



## 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)

<b>Title and reference number of the project activity</b>	DEWA Chiller Station L UNFCCC ID: 7260			
<b>Process track</b>	<input checked="" type="checkbox"/> Prior approval <input type="checkbox"/> Issuance <input type="checkbox"/> Renewal of crediting period			
<b>Version number of the validation report on PRCs</b>	Version 1.0			
<b>Completion date of the validation report on PRCs</b>	20/04/2016			
<b>Type(s) of PRCs</b>	<input type="checkbox"/> Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline <input checked="" type="checkbox"/> Corrections <input type="checkbox"/> Changes to the start date of the crediting period <input type="checkbox"/> Inclusion of a monitoring plan to a registered project activity <input checked="" type="checkbox"/> Permanent changes from registered monitoring plan, monitoring methodology or standardized baseline <input type="checkbox"/> Changes to the project design of a registered project activity <input type="checkbox"/> Types of changes specific to afforestation and reforestation project activities			
<b>Version number of PDD to which this report applies</b>	Version 4			
<b>Project participant(s)</b>	Dubai Carbon Centre of Excellence Dubai Electricity and Water Authority (DEWA)			
<b>Host Party</b>	United Arab Emirates			
<b>Sectoral scope(s), selected methodology(ies), and where applicable, selected standardized baseline(s)</b>	Project Scope (according to UNFCCC sectoral scope numbers for CDM)	<input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7	1 2 3 4 5 6 7	Energy Industries (renewable- /non-renewable sources) Energy distribution Energy demand Manufacturing industries Chemical industry Construction Transport

**CDM-PRCV-FORM**

	<input type="checkbox"/>	8	Mining/Mineral production
	<input type="checkbox"/>	9	Metal production
	<input type="checkbox"/>	10	Fugitive emissions from fuels (solid, oil and gas)
	<input type="checkbox"/>	11	Fugitive emissions from production and consumption of halocarbons and hexafluoride
	<input type="checkbox"/>	12	Solvents use
	<input type="checkbox"/>	13	Waste handling and disposal
	<input type="checkbox"/>	14	Afforestation and Reforestation
	<input type="checkbox"/>	15	Agriculture
	<input type="checkbox"/>	16	Carbon capture and storage
	Applied Methodology(ies) and/or standardized baseline	AMS II.B, Version 09 "Supply side energy efficiency improvement projects - generation"	
<b>Name of DOE</b>		TÜV NORD CERT GmbH	
<b>Name, position and signature of the approver of the validation report on PRCs</b>		Rainer Winter, Head of Certification Program	

**SECTION A. Executive summary**

&gt;&gt;

Dubai Carbon Centre of Excellence has commissioned the TÜV NORD JI/CDM Certification Program to carry out the assessment of the post registration change for the project:

“DEWA Chiller Station L”

with regard to the relevant requirements for CDM project activities.

The project reduces GHG emissions due to increasing the efficiency of the turbines through colling the inlet air chilling system “Thermal Energy Storage and Turbine Inlet Air Cooling” (TESTIAC). This cooling process results in increasing the density of inlet air which results in increased air mass flow rate.

Essential data of the project is presented in the following Table 2-1.

**Table 1: Project Characteristics**

Item	Data	
Project title	DEWA Chiller Station L	
Project type	<input checked="" type="checkbox"/> Standard	<input type="checkbox"/> PoA
Project size	<input type="checkbox"/> Large Scale	<input checked="" type="checkbox"/> Small Scale
Technical Area(s)	1.1: Thermal energy generation	
Location	Jebel Ali District, Power Plant L Dubai, United Arab Emirates	
Crediting period	<input type="checkbox"/> Renewable Crediting Period (7 y) <input checked="" type="checkbox"/> Fixed Crediting Period (10 y)	

**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 1 additional team member, 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	IR	Saalmann	Martin	TÜV NORD CERT	x	x	x	x
2.	Verifier	IR	Winter	Stefan	TÜV NORD CERT	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	Winter	Rainer	TÜV NORD CERT
2.	Approver	IR	Winter	Rainer	TÜV NORD CERT

**SECTION C. Means of validation****C.1. Desk review**

&gt;&gt;

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<sup>/PDD/</sup> 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.

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 Appendix 3.

