

Re Carbon Gözetim Denetim ve
Belgelendirme Ltd. Şti.

Prof. Dr. Aziz Sancar Cad.
27/6
TR / 06690 Çankaya-Ankara

Tel.: 0090-312-287 5122
Fax: 0090-312-287 3373

Standard Operation Procedure



Verification

Page: 1 / 30

Prepared by

Anıl Söyler
Certification Manager

Approved by

Christian Johannes
General Manager

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 2 / 30</p>	

1. Purpose

The purpose of this Standard Operation Procedure is to explain the procedures used for planning, executing and reporting of the verification activities in line with the Clean Development Mechanism (CDM) criteria and requirements and to define the duties and responsibilities in this process.

2. Summary of the process

- 2.1. A verification plan is prepared by the Team Leader using the “**Assessment Planning Form**” and saved on the company’s main server.
- 2.2. The “**Assessment Planning Form**” is approved by the Certification Manager.
- 2.3. The “**Assessment Planning Form**” is sent to the project participant(s) by a team member for comments and further arrangements.
- 2.4. In case the project participant(s) do not have any objections, the Verification commences in accordance with the defined plan.
- 2.5. Verification is executed in line with the “**Verification Protocol**” and other reference documents.
- 2.6. Upon completion of the verification process, verification report including the verification protocol and opinion is prepared and Team Leader informs the Certification Manager (CM) and previously assigned Independent Technical Reviewer (ITR), who shall then conduct the technical review.
- 2.7. ITR shall inform CM when verification is finalized and the required corrections are applied to the report by the Team Leader in line with the independent technical review.
- 2.8. In case of a positive verification opinion, request for issuance is submitted by Certification Manager to the CDM Executive Board (CDM EB).

3. Definitions and Abbreviations

Please refer to “**DOE Glossary of Terms**”.

4. Health and safety warnings

All health and safety rules and procedures shall be followed at the project site during the verification on-site visit.

5. Application

5.1. Planning of verification activities

Upon signing of the contractual agreement with the project participants (PPs), the Team Leader shall conduct a preliminary assessment of the available project documentation and prepare the “**Assessment Planning Form**” with detailed indication of the man/hours required for different tasks assigned to each team member in line with his professional experience and judgement, potential complications and/or number of sites/units.

Timeline identified in the contractual agreement and submitted to PPs by the Sales Manager-Carbon is included into the “**Assessment Planning Form**” by the Team Leader and the required man-hours are

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 3 / 30</p>	

allocated among the team members.

Timeline in the contract is identified in line with the “**Generic Service Timeline Procedure**” and the details are given in this procedure.

If the Team Leader and other team members require more or less time than the one defined in this time line, Team Leader shall provide justification for all differences in the “**Assessment Planning Form**”.

5.1.1. Sampling

5.1.1.1. Sampling requirements for the verification of monitoring data/parameters’ records of small and large scale project activities and component project activities (CPAs)

The required confidence interval for small scale project activities and CPAs is 90%, whereas that of large scale project activities and CPAs is 95% in line with the latest versions of “Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities” and “Guidelines for Sampling and Surveys for CDM Project Activities And Programme of Activities”.

The sampling requirements for the verification of monitoring data/parameters’ records of small and large scale project activities and CPAs are determined by the Team Leader through “**Assessment Planning Form**” according to the monitoring frequency and/or monitoring recording period of the monitoring data/parameter depending on the type of the methodology.

If the monitoring frequency and/or monitoring recording period of the monitoring data/parameter depending on the type of the methodology are **at least monthly and/or less frequent**, then 100% verification of the related monitoring data/parameter records are required to be executed by the verification team.

Whereas, if the monitoring frequency and/or monitoring recording period of the monitoring data/parameter depending on the type of the methodology is **more frequent than monthly period (e.g. daily or weekly)**, the sampling approach can be implemented by the verification team depending on the type and homogeneity of the monitoring data and “**Sampling Guidance**” can be utilized.

If the monitoring frequency and monitoring recording period are different (e.g. continuous measurement and monthly recording) in the related methodology, the monitoring recording period is taken into consideration by the verification team.

5.1.1.1.1. Simple random sampling approach

If there is very little heterogeneity or if there is homogeneity in the project or CPA monitoring data/parameter being sampled, the simple random sampling approach can be followed by the verification team and the following formula 1 shall be used by the team for the small scale project activities and formula 2 for the large scale project activities, respectively.

$$n \geq \frac{1.645^2 \times N \times V}{((N - 1) \times 0.1^2) + (1.645^2 \times V)}$$

(1)

$$V = \frac{p(1 - p)}{p^2}$$

n: Sample size

N: Total number of monitoring data/parameter records

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 4 / 30</p>	

p: Estimated proportion of monitoring data/parameter records that are available¹
1.645: Represents the 90% confidence required
0.1: Represents the 10% relative precision

$$n \geq \frac{1.96^2 \times N \times V}{((N - 1) \times 0.1^2) + (1.96^2 \times V)} \quad (2)$$

$$V = \frac{p(1 - p)}{p^2}$$

n: Sample size
N: Total number of monitoring data/parameter records
p: Estimated proportion of monitoring data/parameter records that are available¹
1.96: Represents the 95% confidence required
0.1: Represents the 10% relative precision

5.1.1.1.2. Stratified random sampling approach

If there is heterogeneity in the project or CPA monitoring data/parameter records being sampled, the stratified random sampling approach can be followed by the verification team and the following formula 3 shall be used by the team for the small scale project activities and formula 4 for the large scale project activities, respectively.

$$n \geq \frac{1.645^2 \times N \times V}{((N - 1) \times 0.1^2) + (1.645^2 \times V)} \quad (3)$$

$$V = \frac{SD^2}{\bar{p}^2}$$

$$SD^2 = \frac{(g_a \times p_a (1 - p_a)) + (g_b \times p_b (1 - p_b)) + (g_c \times p_c (1 - p_c)) + \dots + (g_k \times p_k (1 - p_k))}{N}$$

$$\bar{p} = \frac{(g_a \times p_a) + (g_b \times p_b) + (g_c \times p_c) + \dots + (g_k \times p_k)}{N}$$

n: Sample size
g_i: Size of the ith group (district) where i=1,...,k
N: Total number of monitoring data/parameter records
SD: Overall variance of the monitoring data/parameter records
 \bar{p} : Expected overall proportion of the available monitoring data/parameter records to the total number of monitoring data/parameter records
p_i: Expected proportion of the ith group (district) in the total group (district), where i=a,...,k (i. grubun toplam gruba tahmini oranı, i a'dan k'ya kadar)

¹ If it is expected that almost all monitoring data/parameter records are available at the time of verification, the proportion should be taken as 90%.
If the proportion of monitoring data/parameter records that are available can't be estimated by the verification team, then 50% value should be used to be in the safe side.

