start date of the change	DD/MM/YYYY	**End Date:** Please provide the end date of the change, if applicable	DD/MM/YYYY
	Description: Please give a detailed description of the change(s)	n/a		

	Assessment of post registration change – Inclusion of a MP		
	MM compliance: Please check in case of changes to the registered MP, whether they are in compliance with the MM.		
	Later version of MM: Please check in cases where compliance with a later version of the MM is demonstrated that the conservativeness of the monitoring and verification is not effected.		
	Accuracy: Please give a detailed assessment whether the deviation is likely to lead to a reduction in the accuracy of the ER calculation.		
	Conservative-ness: Please give a detailed assessment whether conservative assumptions or discount factors have been applied to ensure that ER will not be overestimated.		
	Appendix 1 PS: Check if the changes fall under one of the scenarios of appendix 1 of the PS.		
Findings			
Conclusion	Based on the above stated the inclusion of a monitoring plan to the registered project activity is in accordance with applicable validation requirements related to the inclusion of a monitoring plan to a registered project activity in the VVS.		
	Revised PDD		
	Rev. of PDD: Check whether the changes have been fully addressed in a revised PDD.	☐	The changes have correctly been reflected in the revised PDD.
		☐	A revision of the PDD is not required (in case of temp. changes).
		☐	The revised PDD has been forwarded in (i) track-change and (ii) clean version.
	Prior Approval		
	Prior approval: Assess whether the change requires prior approval of the board	☐	The post registration change requires prior approval
		☐	The post registration change does not require prior approval

D.6. Permanent changes from registered monitoring plan, monitoring methodology or standardized baseline

Means of validation	Type of change(s):	☐	*Permanent Change from Monitoring Plan*
		☐	*Permanent Change from Monitoring Methodology*

	Description of post registration change			
	Start Date: Please provide the start date of the change	DD/MM/YYYY	**End Date:** Please provide the end date of the change, if applicable	DD/MM/YYYY
	Description: Please give a detailed description of the change(s)	n/a		
	Assessment of post registration change – Permanent changes from MP or MM			
Findings				
Conclusion	Based on the above stated the permanent changes from the registered monitoring plan, applied monitoring methodology and/or applied standardized baseline are in accordance with applicable validation requirements related to the permanent changes from the registered monitoring plan, monitoring methodology and/or standardized baseline in the VVS.			
	Revised PDD			
	Rev. of PDD: Check whether the changes have been fully addressed in a revised PDD.	☐	The changes have correctly been reflected in the revised PDD.	
		☐	A revision of the PDD is not required (in case of temp. changes).	
		☐	The revised PDD has been forwarded in (i) track-change and (ii) clean version.	
	Prior Approval			
	Prior approval: Assess whether the change requires prior approval of the board	☐	The post registration change requires prior approval	
		☐	The post registration change does not require prior approval	

D.7. Changes to the project design of a registered project activity

Means of validation	Type of change(s):	☒	*Changes to the project design*	
		☐	*Changes to the PoA design*	
	Description of post registration change			
	Start Date: Please provide the start date of the change	08/10/2016	**End Date:** Please provide the end date of the change, if applicable	onwards
	Description: Please give a detailed description of the change(s)	The non-functional back up diesel generator equipment has been removed from the project sites. The previous PDD included an existent diesel generator within the calculations. However the generators have never been operational and now have been removed from the site. Therefore diesel consumption and diesel monitoring has been removed from the project document and from the ER calculation. This does not impact the credits generated or the applicability of the methodology.		
	Applicability and application of the Approved Baseline Methodology			
	Description: Please give a detailed description on how the changes effect the applicability and application of the approved Baseline Methodology. Check if the actual changes would adversely effect the conclusions during	The changes only refer to the quantity of diesel used in the back up generators. As per methodoglogy AMS-I.D, para 39 “For most renevable energy project activities, PEy=0. Nevertheless para 40 stipulates that “CO2 emissions from on-site consumption of fossil fuels due to the project activity shall be calculated..”. Moreover the large scale, used in combination with the small scale AMS-I.D, ACM 0002 methodology in paragraph 37 states that “… emissions due to the use of fossil fuels for the backup generator can be		