**C.2. On-site inspection**

Duration of on-site inspection: 27/10/2015 to 28/10/2015				
No.	Activity performed on-site	Site location	Date	Team member
1.	<b>Opening meeting at office:</b> <ul style="list-style-type: none"> <li>- Round of introduction</li> <li>- Purpose of the audit</li> <li>- Confirmation of audit plan</li> <li>- Introduction to the project</li> </ul>	Power Plant L	2015-10-27	Saalmann, Winter
2.	<b>Physical Site Inspection</b> <ul style="list-style-type: none"> <li>- Physical inspection of conducted project activity</li> <li>- Check of monitoring equipment</li> <li>- PLC, electronic archiving system, back-up of data</li> <li>- Log sheets</li> <li>- Interview with personnel (operation, maintenance, training)</li> </ul>	Power Plant L	2015-10-27	Saalmann, Winter
3.	<b>Check of supporting documents:</b> <ul style="list-style-type: none"> <li>- Technical specification of the equipment utilized in the project scenario</li> <li>- Technical drawings of baseline setup</li> <li>- Technical drawings of project setup</li> <li>- Technical specification, calibration certificates of the monitoring facilities</li> <li>- ER calculation</li> <li>- Plant operation License, if any</li> <li>- Environmental License, if any</li> <li>- Operational date of the project activity</li> <li>- Documentation to the monitoring management (e.g. responsibilities, data management, emergency procedures, QA/QC)</li> <li>- Training records</li> </ul>	Power Plant L	2015-10-27, 2015-10-28	Saalmann, Winter
4.	<b>Closing Meeting:</b> <ul style="list-style-type: none"> <li>- Summary of the onsite inspection</li> <li>- Presentation of findings</li> <li>- Clarification of next steps</li> </ul>	Power Plant L	2015-10-28	Saalmann, Winter

**C.3. Interviews**

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Simic	Neno	DEWA	2015-10-27 & 28	Performance of the project activity, General issues of the project activity and documentation, licences, responsibilities	Saalmann, Winter
2.	Bosse	Thomas	DCCE		Implementation of the CDM monitoring plan, Monitoring report, ER calculation	
3.	Al Taie	Shahda	DCCE		Operation procedures, data collection and aggregation.	
4.	Abraham	Jacob	DEWA			
5.	Hossain	Dakur	DEWA			
6.	Shaikh	Fazal M.	DEWA			

7.	Anwar	Pathan	DEWA		document check, training, calibrations, data back-up, technical data sheets, plant operations and maintenance	
8.	Themel	M.	DEWA			
9.	Merchant	Y.	DEWA			
10.	Balaji	R.	DEWA			
11.	Hesham	Doseh	DEWA			
12.	Zulfiquer	M.A.	DEWA			
13.	Serag	M.	DEWA			

#### 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	-	1	-
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)	-	-	-
<b>Total</b>	<b>0</b>	<b>1</b>	<b>0</b>

### SECTION D. Validation findings

#### D.1. Compliance with PDD form

<b>Means of validation</b>	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.
<b>Findings</b>	CAR 1: The PDD has not been updated to the latest template format.
<b>Conclusion</b>	The updated PDD is in line with the latest applicable PDD form.

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

<b>Means of validation</b>	Type of change(s):	<input type="checkbox"/>	Temporary Deviation from Monitoring Plan	
		<input type="checkbox"/>	Temporary Deviation from Monitoring Methodology	
	<b>Description of post registration change</b>			
	<b>Start Date:</b> Please provide the start date of the change	DD/MM/YYYY	<b>End Date:</b> Please provide the end date of the change, if applicable	DD/MM/YYYY
	<b>Description:</b> Please give a detailed description of the change(s)	n.a.		
	<b>Assessment of post registration change – Temporary deviations from MP or MM</b>			
<b>Accuracy:</b> Please give a detailed assessment whether				