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 5 / 30</p>	

$$n \geq \frac{1.96^2 \times N \times V}{((N - 1) \times 0.1^2) + (1.96^2 \times V)} \quad (4)$$

$$V = \frac{SD^2}{\bar{p}^2}$$

$$SD^2 = \frac{(g_a \times p_a (1 - p_a)) + (g_b \times p_b (1 - p_b)) + (g_c \times p_c (1 - p_c)) + \dots + (g_k \times p_k (1 - p_k))}{N}$$

$$\bar{p} = \frac{(g_a \times p_a) + (g_b \times p_b) + (g_c \times p_c) + \dots + (g_k \times p_k)}{N}$$

n: Sample size

g_i: Size of the ith group (district) where i=1,...,k

N: Total number of monitoring data/parameter records

SD: Overall variance of the monitoring data/parameter records

\bar{p} : Expected overall proportion of the available monitoring data/parameter records to the total number of monitoring data/parameter records

p_i: Expected proportion of the ith group (district) in the total group (district), where i=a,...,k

5.1.1.1.3. Cluster sampling approach

If the monitoring data/parameter records of the project activity or CPA being sampled are available in the different geographical locations, the cluster sampling approach can also be followed by the verification team and the following formula 5 can be used by the team for the small scale project activities and formula 6 for the large scale project activities, respectively.

$$n \geq \frac{1.645^2 \times N \times V}{((N - 1) \times 0.1^2) + (1.645^2 \times V)} \quad (5)$$

$$V = \frac{SD^2}{\bar{p}^2}$$

$$\bar{p} = \frac{\sum_{i=1}^n p_i}{n}$$

$$SD^2 = \frac{1}{n - 1} \sum_{i=1}^n (p_i - \bar{p})^2$$

c: Cluster size for sampling

n: Number of clusters examined

N: Total number of monitoring data/parameter records

1.645: Represents the 90% confidence required

0.1: Represents the 10% relative precision

SD: Overall variance of the monitoring data/parameter records

\bar{p} : Expected overall proportion of the available monitoring data/parameter records to the total number of monitoring data/parameter records

p_i: Expected proportion of the ith group (district) in the total group (district), where i=a,...,k

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 6 / 30</p>	

$$n \geq \frac{1.96^2 \times N \times V}{((N - 1) \times 0.1^2) + (1.96^2 \times V)} \quad (6)$$

$$V = \frac{SD^2}{\bar{p}^2}$$

$$\bar{p} = \frac{\sum_{i=1}^n p_i}{n}$$

$$SD^2 = \frac{1}{n-1} \sum_{i=1}^n (p_i - \bar{p})^2$$

c: Cluster size for sampling

n: Number of clusters examined

N: Total number of monitoring data/parameter records

1.96: Represents the 95% confidence required

0.1: Represents the 10% relative precision

SD: Overall variance of the monitoring data/parameter records

\bar{p} : Expected overall proportion of the available monitoring data/parameter records to the total number of monitoring data/parameter records

p_i : Expected proportion of the *i*th group (district) in the total group (district), where $i=a, \dots, k^1$

In case of cluster sampling, every record in a sample of *n* clusters from the population shall be examined by the verification team.

5.1.1.1.4. Multi stage sampling approach

If the sampling from a number of groups, and then sampling of records within each group are required for the monitoring data/parameters' records of the project activity or CPA (For example, if the project activity is a cookstove project, if there are 120 villages in which there are available monitoring data/parameters' records, and there are on average 50 households within each village, 10 records of which it is planned to be sampled for these households), the multi stage sampling approach can also be followed by the verification team and following formula 7 can be used by the team for the small scale project activities and formula 8 for the large scale project activities, respectively.

$$c \geq \frac{\left(SD_B^2 \times \frac{M}{M-1} \right) + \left(\frac{1}{\bar{u}} \times \frac{SD_W^2}{\bar{p}^2} \times \frac{(\bar{N} - \bar{u})}{(\bar{N} - 1)} \right)}{\left(\frac{0.1^2}{1.645^2} \right) + \left(\frac{1}{M-1} \times \frac{SD_B^2}{\bar{p}^2} \right)} \quad (7)$$

$$\bar{p} = \frac{\sum_{i=1}^n p_i}{n}$$

$$SD_B^2 = \frac{1}{n-1} \sum_{i=1}^n (p_i - \bar{p})^2$$

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 7 / 30</p>	

$$SD_W^2 = \frac{\sum_{i=1}^n SD_{Wi}^2}{n}$$

c: Cluster size for sampling

M: Total number of monitoring data/parameter records

\bar{u} : Number of monitoring data/parameter records to be sampled within each group

\bar{N} : Average number of monitoring data/parameter records per group

SD_B^2 : Unit variance

SD_W^2 : Average of the group variances

\bar{p} : Expected overall proportion of the available monitoring data/parameter records to the total number of monitoring data/parameter records

1.645: Represents the 90% confidence required

0.1: Represents the 10% relative precision

$$c \geq \frac{\left(SD_B^2 \times \frac{M}{M-1} \right) + \left(\frac{1}{\bar{u}} \times \frac{SD_W^2}{\bar{p}^2} \times \frac{(\bar{N} - \bar{u})}{(\bar{N} - 1)} \right)}{\left(\frac{0.1^2}{1.96^2} \right) + \left(\frac{1}{M-1} \times \frac{SD_B^2}{\bar{p}^2} \right)}$$

(8)

$$\bar{p} = \frac{\sum_{i=1}^n p_i}{n}$$

$$SD_B^2 = \frac{1}{n-1} \sum_{i=1}^n (p_i - \bar{p})^2$$

$$SD_W^2 = \frac{\sum_{i=1}^n SD_{Wi}^2}{n}$$

c: Cluster size for sampling

M: Total number of monitoring data/parameter records

\bar{u} : Number of monitoring data/parameter records to be sampled within each group

\bar{N} : Average number of monitoring data/parameter records per group

SD_B^2 : Unit variance

SD_W^2 : Average of the group variances

\bar{p} : Expected overall proportion of the available monitoring data/parameter records to the total number of monitoring data/parameter records

1.96: Represents the 95% confidence required

0.1: Represents the 10% relative precision

5.1.1.1.5. Systematic sampling

If there is a need for sampling of nth record in the project activity or CPA (For example, if the project activity is a cookstove project and if there is a need to sample each 100th cookstove's records) the systematic sampling approach can be followed by the verification team and following formula 9 can be used by the team for the small scale project activities and formula 10 for the large scale project activities, respectively.