validation.	neglected." During the verification onsite inspection on 14th of december 2013 the diesel generators were not operational and partly dismantled. This was recorded in MR in 2013 "*the verification team noted during interview with the project owner (*onsite*) that the diesel gensets were not operated and therefore no invoices are existent.*" PP provided affidavid singned at the South African Police Service dates 16/04/2016 confirming the removal of diesel generators from onsite. As per DOE host country expertise the South African grid is sufficient to provide back up via bidirectional electricity meters for the power plant. The use of fossil fuel for back up was accounted for the monitoring of net electricity generation, where the imported backup electricity is extracted from the exported electricity. PP removed two monitoring parmaters FC1,j ; FC2,j (Quantity of Diesel consumed by stand by generator at the Sol Plaatje/Merino Unit during the crediting period j) from the monitoring plan and revised the project emission calculation. The change does not negatively effect the applicability and the application of the approved baseline methodology. The change contributes to simplification of monitoring and calculation and does not effect the conservativeness of the ER.
Additionality assessment	
Description: Please give a detailed description re-assessment of additionality, Check whether the actual changes would adversely effect the conclusions during validation. If required please make use of the assessment tables in the annex.	**Methodology:** In the original project documentation the additionality was justified in line with the requirements of Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities. Based on the scale of the project activity PP demonstrated the additionality by barriers. **Decisive Route of Addtionality Justification** During the original validation of the project the additionality was justified on the basis of barrier analysis. **Re-Assessment of Additionality** The removal of the backup diesel genertors do not negatively effect the additionality which is based on barrier due to previling practice. **Result of Additionality Re-Assessement** Thus the validation team concludes that the additionality of the project is not effected by the technical changes carried out as a deviation from the project design originally validated and registered
Scale of the Project activity	
Description: Please give a details regarding the effect of the changes on the scale of the PA (i.e. LSC or SSC).	The change does not effect the scale of the smalll scale project activity.
Revised PDD	

	Rev. of PDD: Check whether the changes have been fully addressed in a revised PDD. In this context pl. refer to - Changes in the effect-tive output capacity. - Addition of compo-nents or extension of technology - In case of multiple site projects: Removal or addition of sites - Operational parameters under the control of PPs differing from expected parame-ters - Changes to the baseline Meth (e.g. addition of a new Meth or change of the BL scenario. - Effects with regards to B, C and D above incl. compliance with the MP and level of accuracy and completeness of monitoring.	☒	The post registration change has correctly been reflected in the revised PDD. This assessment is based on the following considerations: The monitoring plan in the PDD has been updated to comply with the latest applicable version of the monitoring methodology (AMS-I.D ver.18). The changes from the current crediting period can be summarized as follows: Following parameters that have been monitored during the 1st creditiong period are removed from the monitoring plan: • FC1,j (Quantity of Diesel consumed by stand by generator at the Sol Plaatje Unit during the crediting period j) • FC2,j (Quantity of Diesel consumed by stand by generator at the Merino Unit during the crediting period j) Paramters FC1,j, FC2,j were removed from the monitoring plan in order to account for the removal of the back up diesel generators. During the previous verification onsite visits the DOE inspected the diesel generators. The generators were not operational and not functional. The South African power grid is sufficient as an backup and the diesel generators were not used. The diesel generators were removed from the site. This was confirmed by official affidavid before the South African Police Service. The changes do not effect the output capacity.
Findings			
Conclusion	The decsribed change to the project design of the registered project activity is in accordance with applicable validation requirements related to the changes to the project design of a registered project activity in the VVS.		
	Traceability: Check if the PPs have provided a revised PDD in both clean and track-change version.	☒	The revised PDD has been forwarded in (i) track-change and (ii) clean version.
	Prior approval: Assess whether the change requires prior approval of the board	☒	The changes do not raise concerns with respect to aspects outlined in the PS: a. applicability and application of the Approved Baseline Methodology under which the project activity has been registered. b. additionality of the project c. scale of the CDM project activity and Prior Approval by the Board is not required.
		☐	The post registration change requires prior approval.

D.8. Types of changes specific to afforestation and reforestation project activities

Means of validation	n/a
Findings	
Conclusion	Based on the above the changes specific to afforestation and reforestation project activities are in accordance with applicable validation requirements related to the types of changes specific to afforestation and reforestation project activities in the VVS.