	the deviation is likely to lead to a reduction in the accuracy of the ER calculation.																			
	<b>Conservative-ness:</b> Please give a detailed assessment whether conservative assumptions or discount factors have been applied to ensure that ER will not be overestimated.																			
	<b>Appendix 1 PS:</b> Check if the changes fall under one of the scenarios of appendix 1 of the PS.																			
<b>Findings</b>																				
<b>Conclusion</b>	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.																			
	<table border="1"> <tr> <td colspan="3"><b>Revised PDD</b></td> </tr> <tr> <td rowspan="3"> <b>Rev. of PDD:</b>            Check whether the changes have been fully addressed in a revised PDD.         </td> <td><input type="checkbox"/></td> <td>The changes have correctly been reflected in the revised PDD.</td> </tr> <tr> <td><input type="checkbox"/></td> <td>A revision of the PDD is not required (in case of temp. changes).</td> </tr> <tr> <td><input type="checkbox"/></td> <td>The revised PDD has been forwarded in (i) track-change and (ii) clean version.</td> </tr> <tr> <td colspan="3"><b>Prior Approval</b></td> </tr> <tr> <td rowspan="2"> <b>Prior approval:</b>            Assess whether the change requires prior approval of the board         </td> <td><input type="checkbox"/></td> <td>The post registration change requires prior approval</td> </tr> <tr> <td><input type="checkbox"/></td> <td>The post registration change does not require prior approval</td> </tr> </table>		<b>Revised PDD</b>			<b>Rev. of PDD:</b> Check whether the changes have been fully addressed in a revised PDD.	<input type="checkbox"/>	The changes have correctly been reflected in the revised PDD.	<input type="checkbox"/>	A revision of the PDD is not required (in case of temp. changes).	<input type="checkbox"/>	The revised PDD has been forwarded in (i) track-change and (ii) clean version.	<b>Prior Approval</b>			<b>Prior approval:</b> Assess whether the change requires prior approval of the board	<input type="checkbox"/>	The post registration change requires prior approval	<input type="checkbox"/>	The post registration change does not require prior approval
<b>Revised PDD</b>																				
<b>Rev. of PDD:</b> Check whether the changes have been fully addressed in a revised PDD.	<input type="checkbox"/>	The changes have correctly been reflected in the revised PDD.																		
	<input type="checkbox"/>	A revision of the PDD is not required (in case of temp. changes).																		
	<input type="checkbox"/>	The revised PDD has been forwarded in (i) track-change and (ii) clean version.																		
<b>Prior Approval</b>																				
<b>Prior approval:</b> Assess whether the change requires prior approval of the board	<input type="checkbox"/>	The post registration change requires prior approval																		
	<input type="checkbox"/>	The post registration change does not require prior approval																		

### D.3. Corrections

<b>Means of validation</b>	<b>Description of post registration change</b>			
	<b>Start Date:</b> Please provide the start date of the change	01/01/2013	<b>End Date:</b> Please provide the end date of the change, if applicable	31/12/2023
	<b>Description:</b> Please give a detailed description of the change(s)	In section B.7.2 under Quality control and Quality assurance the first word in first sentence is revised from "The metering equipment will be properly calibrated [...]" to "Relevant meter equipment will be properly calibrated [...]" as per technology provider and with general guidelines to SSC methodologies specifying at least once in three years.		
	<b>Assessment of post registration change – Corrections</b>			
	<b>Accuracy:</b> Please give a detailed assessment whether the deviation is likely to lead to a reduction in the accuracy of the ER calculation.	The change has no influence on the emission reductions. As the DFO meters will only have to be factory calibrated as be technology provider and no subsequent calibration is required the change in wording is considered correct and accurate.		
<b>Conservative-ness:</b> Please give a detailed assessment whether conservative assumptions or discount factors have	Not applicable			

	been applied to ensure that ER will not be overestimated.		
	<b>Appendix 1 PS:</b> Check if the changes fall under one of the scenarios of appendix 1 of the PS.	The correction falls under Point 1 of the Appendix 1 to PS as the correction does not affect the project design.	
<b>Findings</b>			
<b>Conclusion</b>			
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.			
<b>Revised PDD</b>			
<b>Rev. of PDD:</b> Check whether the changes have been fully addressed in a revised PDD.	<input checked="" type="checkbox"/>	The changes have correctly been reflected in the revised PDD.	
	<input type="checkbox"/>	A revision of the PDD is not required (in case of temp. changes).	
	<input checked="" type="checkbox"/>	The revised PDD has been forwarded in (i) track-change and (ii) clean version.	
<b>Prior Approval</b>			
<b>Prior approval:</b> Assess whether the change requires prior approval of the board	<input type="checkbox"/>	The post registration change requires prior approval	
	<input checked="" type="checkbox"/>	The post registration change does not require prior approval	

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

<b>Means of validation</b>	<b>Description of post registration change</b>			
	<b>Start Date:</b> Please provide the registered start date of the CP.	DD/MM/YYYY	<b>Revised Start Date:</b> Please provide the proposed revised start date of the CP	DD/MM/YYYY
	<b>Description:</b> Please give a detailed description /reasoning of the requested revision of CP starting date:	n.a.		
	<b>LDC:</b> Please check if the host country is an LDC. In case of LDCs the timeframes of the below defined categories are to be doubled.	<input type="checkbox"/>	The host country is a LDC	
		<input type="checkbox"/>	The host country is <b>not</b> a LDC	
	<b>Categories:</b> Please check under which category - as defined below – the requested changes fall. In case of LDCs the timeframes are to be doubled.	<input type="checkbox"/>	Category A: $> \pm 2 a$	
		<input type="checkbox"/>	Category B: $< \pm 1 a$ ; not before registration date	
		<input type="checkbox"/>	Category C: $(SD_{old} \pm 1 a) \leq SD_{new} \leq (SD_{old} \pm 2 a)$	
	<b>Assessment of post registration change</b>			
	<b>Cat. A: <math>&gt; \pm 2 a</math></b> Changes of start date of more than 2 years (4 years for LDCs) are not allowed as per the PS.	<input type="checkbox"/>	The change is a cat. A case. The change of the CP start date as requested by the PP is not allowed as per the PS. Thus a corresponding CAR has been raised.	
<b>Cat. B: <math>&lt; \pm 1 a</math></b> Prior notification is not required if changes of less than 1 year are	<input type="checkbox"/>	The change is a cat. B case. The proposed new CP start date differs less than $\pm 1$ 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		