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 8 / 30</p>	

$$n \geq \frac{1.645^2 \times V}{0.1^2} \quad (9)$$

$$V = \left(\frac{SD}{Mean} \right)^2$$

n: Sample size
SD: Standard deviation (Pre-determined value)
Mean: Average value for the examined item
1.645: Represents the 90% confidence required

$$n \geq \frac{1.96^2 \times V}{0.1^2} \quad (10)$$

$$V = \left(\frac{SD}{Mean} \right)^2$$

n: Sample size
SD: Standard deviation (Pre-determined value)
Mean: Average value for the examined item
1.96: Represents the 95% confidence required

The sample size is determined by the verification team according to the calculations handled depending on the sampling approach and “**Sampling Guidance**” can be utilized for that.

Additionally, if it is expected that the response rate from the determined sample group is lower, the sample size shall be increased accordingly. (For example, if the project activity is a cookstove project with a sample size of 200 and the expected response rate from the households is 80%, then the final sample size would be $200 / 0.8 = 250$).

5.1.1.2. Sampling requirements for the verification of project implementation of small and large scale project activities and component project activities (CPAs)

The required confidence interval for small scale project activities and CPAs is 90%, whereas that of large scale project activities and CPAs is 95%.

The sampling requirements are determined by the Team Leader through “**Assessment Planning Form**” according to the number of output generation units and their associated units for project activities or CPAs.

If there are 20 or less output (electricity, heat etc.) generation units (e.g. wind turbine, water turbine etc.) and their associated units in the project activity or CPA, then 100% verification of the related units in the mentioned project activity or CPA is required to be executed by the verification team.²

Whereas, if there are more than 20 output (electricity, heat etc.) generation units (e.g. wind turbine, water turbine etc.) as total and/or separately in the project activity or CPA, the sampling approach is implemented by the verification team depending on the type and homogeneity of the project or CPA output generation units and “Sampling Guidance**” can be utilized.**

² One output generation unit and its associated unit(s) are deemed as one unit. For example, turbine and all associated equipment/structures (reservoir, diversion tunnel, penstock etc.) are deemed as one unit in hydro projects.

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 9 / 30</p>	

5.1.1.2.1. Simple random sampling approach

If there is very little heterogeneity or if there is homogeneity in the project output generation units being sampled, the simple random sampling approach can followed by the verification team and the following formula 1 shall be used by the team for the small scale project activities and formula 2 for the large scale project activities, respectively.

$$n \geq \frac{1.645^2 \times N \times V}{((N - 1) \times 0.1^2) + (1.645^2 \times V)} \quad (1)$$

$$V = \frac{p(1 - p)}{p^2}$$

n: Sample size

N: Total number of project output generation units

p: Estimated proportion of project output generation units that are in operation ³

1.645: Represents the 90% confidence required

0.1: Represents the 10% relative precision

$$n \geq \frac{1.96^2 N \times p(1 - p)}{((N - 1) \times 0.1^2 \times p^2) + (1.96^2 p(1 - p))} \quad (2)$$

n: Sample size

N: Total number of project output generation units

p: Estimated proportion of project output generation units that are in operation

1.96: Represents the 95% confidence required

0.1: Represents the 10% relative precision

5.1.1.2.2. Stratified random sampling approach

If there is heterogeneity in the project output generation units being sampled, the stratified random sampling approach can be followed by the verification team and the following formula 3 shall be used by the team for the small scale project activities and formula 4 for the large scale project activities, respectively.

$$n \geq \frac{1.645^2 \times N \times V}{((N - 1) \times 0.1^2) + (1.645^2 \times V)} \quad (3)$$

$$V = \frac{SD^2}{\bar{p}^2}$$

$$SD^2 = \frac{(g_a \times p_a(1 - p_a)) + (g_b \times p_b(1 - p_b)) + (g_c \times p_c(1 - p_c)) + \dots + (g_k \times p_k(1 - p_k))}{N}$$

³ If it is expected that almost all project output generation units are available at the time of verification, the proportion should be taken as 90%.

If the proportion of project output generation units that are available can't be estimated by the verification team, then 50% value should be used to be in the safe side.

Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti. Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	Page: 10 / 30	

$$\bar{p} = \frac{(g_a \times p_a) + (g_b \times p_b) + (g_c \times p_c) + \dots + (g_k \times p_k)}{N}$$

n: Sample size

g_i: Size of the *i*th group (district) where *i*=1,...,k

N: Total number of project output generation units

SD: Overall variance of the project output generation units

\bar{p} : Expected overall proportion of the project output generation units that are in operation to the total number of project output generation units

p_i: Expected proportion of the *i*th group (district) in the total group (district), where *i*=a,...,k

1.645: Represents the 90% confidence required

$$n \geq \frac{1.96^2 \times N \times V}{((N - 1) \times 0.1^2) + (1.96^2 \times V)} \quad (4)$$

$$V = \frac{SD^2}{\bar{p}^2}$$

$$SD^2 = \frac{(g_a \times p_a (1 - p_a)) + (g_b \times p_b (1 - p_b)) + (g_c \times p_c (1 - p_c)) + \dots + (g_k \times p_k (1 - p_k))}{N}$$

$$\bar{p} = \frac{(g_a \times p_a) + (g_b \times p_b) + (g_c \times p_c) + \dots + (g_k \times p_k)}{N}$$

n: Sample size

g_i: Size of the *i*th group (district) where *i*=1,...,k

N: Total number of project output generation units

SD: Overall variance of the project output generation units

\bar{p} : Expected overall proportion of the project output generation units that are in operation to the total number of monitoring data/parameter records

p_i: Expected proportion of the *i*th group (district) in the total group (district), where *i*=a,...,k

1.96: Represents the 95% confidence required

5.1.1.2.3. Cluster sampling approach

If the output generation units of the project activity being sampled are located in different geographical locations, the cluster sampling approach can also be followed by the verification team and the following formula 5 can be used by the team for the small scale project activities and formula 6 for the large scale project activities, respectively.

$$n \geq \frac{1.645^2 \times N \times V}{((N - 1) \times 0.1^2) + (1.645^2 \times V)} \quad (5)$$

$$V = \frac{SD^2}{\bar{p}^2}$$

$$\bar{p} = \frac{\sum_{i=1}^n p_i}{n}$$

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 11 / 30</p>	

$$SD^2 = \frac{1}{n-1} \sum_{i=1}^n (p_i - \bar{p})^2$$

c: Cluster size for sampling

n: Number of clusters examined

N: Total number of project output generation units

SD: Overall variance of the project output generation units

\bar{p} : Expected overall proportion of the project output generation units that are in operation to the total number of project output generation units

p_i : Expected proportion of the *i*th group (district) in the total group (district), where *i*=a,...,k

1.645: Represents the 90% confidence required

0.1: Represents the 10% relative precision

$$n \geq \frac{1.96^2 \times N \times V}{((N-1) \times 0.1^2) + (1.96^2 \times V)}$$

(6)

$$V = \frac{SD^2}{\bar{p}^2}$$

$$\bar{p} = \frac{\sum_{i=1}^n p_i}{n}$$

$$SD^2 = \frac{1}{n-1} \sum_{i=1}^n (p_i - \bar{p})^2$$

c: Cluster size for sampling

n: Number of clusters examined

N: Total number of project output generation units

SD: Overall variance of the project output generation units

\bar{p} : Expected overall proportion of the project output generation units that are in operation to the total number of project output generation units

p_i : Expected proportion of the *i*th group (district) in the total group (district), where *i*=a,...,k

1.96: Represents the 95% confidence required

0.1: Represents the 10% relative precision

In case of cluster sampling, every unit in a sample of *n* clusters from the population shall be examined by the verification team.