SECTION E. Internal quality control

Before submission of the final assessment report a technical review is carried out. The technical reviewer are competent GHG auditors were 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 assessment opinion as prepared by the validation team leader may be confirmed or revised. Furthermore reporting improvements might be achieved.

SECTION F. Validation opinion

The below listed changes have occurred after the registration of the project / PoA.

Type of Change occured	*Total No. of changes*	*No. of changes which require prior approval*
☐ Temporary deviations from the MP	-	-
☐ Temporary deviations from the MM	-	-
☒ Corrections that do not effect the project	1	0
☐ Change to the start date of the crediting p.	-	-
☐ Permanent changes from the MP	-	-
☐ Permanent changes from the MM	-	-
☒ Design changes to the project activity / PoA	1	0
☐ Changes specific to AR projects	-	-

Non of the changes requires prior approval of the Board.

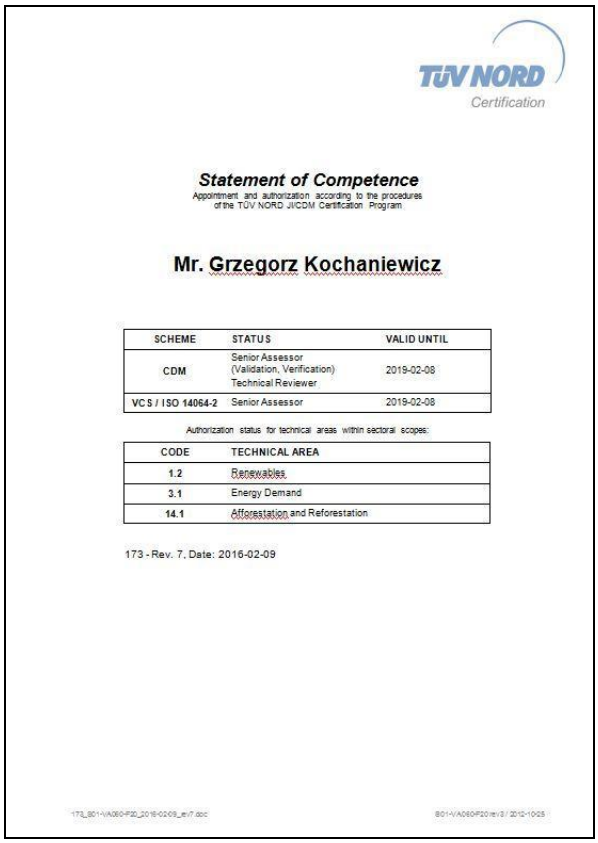
Kigali, 30/08/2016

Dr. Grzegorz Kochaniewicz
TÜV NORD JI/CDM CP
Assessment 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
CL	Clarification Request
CO_2	Carbon dioxide
CO_{2e}	Carbon dioxide equivalent
CP	Certification Program
DNA	Designated National Authority
EB	CDM Executive Board
GHG	Greenhouse gas(es)
PA	Project activity
PDD	Project Design Document
PoA	Programme of Activities
PRC	Post Registration Changes
QC/QA	Quality control/Quality assurance
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard

Appendix 2. Competence of team members and technical reviewers



TÜV NORD Certification

Statement of Competence

Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Mr. Grzegorz Kochaniewicz

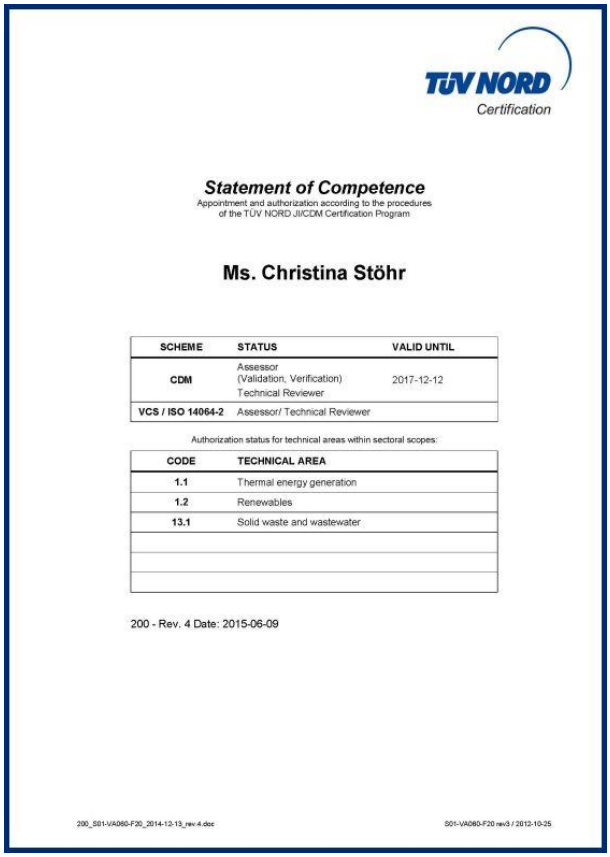
SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2019-02-08
VCS / ISO 14064-2	Senior Assessor	2019-02-08