	requested. The CP start date shall not be earlier than the date of the project registration.		not before the registration date of the PA. Thus a prior approval is not required.
	<b>Cat. B:</b> $\pm 1a < SD < \pm 2a$ 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 affected 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.	<input type="checkbox"/>	The change is a cat. C case.
		<input type="checkbox"/>	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.
		<input type="checkbox"/>	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 >
		<input type="checkbox"/>	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 >
<b>Findings</b>			
<b>Conclusion</b>	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.		
	<b>Revised PDD</b>		
	<b>Rev. of PDD:</b> Check whether the changes have been fully addressed in a revised PDD.	<input type="checkbox"/>	The changes have correctly been reflected in the revised PDD.
		<input type="checkbox"/>	A revision of the PDD is not required (in case of temp. changes).
		<input type="checkbox"/>	The revised PDD has been forwarded in (i) track-change and (ii) clean version.
	<b>Prior Approval</b>		
	<b>Prior approval:</b> Assess whether the change requires prior approval of the board	<input type="checkbox"/>	The post registration change requires prior approval
		<input type="checkbox"/>	The post registration change does not require prior approval

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

<b>Means of validation</b>	<b>Description of post registration change</b>			
	<b>Start Date:</b> Please provide the start date of the change	DD/MM/YYYY	<b>End Date:</b> Please provide the end date of the change, if applicable	DD/MM/YYYY
	<b>Description:</b> Please give a detailed description of the change(s)	n.a.		
	<b>Assessment of post registration change – Inclusion of a MP</b>			
	<b>MM compliance:</b> Please check in case of changes to the registered MP, whether they are in compliance with the MM.			

	<b>Later version of MM:</b> 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 affected.																				
	<b>Accuracy:</b> Please give a detailed assessment whether the deviation is likely to lead to a reduction in the accuracy of the ER calculation.																				
	<b>Conservativeness:</b> Please give a detailed assessment whether conservative assumptions or discount factors have been applied to ensure that ER will not be overestimated.																				
	<b>Appendix 1 PS:</b> Check if the changes fall under one of the scenarios of appendix 1 of the PS.																				
<b>Findings</b>																					
<b>Conclusion</b>	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.																				
	<table border="1"> <tr> <td colspan="3"><b>Revised PDD</b></td> </tr> <tr> <td rowspan="3"> <b>Rev. of PDD:</b>            Check whether the changes have been fully addressed in a revised PDD.         </td> <td><input type="checkbox"/></td> <td>The changes have correctly been reflected in the revised PDD.</td> </tr> <tr> <td><input type="checkbox"/></td> <td>A revision of the PDD is not required (in case of temp. changes).</td> </tr> <tr> <td><input type="checkbox"/></td> <td>The revised PDD has been forwarded in (i) track-change and (ii) clean version.</td> </tr> <tr> <td colspan="3"><b>Prior Approval</b></td> </tr> <tr> <td rowspan="2"> <b>Prior approval:</b>            Assess whether the change requires prior approval of the board         </td> <td><input type="checkbox"/></td> <td>The post registration change requires prior approval</td> </tr> <tr> <td><input type="checkbox"/></td> <td>The post registration change does not require prior approval</td> </tr> </table>			<b>Revised PDD</b>			<b>Rev. of PDD:</b> Check whether the changes have been fully addressed in a revised PDD.	<input type="checkbox"/>	The changes have correctly been reflected in the revised PDD.	<input type="checkbox"/>	A revision of the PDD is not required (in case of temp. changes).	<input type="checkbox"/>	The revised PDD has been forwarded in (i) track-change and (ii) clean version.	<b>Prior Approval</b>			<b>Prior approval:</b> Assess whether the change requires prior approval of the board	<input type="checkbox"/>	The post registration change requires prior approval	<input type="checkbox"/>	The post registration change does not require prior approval
<b>Revised PDD</b>																					
<b>Rev. of PDD:</b> Check whether the changes have been fully addressed in a revised PDD.	<input type="checkbox"/>	The changes have correctly been reflected in the revised PDD.																			
	<input type="checkbox"/>	A revision of the PDD is not required (in case of temp. changes).																			
	<input type="checkbox"/>	The revised PDD has been forwarded in (i) track-change and (ii) clean version.																			
<b>Prior Approval</b>																					
<b>Prior approval:</b> Assess whether the change requires prior approval of the board	<input type="checkbox"/>	The post registration change requires prior approval																			
	<input type="checkbox"/>	The post registration change does not require prior approval																			