5.1.1.2.4. Multi stage sampling approach

If the sampling from a number of groups, and then sampling of units within each group are required for the output generation units of the project activity (For example, if the project activity is a cookstove project, if there are 120 villages to which the cookstoves are distributed, and there are on average 50 households within each village, of which it is planned to be sampled 10), the multi stage sampling approach can also be followed by the verification team and following formula 7 can be used by the team for the small scale project activities and formula 8 for the large scale project activities, respectively.

$$c \geq \frac{\left(SD_B^2 \times \frac{M}{M-1} \right) + \left(\frac{1}{\bar{u}} \times \frac{SD_W^2}{\bar{p}^2} \times \frac{(\bar{N} - \bar{u})}{(\bar{N} - 1)} \right)}{\left(\frac{0.1^2}{1.645^2} \right) + \left(\frac{1}{M-1} \times \frac{SD_B^2}{\bar{p}^2} \right)} \quad (7)$$

$$\bar{p} = \frac{\sum_{i=1}^n p_i}{n}$$

$$SD_B^2 = \frac{1}{n-1} \sum_{i=1}^n (p_i - \bar{p})^2$$

$$SD_W^2 = \frac{\sum_{i=1}^n SD_{Wi}^2}{n}$$

c: Cluster size for sampling

M: Total number of project output generation units

\bar{u} : Number of project output generation units to be sampled within each group

\bar{N} : Average number of project output generation units per group

SD_B^2 : Unit variance

SD_W^2 : Average of the group variances

\bar{p} : Expected overall proportion of the project output generation units that are in operation to the total number of monitoring data/parameter records

1.645: Represents the 90% confidence required

0.1: Represents the 10% relative precision

$$c \geq \frac{\left(SD_B^2 \times \frac{M}{M-1} \right) + \left(\frac{1}{\bar{u}} \times \frac{SD_W^2}{\bar{p}^2} \times \frac{(\bar{N} - \bar{u})}{(\bar{N} - 1)} \right)}{\left(\frac{0.1^2}{1.96^2} \right) + \left(\frac{1}{M-1} \times \frac{SD_B^2}{\bar{p}^2} \right)} \quad (8)$$

$$\bar{p} = \frac{\sum_{i=1}^n p_i}{n}$$

$$SD_B^2 = \frac{1}{n-1} \sum_{i=1}^n (p_i - \bar{p})^2$$

$$SD_W^2 = \frac{\sum_{i=1}^n SD_{Wi}^2}{n}$$

c: Cluster size for sampling

M: Total number of project output generation units

\bar{u} : Number of project output generation units to be sampled within each group

\bar{N} : Average number of project output generation units per group

SD_B^2 : Unit variance

SD_W^2 : Average of the group variances

\bar{p} : Expected overall proportion of the project output generation units that are in operation to the total number of monitoring data/parameter records

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 13 / 30</p>	

1.96: Represents the 95% confidence required
0.1: Represents the 10% relative precision

5.1.1.2.5. Systematic sampling approach

If there is a need for sampling of nth unit or element in the project activity (For example, if the project activity is a cookstove project and if there is a need to sample each 100th cookstove) the systematic sampling approach can be followed by the verification team and following formula 9 can be used by the team for the small scale project activities and formula 10 for the large scale project activities, respectively.

$$n \geq \frac{1.645^2 \times V}{0.1^2} \quad (9)$$

$$V = \left(\frac{SD}{Mean} \right)^2$$

n: Sample size
SD: Standard deviation (Pre-determined value)
Mean: Average value for the examined item
1.645: Represents the 90% confidence required

$$n \geq \frac{1.96^2 \times V}{0.1^2} \quad (10)$$

$$V = \left(\frac{SD}{Mean} \right)^2$$

n: Sample size
SD: Standard deviation (Pre-determined value)
Mean: Average value for the examined item
1.96: Represents the 95% confidence required

The sample size is determined by the verification team according to the calculations handled depending on the sampling approach and “**Sampling Guidance**” can be utilized for that.

Additionally, if it is expected that the response rate from the determined sample group is lower, the sample size shall be increased accordingly. (For example, if the project activity is a cookstove project with a sample size of 200 and the expected response rate from the households is 80%, then the final sample size would be $200 / 0.8 = 250$).

5.2. Approval of the assessment plan

“**Assessment Planning Form**” prepared by the Team Leader is submitted to the Certification Manager for approval.

Certification Manager shall assess the prepared “**Assessment Planning Form**” by using his/her professional experience and judgement. If the plan is deemed as feasible and reasonable, he/she approves the form or request changes in case team members have not been allocated sufficient time for some of the tasks.

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
	<h2>Verification</h2>	<p>Page: 14 / 30</p>

If during the verification more time is required for any particular task due to the project specific and unforeseeable reasons, the revised “**Assessment Planning Form**” is submitted by the Team Leader to the Certification Manager by providing detailed justification.

In this case, Certification Manager shall consider the provided justification and approve the form or reject the request within 2 working days as soon as possible depending on the urgency of the situation (e.g. being verification team on the site in a remote location is a situation requiring urgent action in a short time), but not later than 2 working days.

The “**Assessment Planning Form**” is sent to the project participant(s) by a team member for comments and further arrangements following its approval process.

5.3. Executing the verification

5.3.1. Subcontracting

The usage of any subcontractor at Re Carbon Ltd. is not planned at current situation regarding to CDM verification activities.

However, if using of subcontractors is in question for the subjects that require specific technical expertise for the verification of CDM projects (e.g. the environmental issues like the settlement of baseline scenario and monitoring of emissions) and if Re Carbon Ltd. subcontracts to supplement internal resources in the future, the following principles will apply:

- Re Carbon Ltd. will be responsible for the outcomes of the subcontracted work to comply with the requirements specified in the CDM Modalities and Procedures, the decisions and clarifications of The Conference of the Parties (COP) and the CDM Executive Board
- Re Carbon Ltd. will ensure that the subcontracted entity meets the relevant requirements for verification functions in the latest version of “**CDM Accreditation Standard for Operational Entities**” and in other relevant documents.