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
3.1	Energy Demand
14.1	Afforestation and Reforestation

173 - Rev. 7, Date: 2016-02-09

173_S01-VA060-F20_2016-02-09_rev7.doc S01-VA060-F20 rev3 / 2012-10-25



TÜV NORD Certification

Statement of Competence

Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Ms. Christina Stöhr

SCHEME	STATUS	VALID UNTIL
CDM	Assessor (Validation, Verification) Technical Reviewer	2017-12-12
VCS / ISO 14064-2	Assessor/ Technical Reviewer	

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.1	Thermal energy generation
1.2	Renewables
13.1	Solid waste and wastewater

200 - Rev. 4 Date: 2015-06-09

200_S01-VA060-F20_2014-12-13_rev.4.doc S01-VA060-F20 rev3 / 2012-10-25

Appendix 3. Documents reviewed or referenced

No.	Author	Reference	Title	References to the document	Provider
1	South African DNA	/LOA1/	Letter of Approval from DNA of South Africa dated 30/04/2014	https://cdm.unfccc.int/Projects/DB/SGS-UKL1245061289.99/view	UNFCCC
2	Neiderland DNA	/LoA2/	Letter of Approval from DNA of Niederland dated 06/12/2007	https://cdm.unfccc.int/Projects/DB/SGS-UKL1245061289.99/view	UNFCCC
3	PP	/MAIL1/	Notification mail by the PP to the UNFCCC indicating the intention to renew the crediting period, dt. 18/03/2016		PP
4	PP	/MAIL2/	Confirmation mail by the UNFCCC in response to /MAIL1/ dt. 22/03/2016		PP
5	PP	/MI/	List of Montoring Instruments		PP
6	PP	/MOC/	Modalities of Communication	https://cdm.unfccc.int/Projects/DB/SGS-UKL1245061289.99/view	UNFCCC
7	PP	/PDD/	RCP Project Design document "Bethlehem Hydroelectric project" • Version No. 9, dated 31/03/2016 • Version No. 10, dated 06/05/2016 • Version No. 11, dated 24/06/2016 • Version No. 12, dated 05/08/2016		PP
8	PP	/PDD-Reg/	Registered Project Design document "Bethlehem Hydroelectric project" (Version No. 8, dated 01/08/2013)	https://cdm.unfccc.int/Projects/DB/SGS-UKL1245061289.99/view	UNFCCC
9	PP	/XLS/	Emission reduction calculation spreadsheet		PP
10	DOE	/CPM/	TÜV NORD JI / CDM Certification Program Manual (incl. procedures and forms)		DOE
11	IPCC	/IPCC/	• IPCC Good Practice Guidance & Uncertainty Management in National Greenhouse Gas Inventories, 2000 • Revised 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual	www.ipcc-nggip.iges.or.jp	Others
12	UNFCCC	/KP/	Kyoto Protocol (1997)	http://unfccc.int/kyoto_protocol/items/2830.php	Others
13	UNFCCC	/MA/	Decision 3/CMP. 1 (Marrakesh – Accords & Annex to decision (17/CP.7))	http://cdm.unfccc.int/Reference/COPMOP/index.html	Others
14	UNFCCC	/METH-1/	AMS-I.D.: "Grid connected renewable electricity generation"	https://cdm.unfccc.int/methodologies/DB/W3TINZ	Others