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

<b>Means of validation</b>	Type of change(s):	<input checked="" type="checkbox"/>	Permanent Change from Monitoring Plan	
		<input type="checkbox"/>	Permanent Change from Monitoring Methodology	
	<b>Description of post registration change</b>			
	<b>Start Date:</b> Please provide the start date of the change	01/01/2013	<b>End Date:</b> Please provide the end date of the change, if applicable	31/12/2023
<b>Description:</b>	Update of the calibration frequency and procedure for DFO			

	Please give a detailed description of the change(s)	meters, parameter $FC_{DFO,m,y}$ from calibration according to the instructions [...] from the technology provider and in line with General Guidelines to SSC methodologies calibration once in three years to only calibration according to the instructions [...] from the technology provider.
	<b>Assessment of post registration change – Permanent changes from MP or MM</b>	
	<b>MM compliance:</b> Please check in case of changes to the registered MP, whether they are in compliance with the MM.	The methodology does not specify any calibration frequency regulation.
	<b>Later version of MM:</b> 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 affected.	Also the later version of the methodology do not specify any calibration frequency regulation. The initial monitoring plan has been prepared and submitted for registration when the General Guidance of SSC CDM Methodologies version 17 under §17 (c) required to measuring equipment to be calibrated according to the national standards and reference points or IEC standards and recalibrated at appropriate intervals according to manufacturer specifications, but at least once in three years. Current version 22.1 thereof does not request the same. The regulation has been incorporated into PS §65 (f) which requires “Specifications of the calibration frequency for the measuring equipments. In cases where neither the selected methodology and, where applicable, the selected standardized baseline, nor the Board’s guidance specify any requirements for calibration frequency for measuring equipments, project participants or the coordinating/managing entity shall ensure that the equipments are calibrated either <ul style="list-style-type: none"> <li>• in accordance with the local/national standards, or</li> <li>• as per the manufacturer’s specifications.</li> </ul> If local/national standards or the manufacturer’s specifications are not available, international standards may be used.” As there is no local/national standard for the calibration but a manufacturer specification is available. The manufacturer specification states that the equipment is “factory calibrated and does not normally need to be calibrated in the field”. Based on that the regulation of PS §65 (f) is fulfilled.
<b>Accuracy:</b> Please give a detailed assessment whether the deviation is likely to lead to a reduction in the accuracy of the ER calculation.	The initial and revised monitoring plan requires a monitoring equipment with accuracy of +/- 1% or better. DOE checked the related manufacturer manual/technical specification of the monitoring equipment actually installed, which has also been inspected during onsite visit, which refers to an accuracy of the flow meter of +/-0.15%. The installed flow meter is an coriolis flow meter which is generally due to its measurement principle very accurate and resistant against any drift or influence <sup>/MPC/</sup> . The technical specification further details that the related meter is factory calibrated and does not need to be calibrated in the field as per manufacturer specification. Based on the confirmation by technology provider that the meter does not need subsequent calibrations during operation DOE considers the updated calibration frequency as per revised monitoring plan adequate and correct. The DFO consumption on energy basis for the years 2013 and 2014 compared to the NG consumption is only 0.06% and	