5.3.2. Delegation of functions to the other sites

None of the CDM verification functions are delegated by Re Carbon Ltd. to any site. This is also confirmed in the “**Validation & Verification Policy**” available in Annex-1.

However an agreement is signed with Natural Power Consultants Ltd. for the provision of technical expert support, if needed.

5.3.3. Verification methods

The verification team applies standard auditing techniques to assess the quality of the information, including but not limited to:

Desk review, involving the following:

- A review of the data and information presented to verify their completeness
- A review of the monitoring plan and monitoring methodology, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 15 / 30</p>	

- An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions

On-site assessment, involving the following:

- An assessment of the implementation and operation of the project as per the registered PDD
- A review of information flows for generating, aggregating and reporting the monitoring parameters
- Interviews with relevant stakeholders and/or personnel to confirm that the operational and data collection procedures are implemented in accordance with the monitoring plan in the PDD
- A crosscheck between information provided in the monitoring report and data from other sources such as plant log books, inventories, purchase records or similar data sources
- A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PDD and the selected methodology
- A review of calculations and assumptions made in determining the GHG data and emission reductions
- An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

5.3.3.1. Quality of evidence

The assessment of the evidence by the verification team includes the following:

- Whether sufficient evidence is available, both in terms of frequency (time period between evidence) and in covering the full monitoring period
- The source and nature of the evidence (external or internal, oral or documented, etc.)
- If comparable information is available from sources other than that used in the monitoring report, then the verification team shall crosscheck the monitoring report against the other sources to confirm that the stated figures are correct.

5.3.4. Principles for verifying information provided by the project participants

5.3.4.1. Accurate

Checking for accuracy of information provided by the project participants requires the following:

- Minimizing bias and uncertainty in the measurement process and the processing of data for quantitative data and information
- Minimizing bias in favour of a particular result for non-quantitative information

5.3.4.2. Conservative

Information can be considered as conservative if the GHG emission reductions or removal enhancements of

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 16 / 30</p>	

a project activity are not overestimated.

5.3.4.3. Relevant

Information can be considered relevant if it ensures compliance with the CDM requirements and the quantification and reporting of emission reductions achieved by a project activity. Unnecessary data and assumptions that do not have an impact on the emission reductions are not considered as relevant.

5.3.4.4. Credible

Information can be considered credible if it is authentic and is able to inspire trust.

5.3.4.5. Reliable

Information can be considered reliable if the quality of evidence is accurate and credible and able to yield the same results on a repeated basis.

5.3.4.6. Complete

Completeness refers to inclusion of all relevant information for assessment of GHG emissions reductions and the information supporting the methods applied as required.

5.3.4.7. Consistency

Consistency is achieved by the following:

- Applying uniform criteria to the requirements of the applicable approved methodology throughout the crediting period(s),
- Applying uniform criteria among project activities with similar characteristics such as a similar application of the approved methodology, use of technology, time period or region,
- Applying uniform criteria to expert judgements, over time and among projects.
- The principle of consistency doesn't prevent verification team from applying the most recent decisions and guidance provided by the CDM Executive Board.

5.3.4.8. Transparency

Information in the verification reports are presented in an open, clear, factual, neutral and coherent manner based on documentary evidence.

Transparency requires the following:

- Clearly and explicitly state and document all assumptions,
- Clearly reference background material,
- Clearly identify changes made to documentation.

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 17 / 30</p>	

5.3.5. Verification approach

The verification/certification activities are carried out adhering to the principles listed below and impartiality and confidentiality principles are pledged in all agreements:

- Impartiality (decisions are based on objective evidence obtained through the verification processes and not influenced by other interests or parties)
- Competence (to employ personnel with the necessary skills, experience, training and capacity to effectively complete verification activities)
- Independence (not to have a conflict of interest and/or organic relationship with the project being verified and/or the project proponent)
- Factual approach (verification opinion is based on objective evidence and findings)
- Openness (sharing of current and correct information regarding the verification activities with the project proponent, stakeholders and intended user)
- Confidentiality (confidential information obtained during verification activities is safeguarded and not inappropriately disclosed)

In case project activity consists of multiple operating output (e.g. electricity, heat etc.) generation units located apart from each other (e.g. wind turbines, cook stoves etc.), the verification team has to confirm physical presence of 100% of those units, unless:

- Sampling approach is required as defined in Section 5.1.1.
- Physical access to some of the units is demonstrably impossible (e.g. due to health and safety risk for the team, in this case evidence must be included into the report.)

In addition to the monitoring documentation provided by the project participants, the verification team reviews the following:

- The registered PDD and the monitoring plan, including any approved revised monitoring plan and/or changes from the registered PDD, and the corresponding validation opinion, if any;
- The validation report;
- Previous verification reports, if any
- The applied monitoring methodology;
- Standardized monitoring report template (to confirm the compliance of the submitted monitoring report)
- Relevant decisions, clarifications and guidance from the COP and the CDM Executive Board;
- Any other information and references relevant to the project activity's resulting emission reductions (e.g. IPCC reports, data on electricity generation in the national grid or laboratory analysis and national regulations);

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 18 / 30</p>	

- The forward action requests issued during the validation or previous verification(s), if any

5.3.5.1. Confidentiality

In accordance with the CDM requirements, Re Carbon Ltd. safeguards the confidentiality of all information obtained or created during verification activities and this is confirmed through “**Validation & Verification Policy**” available in Annex-1.

Similarly, annual risk analysis is carried out to satisfy the confidentiality regarding verification activities and results are recorded with the “**Carbon Department Risk Analysis Form**”.

The confidentiality statements in line with the confidentiality policy of Re Carbon Ltd. are issued in all contracts of personnel (including verification team) involved in verification activities.

Re Carbon Ltd. guarantees that information belonging to PPs will remain strictly confidential as per confidentiality agreement in the verification sales agreements and information will not be disclosed to a third-party without written consent by the project participant(s).

Furthermore, no one is permitted to reproduce or make copies of any project participants’ records, reports or documents without management’s approval. As stated in “**Validation & Verification Policy**” in Annex-1, in case any document belonging to the project participant(s) needs to be published in publicly accessible environment, written permission is obtained from the project participant(s).

Information obtained from the CDM project participants marked as proprietary or confidential isn’t disclosed without the written consent of the provider of the information, except as required by national law.

However, information used to determine additionality as defined in paragraph 43 of Decision 3/CMP.1, to describe the baseline methodology and its application, and to support an environmental impact assessment referred to in paragraph 37 (c) of the same, isn’t considered proprietary or confidential and is made publicly available.

Additionally, all verification records are kept in a restricted accessible companys server and are backed up automatically on a daily basis.