No.	Author	Reference	Title	References to the document	Provider
			(Version 18.0)	7KKWCK7L8WTXFQQOFQQH4SBK	
15	UNFCCC	/METH-2/	ACM0002: "Grid-connected electricity generation from renewable sources" (Version 16.0)	https://cdm.unfccc.int/methodologies/DB/EY2CL7RTEHRC9V6YQHLAR6MJ6VEU83	Others
16	UNFCCC	/TOOL/	"Methodological tool: Tool to determine the remaining lifetime of equipment" (Version 01)	https://cdm.unfccc.int/EB/050/eb50_repan15.pdf	Others
17	UNFCCC	/SB/	ASB0001 "Standardized baseline: Grid emission factor for the Southern African power pool" (Version 01.0)	https://cdm.unfccc.int/methodologies/standard_base/EB73_repan03_ASB-0001.pdf	Others
18	UNFCCC	/PCP/	CDM project cycle procedure, version 9.0	https://cdm.unfccc.int/Reference/Procedures/index.html	Others
19	UNFCCC	/PDD-T/	Project Design Document Form (CDM-SSC-PDD-FORM) - Version 7.0 including Attachment: Instructions for filling out the project design document form for small-scale CDM project activities	https://cdm.unfccc.int/Reference/PDDs_Forms/index.html	Others
20	UNFCCC	/PS/	CDM project standard, version 9.0	http://cdm.unfccc.int/Reference/Standards/index.html	Others
21	UNFCCC	/TVB/	Methodological Tool: "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period"" version 03.0.1	https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-11-v3.0.1.pdf	Others
22	UNFCCC	/VVS/	CDM Validation and Verification Standard, Version 09.0	http://cdm.unfccc.int/Reference/Standards/index.html	Others
23	SGS	/VAL/	Validation Report for CDM project Bethlehem Hydroelectric project" (Version No. 7, dated 07/10/2009)	https://cdm.unfccc.int/Projects/DB/SGS-UKL1245061289.99/view	Others
24	TN Cert	/PRC/	PRC Report for CDM project Bethlehem Hydroelectric project" (Version No. 7, dated 07/10/2009)	https://cdm.unfccc.int/Projects/DB/SGS-UKL1245061289.99/view	Other
25	TN Cert	/MR/	Verification Report for CDM project Bethlehem Hydroelectric project" (Version No. 1, dated 29/08/2014)	https://cdm.unfccc.int/Projects/DB/SGS-UKL1245061289.99/view	Other
26	REH Operations & Maintainance	/DIS/	Affidavid for removal of diesel generators		PP

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

Table 1. CL from this validation

CL ID	xx	**Section no.**		**Date:** DD/MM/YYYY
Description of CL				
Project participant response				**Date:** DD/MM/YYYY
Documentation provided by project participant				
DOE assessment				**Date:** DD/MM/YYYY

Table 2. CAR from this validation

CAR ID	xx	**Section no.**		**Date:** DD/MM/YYYY
Description of CAR				
Project participant response				**Date:** DD/MM/YYYY
Documentation provided by project participant				
DOE assessment				**Date:** DD/MM/YYYY

Table 3. FAR from this validation

FAR ID	xx	**Section no.**		**Date:** DD/MM/YYYY
Description of FAR				
Project participant response				**Date:** DD/MM/YYYY
Documentation provided by project participant				
DOE assessment				**Date:** DD/MM/YYYY

Appendix 5. Assessment of Financial Parameters

Assessment of Financial Parameters (VVS, §§ 129, 130 / in case financial parameters from FSR §131 and §132)

☒	No financial parameters are used for additionality justification
☐	Assessment of all financial parameters see below

Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT	
					Correctness of value applied	Comment
				/ /	☐	
				/ /	☐	
				/ /	☐	
				/ /	☐	
				/ /	☐	
				/ /	☐	
				/ /	☐	

Appendix 6. Assessment of Barrier Analysis

Assessment of Barrier Analysis (VVS, §§ 133-136)

☒	No barrier parameters are used for additionality justification
☐	Assessment of barriers see below

Kind of Barrier (invest, tech, other)	Description of Barrier	Evidence used	Assessment of validation team	
			Appropri-ateness of information source	Explanation of final result
			☒	
			☒	
			☒	
			☒	
			☒	
			☒	
			☒	