		0.1%. The accuracy of the measurement and especially the final emission reductions is therefore considered to be not significantly reduced or affected.								
	<b>Conservative-ness:</b> Please give a detailed assessment whether conservative assumptions or discount factors have been applied to ensure that ER will not be overestimated.	Please refer to Accuracy above.								
	<b>Appendix 1 PS:</b> Check if the changes fall under one of the scenarios of appendix 1 of the PS.	The issue could fall under Point 5. (f) "Change of calibration frequency or practice for monitoring equipment as per the applied methodology or national standard;" Considering that the General Guidance has been meanwhile revised and the related requirement of once in three years has been removed. However prior approval is requested.								
<b>Findings</b>										
<b>Conclusion</b>		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.								
<b>Revised PDD</b> <table border="1"> <tr> <td rowspan="3"> <b>Rev. of PDD:</b>            Check whether the changes have been fully addressed in a revised PDD.         </td> <td><input checked="" type="checkbox"/></td> <td>The changes have correctly been reflected in the revised PDD.</td> </tr> <tr> <td><input type="checkbox"/></td> <td>A revision of the PDD is not required (in case of temp. changes).</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>The revised PDD has been forwarded in (i) track-change and (ii) clean version.</td> </tr> </table>				<b>Rev. of PDD:</b> Check whether the changes have been fully addressed in a revised PDD.	<input checked="" type="checkbox"/>	The changes have correctly been reflected in the revised PDD.	<input type="checkbox"/>	A revision of the PDD is not required (in case of temp. changes).	<input checked="" type="checkbox"/>	The revised PDD has been forwarded in (i) track-change and (ii) clean version.
<b>Rev. of PDD:</b> Check whether the changes have been fully addressed in a revised PDD.	<input checked="" type="checkbox"/>	The changes have correctly been reflected in the revised PDD.								
	<input type="checkbox"/>	A revision of the PDD is not required (in case of temp. changes).								
	<input checked="" type="checkbox"/>	The revised PDD has been forwarded in (i) track-change and (ii) clean version.								
<b>Prior Approval</b>										
<b>Prior approval:</b> Assess whether the change requires prior approval of the board		<input checked="" type="checkbox"/>	The post registration change requires prior approval							
		<input type="checkbox"/>	The post registration change does not require prior approval							

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

<b>Means of validation</b>	Type of change(s):	<input type="checkbox"/>	Changes to the project design	
		<input type="checkbox"/>	Changes to the PoA design	
	<b>Description of post registration change</b>			
	<b>Start Date:</b> Please provide the start date of the change	DD/MM/YYYY	<b>End Date:</b> Please provide the end date of the change, if applicable	DD/MM/YYYY
	<b>Description:</b> Please give a detailed description of the change(s)	n.a.		
	<b>Applicability and application of the Approved Baseline Methodology</b>			
<b>Description:</b> Please give a detailed description on how the changes affect the applicability and application of the approved Baseline				

	Methodology. Check if the actual changes would adversely affect the conclusions during validation.		
	Additionality assessment		
	<b>Description:</b> Please give a detailed description re-assessment of additionality, Check whether the actual changes would adversely affect the conclusions during validation. If required please make use of the assessment tables in the annex.		
	Scale of the Project activity		
	<b>Description:</b> Please give a detailed regarding the effect of the changes on the scale of the PA (i.e. LSC or SSC).		
	Revised PDD		
	<b>Rev. of PDD:</b> Check whether the changes have been fully addressed in a revised PDD. In this context pl. refer to <ul style="list-style-type: none"> <li>- Changes in the effect-tive output capacity.</li> <li>- Addition of components or extension of technology</li> <li>- In case of multiple site projects: Removal or addition of sites</li> <li>- Operational parameters under the control of PPs differing from expected parameters</li> <li>- Changes to the baseline Meth (e.g. addition of a new Meth or change of the BL scenario.</li> <li>- Effects with regards to B, C and D above incl. compliance with the MP and level of accuracy and completeness of monitoring.</li> </ul>	<input type="checkbox"/>	The post registration change has correctly been reflected in the revised PDD. This assessment is based on the following considerations:
<b>Findings</b>			
<b>Conclusion</b>	Based on the above the changes to the project design of a registered project activity are in accordance with applicable validation requirements related to the changes to the project design of a registered project activity in the VVS.		
	<b>Traceability:</b> Check if the PPs have provided a revised	<input type="checkbox"/>	The revised PDD has been forwarded in (i) track-change and (ii) clean version.

	PDD in both clean and track-change version.		
	<b>Prior approval:</b> Assess whether the change requires prior approval of the board	<input type="checkbox"/>	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.
		<input type="checkbox"/>	The post registration change requires prior approval.

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

<b>Means of validation</b>	n.a.
<b>Findings</b>	
<b>Conclusion</b>	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**

&gt;&gt;

Before submission of the final assessment report a technical review is carried out. The technical reviewer is a competent GHG auditor being appointed for the scope this project falls under. The technical reviewer is 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**

&gt;&gt;

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

Type of Change occurred	Total No. of changes	No. of changes which require prior approval
<input type="checkbox"/> Temporary deviations from the MP		
<input type="checkbox"/> Temporary deviations from the MM		
<input checked="" type="checkbox"/> Corrections that do not affect the project	1	
<input type="checkbox"/> Change to the start date of the crediting p.		
<input checked="" type="checkbox"/> Permanent changes from the MP	1	1
<input type="checkbox"/> Permanent changes from the MM		
<input type="checkbox"/> Design changes to the project activity / PoA		
<input type="checkbox"/> Changes specific to AR projects		

The above listed post registration changes require prior approval of the Board.