5.3.6. Verification of specific requirements

The verification team shall assess whether:

- i. Project is implemented and operated in accordance with the registered or approved revised PDD, including all monitoring and metering equipment;
- ii. Monitoring report and supporting documents are complete and verifiable
- iii. Monitoring practices are in compliance with the latest valid monitoring plan and applicable methodology and tool(s)
- iv. Measuring equipment is calibrated with required frequency
- v. Data is recorded and stored as per methodology and monitoring plan
- vi. GHG emission reductions are calculated in line with the applied approved methodology

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 19 / 30</p>	

5.3.6.1. Project implementation in accordance with the registered PDD

5.3.6.1.1. Requirement to be verified

The verification team assesses the conformity of the actual project and its operation with the registered PDD and determine whether:

- The implementation and operation of the project activity is in accordance with the registered PDD; or
- Any deviation or the proposed or actual changes in the implementation or operation of the project activity comply with the requirements of the “**Project Standard**”

5.3.6.1.2. Means of verification

The verification team, by means of an on-site visit, assesses that all physical features of the CDM project proposed in the registered PDD are in place and that the project participants has operated the CDM project activity as per the registered or approved revised PDD.

Therefore, the on-site visit is one of the follow-up actions and the following team members shall participate to the site visit:

- The team leader of the project
- The team member(s) qualified in the technical area(s) of the CDM project activity being verified/certified

If the Team Leader of the project is also qualified in the technical area(s) of the project activity, s(he) can participate to the site visit alone.

On-site assessment shall be conducted as part of verification activities for every project activity, unless there are project-specific conditions, which allow drawing the verification opinion without visiting the site. Such conditions shall be communicated by the Team Leader to Certification Manager in writing, who shall take the final decision on the matter.

If the verification team is informed by project participants prior to verification or identifies during the verification that the implementation or operation of CDM project does not conform to the description contained in the registered or approved revised PDD, the verification team shall proceed in accordance with the relevant section of the “**Project Handling Procedure**”.

5.3.6.2. Compliance of the monitoring plan with the monitoring methodology

The monitoring plan of the CDM project should comply with the applied methodology, including related tools.

5.3.6.2.1. Means of verification

The verification team shall confirm that the monitoring plan is in accordance with the approved monitoring methodology.

For monitoring aspects that are not specified in the methodology, particularly in the case of small-scale methodologies (e.g. additional monitoring parameters, monitoring frequency and calibration frequency), the verification team shall pay attention to the aspects, which may enhance the level of accuracy and completeness of the monitoring plan.

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 20 / 30</p>	

5.3.6.3. Compliance of monitoring activities with the monitoring plan

5.3.6.3.1. Requirement to be verified

Monitoring of reductions in GHG emissions resulting from the CDM project must be implemented in accordance with the monitoring plan contained in the registered PDD or the accepted revised monitoring plan.

5.3.6.3.2. Means of verification

The verification team shall determine whether:

- The monitoring plan and applied methodology has been properly implemented and followed by the project participants
- All parameters stated in the monitoring plan and relevant CDM Executive Board decisions have been monitored and updated as applicable, including:
 - Project emission parameters
 - Baseline emission parameters
 - Leakage parameters
 - Management and operational system (the responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan)
- The equipment used for monitoring is in accordance with section 5.3.6.4 and is controlled and calibrated in accordance with the monitoring plan, the applied methodology, the guidance by CDM Executive Board, local/national standards, or as per the manufacturer's specification;
- Monitoring results are consistently recorded as per approved frequency;
- Quality assurance and quality control procedures have been applied in accordance with the monitoring plan.

5.3.6.4. Compliance with the calibration frequency requirements for measurement equipment

5.3.6.4.1. Requirement to be verified

The verification team determines whether the calibration of the measuring equipment that have an impact on the claimed emission reductions is conducted by the project participants at a frequency specified in the applied monitoring methodology and/or the monitoring plan.

5.3.6.4.2. Means of verification

If during verification of a certain monitoring period, the verification team identifies that the calibration has been delayed and the calibration has been implemented after the monitoring period in consideration (i.e. the results of delayed calibration are available), the verification team may conclude its verification, provided the following conservative approach is adopted in the calculation of emission reductions:

- Applying the maximum permissible error of the instrument to the measured values taken during the period between the scheduled date of calibration and the actual date of calibration, if the results of the delayed calibration do not show any errors in the measuring equipment, or if the error is smaller

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 21 / 30</p>	

than the maximum permissible error; or

- Applying the error identified in the delayed calibration test, if the error is beyond the maximum permissible error of the measuring equipment

The verification team shall confirm that the error has been applied in the following manner:

- In a conservative manner, such that the adjusted measured values of the delayed calibration shall result in fewer claimed emission reductions;
- For all measured values taken during the period between the scheduled date of calibration and the actual date of calibration.

In cases where the results of the delayed calibration are not available, or the calibration has not been conducted at the time of verification, the verification team, prior to finalizing verification, requests the project participants to conduct the required calibration and determines whether the project participants have calculated the emission reductions conservatively using the approach mentioned in above.

In cases where it is not possible for the project participants to conduct the calibration at a frequency specified by either the applied methodology, guidance provided by the CDM Executive Board, and/or the registered monitoring plan due to reasons beyond the control of project participants (e.g. the contractual terms between the project participant and purchasing/selling entities) the verification team shall act in line with the **“Project Handling Procedure”**.

In cases where the monitoring methodology and the monitoring plan don't specify any requirements for calibration frequency of the measuring equipments, the verification team determines whether the equipments are calibrated either in accordance with the specifications of the local/national standards, or as per the manufacturer's specification. If local/national standards and the manufacturer's specification aren't available, international standards may be used.

5.3.6.5. Assessment of data and calculation of greenhouse gas emission reductions

5.3.6.5.1. Requirement to be verified

GHG emission reductions achieved by/resulting from the CDM project activity should be calculated applying the selected methodology.

5.3.6.5.2. Means of verification

The verification team determines the following:

- Complete set of data for the specified monitoring period is available. If only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, the verification team shall either raise a CAR for the PP to comply with the Appendix 1 of the Project Standard or request for deviation from the monitoring plan shall be submitted by the Certification Manager to UNFCCC Secretariat in line with the **“Project Handling Procedure”** prior to submitting request for issuance, if appropriate,
- The information provided in the monitoring report has been cross-checked with other sources such as plant log books, inventories, purchase records, laboratory analysis;
- Calculations of baseline emissions, project emissions and leakage, as appropriate, have been carried out in accordance with the formulae and methods described in the monitoring plan and the

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 22 / 30</p>	

applied methodology;

- Any assumptions used in emission calculations have been justified;
- Appropriate emission factors, International Panel on Climate Change (IPCC) default values and other reference values have been correctly applied.

5.4. Reporting non-conformities

Non-conformities detected shall be indicated by the Team Leader in the verification report through the corrective action (CAR), clarification (CL), forward action requests (FAR), depending on the nature of the missing data and information.

A CAR is issued when:

- Non-compliance with the monitoring plan or methodology are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
- Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;
- Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;
- Issues identified in forward action request during validation or previous verification(s) to be verified during current verification have not been resolved by the project participants.

A clarification request is issued when:

- The information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

A forward action request may be raised when:

- The monitoring and reporting require attention and/or adjustment for the next verification period

If the evidence is appropriate and sufficient to satisfy all requirements, verification team shall mark relevant items as “OK” in the verification report.

Non-conformities are closed out by the verification team only if project participants modify the project design, correct the PDD and/or provide sufficient additional explanations and evidence.

In line with the “**Validation & Verification Policy**” available in Annex-1, verification team bases their findings and conclusions on objective evidence and conducts all activities in connection with the verification processes in accordance with the CDM Validation and Verification Standard and the rules and procedures of the Conferences of Parties and the CDM Executive Board Rules and Modalities.

All corrective action, clarification and forward action requests are included in the verification report with consistent numbering.

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 23 / 30</p>	

5.5. Verification report

Draft final verification report is prepared by the Team Leader after the completion of main verification activities.

This reporting is undertaken in a transparent way that allows the reader to understand the nature of the issue raised, the nature of the responses provided by the project participants, the means of verification of such responses and clear references to any resulting changes in the monitoring report or supporting annexes.

All findings including typographical errors which are detected by the verification team and are corrected immediately by the project participants through verbal conversations and/or interactions to be placed, clearly described and justified in the verification/certification reports as CLs and/or CARs.

All non-conformities determined during the verification/certification activities shall be included in the verification/certification reports as CLs, CARs and/or FARs.

All measures taken for confirmation and crosschecking of the facts and data in documentation provided by the project participants and information on project implementation obtained/witnessed personally during the on-site visit must be placed in the verification/certification reports.

Spelling, numbering and grammar check functions available in Microsoft Word program for the preparation and review of verification/certification reports must be used by both the project Team Leader and Independent Technical Reviewer, respectively.

Verification report shall include the following:

- A summary of the verification methodology and the scope of verification;
- Details of the verification team;
- Complete list of reviewed documentation and interviewed stakeholders;
- The table of public comments and description of how they have been addressed, if any;
- All findings, observations, conclusions, and crosscheck measures taken regarding to the following:
 - The implementation status of the project (For CDM projects that consist of more than one site, the report shall clearly describe the status of implementation and starting date of operation for each site. For CDM projects with phased implementation, the report shall state the progress of the CDM project activity achieved in the each phase under verification. If the phased implementation is delayed, the report shall clearly describe the reasons and present the expected implementation dates);
 - The actual operation of the CDM project activity, including scheduled and unscheduled maintenance or other periods of non-operation;
 - Information (data and variables) provided in the monitoring report that is different from that stated in the registered PDD and has caused an increase in estimates of the emission reductions in the current monitoring period or is highly likely to increase the estimates of emission reductions in the future monitoring periods;

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 24 / 30</p>	

- The compliance of the monitoring with the monitoring methodology in the registered or approved revised PDD;
- The monitoring has been carried out in accordance with the monitoring plan contained in the registered PDD or the accepted revised monitoring plan;
- Assessment of each parameter specified in the monitoring plan (from data generation and aggregation to recording, calculation and reporting), including the following:
 - An indication of whether data were not available because activity levels or non-activity parameters were not monitored in accordance with the registered monitoring plan as well as any actions taken by the verification team to ensure that the most conservative assumption theoretically possible has been made;
 - A description of how the verification team cross-checked reported data;
 - A confirmation that appropriate methods and formulae for calculating baseline emissions, project emissions and leakage have been followed; and
 - An opinion as to whether assumptions, emission factors and default values that were applied in the calculations have been justified
- To state whether the calibration is conducted at the frequency as specified by the methodology, monitoring plan of the registered PDD or the approved revised monitoring plan.
- Clear assessment of the necessary temporary or permanent changes to the project implementation or monitoring, if applicable;
- Comments and responses of the project participants to the non-conformities identified during the verification;
- Clear references to changes in the monitoring report or supporting documentation, which were caused by raised non-conformities;
- An assessment of any CARs or CLs issued to the project participants along with project participants' responses and if appropriate, final closure of them
- An assessment of any FARs issued to the project participants during the validation or previous verification period, along with project participants' responses and if appropriate, final closure of them
- A final verification/certification opinion on the project activity and achieved GHG emission reductions in the current monitoring period.

5.5.1. Verification/certification opinion

The final conclusion of the verification activities shall include one of the following two options:

- A positive verification opinion in the verification report that is submitted as a request for issuance;
- A negative verification opinion in the verification report in case the verification team determines that the CDM project does not fulfill applicable CDM requirements.

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 25 / 30</p>	

At the same time, verification opinion shall include the following:

- The name of CDM project verified and the project participants
- The number and period of verification
- The summarized explanation on verification process
- A confirmation statement on whether CDM project is implemented in line with the registered PDD and monitoring plan
- The amount of verified GHG emission reductions

The verification opinion shall be included into the verification report and shall be signed by the Team Leader, Independent Technical Reviewer and the Certification Manager.

5.6. Finalization of verification activities

All non-conformities shall be closed out and the draft final version of “**Verification report**” shall be prepared before submission of the project documentation for the Independent Technical Review (ITR). The details regarding the independent technical review process are given in the “**Independent Technical Review Procedure**”.

The mutual agreement is expected regarding the ITR findings and conclusions between the Independent Technical Reviewer and the Team Leader at the end of ITR process. In case there is no such mutual agreement between them, the final decision regarding the relevant issue(s) and the verification process shall be given collectively by the Certification Manager and General Manager and shall be kept as a record in the form of written protocol or minutes with the signature of General Manager having official signatory rights on behalf of the company. Besides that, in such cases final verification opinion shall also be signed by the General Manager.

Upon completion of the ITR, the Independent Technical Reviewer shall inform the Certification Manager for the submission of project’s issuance request and the related activity’s Team Leader shall submit to the Certification Manager all required documents for the issuance request including the final version of the verification report.

Certification Manager shall submit the issuance request to CDM Secretariat within 3 working days. The details regarding the submission of issuance request are given in the “**Project Handling Procedure**”.

The details regarding the completeness check procedure and the responsibilities in this process are given in the “**Project Handling Procedure**”.

In case, the outcomes of the completeness check or a request for review are not satisfactory, the verification process shall be considered re-open and all related responsibilities of the verification team shall be assumed as valid once more.