Essen, 2016-04-20



Essen, 2015-05-20



Saalmann, Martin  
TÜV NORD JI/CDM CP  
Assessment Team Leader

Winter, Rainer  
TÜV NORD JI/CDM CP  
Final Approval

## Appendix 1. Abbreviations

Abbreviations	Full texts
CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CO <sub>2</sub>	Carbon dioxide
CO <sub>2eq</sub>	Carbon dioxide equivalent
CL	Clarification Request
DVerR	Draft Verification Report
DUSUP	Dubai Supply Authority
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse gas(es)
IM	Interview Memo
MP	Monitoring Plan
MR	Monitoring Report
PA	Project Activity
PDD	Project Design Document
PP	Project Participant
QA/QC	Quality Assurance / Quality Control
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard
XLS	Emission Reduction Calculation Spreadsheet



## Appendix 2. Competence of team members and technical reviewers



### Statement of Competence

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

**Mr. Martin Saalmann**

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2018-11-10
J1	Senior Assessor Technical Reviewer	2018-11-10
VCS / ISO 14064-2	Senior Assessor Technical Reviewer	2018-11-10

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
13.1	Solid waste and wastewater

022 – Rev. 6, Date: 2015-11-11

022\_S01-VA050-F20\_2015-11-11\_rev6.doc

S01-VA050-F20 rev3 / 2012-10-25



### Statement of Competence

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

**Mr. Rainer Winter**

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2016-07-01
J1	Senior Assessor Technical Reviewer	2016-07-01
VCS / ISO 14064-2	Senior Assessor Technical Reviewer	2016-07-01

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA	TR SUBCATEGORIES
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	
11.2	Refrigerant gas production	
12.1	Chemical industry	
13.1	Solid waste and wastewater	

003 - Rev. 9, Date: 2015-05-18

003\_003\_S01-VA050-F20\_2015\_05\_18\_rev9.doc

S01-VA050-F20 rev3 / 2012-10-25



### Statement of Competence

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

**Mr. Stefan Winter**

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2017-07-27
VCS	Senior Assessor (Validation, Verification) Technical Reviewer	2017-07-27

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. 4, Date: 2015-01-05

163\_S01-VA050-F20\_2015-01-05\_rev4.doc

S01-VA050-F20 rev3 / 2012-10-25

## Appendix 3. Documents reviewed or referenced

No.	Author	Reference	Title	References to the document	Provider
1	UNFCCC	<b>/AMS/</b>	AMS II.B. Supply Side Energy Efficiency improvements – generation (Version 9)	<a href="http://cdm.unfccc.int/methodologies/DB/69MEFLV8HH6LBRAFQRAZ3XEF2BYTMG">http://cdm.unfccc.int/methodologies/DB/69MEFLV8HH6LBRAFQRAZ3XEF2BYTMG</a>	Other
2	DOE	<b>/CPM/</b>	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)		Other
3	IPCC	<b>/IPCC/</b>	2006 IPCC Guidelines for National Greenhouse Gas Inventories: work book	<a href="http://www.ipcc-nggip.iges.or.jp">www.ipcc-nggip.iges.or.jp</a>	Other
4	UNFCCC	<b>/KP/</b>	Kyoto Protocol (1997)	<a href="http://unfccc.int/kyoto_protocol/items/2830.php">http://unfccc.int/kyoto_protocol/items/2830.php</a>	Other
5	UNFCCC	<b>/MA/</b>	Decision 3/CMP. 1 (Marrakesh – Accords)	<a href="http://cdm.unfccc.int/Reference/COPMOP/index.html">http://cdm.unfccc.int/Reference/COPMOP/index.html</a>	Other
7	UNFCCC	<b>/PDD/</b>	Project Design Document for CDM project: “DEWA Chiller Station L” version 3, dated 14/11/2012 Project Design Document for CDM project: “DEWA Chiller Station L” version 4, dated 02/02/2016		Other
8	UNFCCC	<b>/PS/</b>	CDM Project Standard (Version 9.0)	<a href="http://cdm.unfccc.int/Reference/Standards/index.html">http://cdm.unfccc.int/Reference/Standards/index.html</a>	Other
9	PP	<b>/VAL/</b>	Validation Report for CDM project “DEWA Chiller Station L” version 03, dated 14/11/2012		Other
10	UNFCCC	<b>/VVS/</b>	CDM Validation and Verification Standard (Version 09.0)	<a href="http://cdm.unfccc.int/Reference/Standards/index.html">http://cdm.unfccc.int/Reference/Standards/index.html</a>	Other
11	UNFCCC	<b>/SAMPLE/</b>	“Guidelines for Sampling and Surveys for CDM Project Activities and Programme Activities” (Version 03.0) “Standard for Sampling and Surveys for CDM Project Activities and Programme Activities” (version 4.1)	<a href="https://cdm.unfccc.int/Reference/Guidclarif/index.html">https://cdm.unfccc.int/Reference/Guidclarif/index.html</a> <a href="http://cdm.unfccc.int/Reference/Standards/index.html">http://cdm.unfccc.int/Reference/Standards/index.html</a>	Other
12	UNFCCC	<b>/TA/</b>	<ul style="list-style-type: none"> <li>Tool to calculate project or leakage CO<sub>2</sub> emissions from</li> </ul>	<a href="http://cdm.unfccc.int/Reference/t">http://cdm.unfccc.int/Reference/t</a>	Other