If any non-conformity is formed or determined during and/or after the verification, due to Re Carbon Ltd.’s activities, then the non-conformity is recorded and handled in line with the “**Control of Non-Confirming Product/Service Procedure**”.

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 26 / 30</p>	

The verification team performance monitoring and evaluation process is handled according to **“Personnel Appointment, Training and Performance Assessment Procedure”**.

5.7. Verification records

The verification records include the following:

- Pre-agreement records (Given in the **“Contract Review Procedure”**)
- Agreement period records (Given in the **“Contract Review Procedure”**)
- Verification planning records
- Execution and completion records of the verification.
- Post-verification records

5.7.1. Records pertaining to verification planning

The records for the verification planning phase comprises:

- **“Assessment Planning Form”** records

5.7.2. Records of execution phase of the verification

The records of the execution phase of the verification are as follows:

- Site visit notes
- Site visit attendance list
- Draft verification protocol
- Draft verification report
- Project related evidence in electronic or paper form;

5.7.3. Records of the completion phase of the verification

The records during the completion phase of the verification are as follows:

- Independent technical review records
- Final verification report and opinion

5.7.4. Post-verification records

The records of post-verification period are as follows:

- Evidence of submission of issuance request
- Completeness check and/or information and reporting check response records

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 27 / 30</p>	

- Request of review records, if any
- Records of performance evaluations of the verification team

All records are kept according to the “**Control of Records Procedure**” and are reviewed in internal audits, performed according to the “**Internal Audit Procedure**”. Any non-conformities determined and relevant actions are evaluated in management review meetings, which are held according to the “**Management Review Procedure**”.

6. Records Management

- P-C-015 Control of Records Procedure
- P-C-018 Internal Audit Procedure
- P-C-019 Management Review Procedure
- P-C-002 Personnel Appointment, Training and Performance Assessment Procedure
- P-C-005 Independent Technical Review Procedure
- F-C-008 On-site Attendance Form
- F-C-009 On-site Notes Form
- Verification and Certification Report form for CDM Project Activities
- F-C-007 Assessment Planning Form

7. References

- CDM Modalities and Procedures
- Simplified Modalities and Procedures for Small-Scale Project Activities
- Conference of Parties and CDM Executive Board decisions and clarifications
- CDM Validation and Verification Standard Version 02.0
- CDM Project Standard Version 02.0
- CDM Project Cycle Procedure Version 02.0
- CDM Accreditation Standard Version 07.0 Section 12.3
- Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities” Version 08.0
- Guidelines for Sampling and Surveys for CDM Project Activities And Programme of Activities Version Version 04.0

Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti. Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373	<h1>Standard Operation Procedure</h1>	
	<h2>Verification</h2>	Page: 28 / 30

- Tool for Assessment of Debundling for SSC Project Activities Version 04.0
- Tool for Demonstrating Additionality of Microscale Project Activities Version 09.0

History of the document

Version No.	Date	Summary of the revision	Prepared by	Approved by
00	20.03.2017	Initial version of the document	Anıl Söyler Certification Manager	Christian Johannes General Manager
01	16.07.2018	Revision of report format name in Section 6 Revision of some reference documents' name and version number in Section 7	Anıl Söyler Certification Manager	Christian Johannes General Manager
02	30.09.2020	Address change in the Header Version number update of the CDM Standards, Guides, Procedures and Tools under Clause 7	Aslı Bingöl Quality Manager	Christian Johannes General Manager

<p>Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti.</p> <p>Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara</p> <p>Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373</p>	<h1>Standard Operation Procedure</h1>	
<h2>Verification</h2>	<p>Page: 29 / 30</p>	

Annex-1 Validation & Verification Policy

Re Carbon Ltd. Company, within the scope of the validation & verification quality management system, acknowledges and confirms the following;

- To execute validation and verification/certification activities in line with impartiality, confidentiality, independence and objectivity principles,
- Not to have any judicial processes for malpractice, fraud and/or other activity incompatible with our functions and in such a case to inform the UNFCCC Secretariat,
- To establish the required structure to prevent any conflict of interest occurrences from either the company and/or the validation/verification team,
- To follow all related national/international standards, CDM requirements, CDM Modalities and Procedures, Conferences of Parties and CDM Executive Board decisions, clarifications and legal regulations,
- Not to plan the usage of any subcontractor for the execution of validation and verification/certification activities at current situation,
- To undertake full financial and technical responsibility in all situations including the outsourcing of human resources regarding to the validation/verification activities and decisions,
- Not to delegate any validation and verification/certification functions to any Party except for acquiring support from technical experts, if needed,
- Not to conduct both the validation and verification/certification of a project activity or PoA, except in the situations allowed by the applicable latest version of the Validation and Verification Standard,
- Not to use for the verification/certification of a project activity or PoA personnel who was involved in the validation team of such project activity or PoA, except in the cases in which a DOE is allowed to conduct both the validation and verification/certification in accordance with applicable latest version of the Validation and Verification Standard,
- Not to use full time or external contracted validation or verification/certification team members, in the validation or verification/certification of a project activity or PoA if:
 - They, or the organization that employs them, have been involved in the development, consultancy or financing of this project activity or PoA; or
 - They have had any professional relationships, other than a third party conformity assessment, with the project participants of this project activity or PoA within the last two years,
- Not to provide, while conducting the validation or verification/certification of a project activity or PoA, any advice, consultancy or recommendation to the project participants by the validation/verification team members on how to address any deficiencies that may be identified in the validation or verification/certification as in their work agreements,
- Not to use any personel with potential conflict of interest known to them and revealed to Re Carbon Ltd. unless any potential conflict of interests has been addressed and the relevant measures taken to address these potential conflicts have been documented and implemented,
- To take out the relevant personnel from the validation and/or verification/certification immediately; if during the course of a validation and/or verification/certification, such potential conflict of interests become known,

Re Carbon Gözetim Denetim ve Belgelendirme Ltd. Şti. Prof. Dr. Aziz Sancar Cad. 27/6 TR / 06690 Çankaya-Ankara Tel.: 0090-312-287 5122 Fax: 0090-312-287 3373	Standard Operation Procedure	
	Verification	Page: 30 / 30

- Not to disclose information about a contracted project participant that is not required to be made publicly available to a third party without the client's prior written consent,
- To coordinate and cooperate with all legal entities, clients, stakeholders and third parties continuously,
- To have sufficient human and financial resources for the validation and verification/certification activities,
- To handle all complaints, disputes and appeals regarding validation and verification/certification activities by an independent committees with utmost care and impartially
- To determine and implement corrective and/or preventive actions regarding non-conformities and/or potential non-conformities regarding validation and verification/certification activities, and
- To act according to continuous improvement principles by means of reviewing the validation & verification quality management system periodically.

Christian JOHANNES
20.03.2017
General Manager