			fossil fuel combustion Version 2 <ul style="list-style-type: none"> <li>• Tool to calculate baseline, project and/or leakage emissions from electricity consumption Version 1</li> <li>• Tool to calculate the emission factor for an electricity system Version 4.0</li> <li>• Tool to determine the mass flow of a greenhouse gas in a gaseous stream Version 2.0.0</li> </ul>	<a href="#">ools/index.html</a>	
13	UNFCCC	<b>/GOT/</b>	Glossary "CDM terms" (version 08.0)	<a href="https://cdm.unfccc.int/filestorage/e/x/t/extfile-20150226124447549-glos_CDM.pdf/glos_CDM.pdf?t=UmZ8bnFjODI3fDCW9A3vJwR03kQQh4sbLiYu">https://cdm.unfccc.int/filestorage/e/x/t/extfile-20150226124447549-glos_CDM.pdf/glos_CDM.pdf?t=UmZ8bnFjODI3fDCW9A3vJwR03kQQh4sbLiYu</a>	Other
14		<b>/CAL/</b>	Calibration certificates		PP
15	Related manufacturer	<b>/TS/</b>	Technical specification of DFO meter		PP
16	UNDP and Carbon Center of Excellence	<b>/MM/</b>	Manual for Monitoring CLEAN DEVELOPMENT MECHANISM PROJECT "DEWA CHILLER STATION L" ver 29102012 dated 20/01/2013		PP
17	Bureau Veritas	<b>/ISO/</b>	ISO9001, ISO14001 and ISO18001 certificate dated 05/09/2012 valid until 05/09/2015		PP
18	PP	<b>/LOG/</b>	Log sheets for data monitoring		PP
19	GEO CHEM Middle East and PP	<b>/REC/</b>	Fuel analysis records for DFO and NG for this monitoring period by supplier		PP
20	Dubai Supply Authority	<b>/LGF/</b>	Letter on set conditions of gas flow measurement dated 21/11/1996		PP
21	PP	<b>/XLS/</b>	Emission reduction calculation spreadsheet for years 2013 and 2014 version 1 dated 01/10/2015  Emission reduction calculation spreadsheet for years 2013 and 2014 version 1.1 dated 23/02/2016		PP
22	SCHWING Verfahrenstechnik	<b>/MPC/</b>	Mass flow measurement based on Coriolis principle	<a href="http://www.inelektro.de/P051a.pdf">http://www.inelektro.de/P051a.pdf</a>	DOE

	GmbH				
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## 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	1	Section no.		Date: 20/04/2016
Description of CAR				
<i>Clarify why not the latest template for PDD has been used when updating the monitoring plan.</i>				
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)

<input type="checkbox"/>	No financial parameters are used for additionality justification					
<input type="checkbox"/>	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
n.a.				//	<input type="checkbox"/>	
				//	<input type="checkbox"/>	
				//	<input type="checkbox"/>	
				//	<input type="checkbox"/>	
				//	<input type="checkbox"/>	
				//	<input type="checkbox"/>	
				//	<input type="checkbox"/>	

## Appendix 6. Assessment of Barrier Analysis

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

<input type="checkbox"/>	No barrier parameters are used for additionality justification			
<input type="checkbox"/>	Assessment of barriers see below			
Kind of Barrier (invest, tech, other)	Description of Barrier	Evidence used	Assessment of validation team	
			Appropriateness of information source	Explanation of final result
n.a.			<input checked="" type="checkbox"/>	
			<input checked="" type="checkbox"/>	
			<input checked="" type="checkbox"/>	
			<input checked="" type="checkbox"/>	
			<input checked="" type="checkbox"/>	
			<input checked="" type="checkbox"/>	
			<input checked="" type="checkbox"/>	

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**Document information**

<i>Version</i>	<i>Date</i>	<i>Description</i>
01.0	23 March 2015	Initial publication by UNFCCC
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**TÜV NORD Revision history**

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3.0	18.06.2015	Adoption of UNFCCC report template to TÜV NORD certification and quality system as well as TÜV NORDs reporting guidance
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