CALIFORNIA
ENERGY
COMMISSION

Guidance to the California Climate Action Registry: Certification Protocol

COMMITTEE REPORT

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Gray Davis, *Governor*

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Legal Notice

This report was prepared by the California Energy Commission's Transportation Fuels Committee to be consistent with the objectives of Senate Bill 527 (2001). The views and recommendations contained in this document are not the official policy of the Energy Commission until the report is formally adopted.

Preamble

Introduction

This certification process has been designed to promote the credibility, accuracy, transparency, and usefulness of emissions data reported to the California Climate Action Registry (Registry). The process will enable the public, the Registry participants, the Registry, and the state to have confidence in the emissions reported to the Registry.

Certification has been designed to be a straightforward process to independently validate emissions reporting systems, emissions baselines, and annual emissions results. The third-party certification process is intended to ensure that Registry participants' required emissions have been properly identified, calculated, and reported. This certification process is critical to enable participants to best document their emissions, to ensure that the Registry records credible data, and to allow the state to provide appropriate consideration under future regulatory regimes.

The Certification Protocol

The Certification Protocol outlines standardized processes to evaluate the appropriateness and validity of the emissions information reported to the Registry. It is intended to provide state and Registry approved certifiers with the guidance they need to accurately and consistently certify participants' reported emissions. Hence, the document was designed with certifiers in mind, and it provides them with standardized procedures to certify various types of emissions data.

The Certification Protocol is intended to be a complementary component of the General Reporting Protocol prepared as part of the same Guidance to the Registry.

While the Certification Protocol describes standard evaluation processes for the common emissions information described in the General Reporting Protocol, the certification process is not limited to these activities. The process does rely upon the certifiers' professional judgement to assess the credibility of the reported emissions. Since the General Reporting Protocol does not provide participants with guidance for calculating industry-specific emissions, certifiers will assess these emissions (e.g., process and fugitive emissions) based solely on their professional judgement until the Registry adopts further guidance on emission reporting.

Reviewing and Improving the Certification Protocol

The Registry and state see numerous advantages to standardized certification procedures for the validation of participant reported GHG emissions. A consistent approach to certification will create a common value and language for emissions, while lowering the expected costs associated with certification. The recommendations of the California Energy Commission contained in this guidance document on certification represents an initial step into a subject that is evolving on the national and international levels. It is expected that all parties involved with this Registry will gain valuable experience with the certification process. The ability to improve over time the Registry's adopted certification protocol will depend, in large part, upon the exchange of ideas and experiences of all individuals that actively participate in the formative years of this Registry.

California Climate Action Registry Greenhouse Gas Emissions Certification Protocol

Using the Protocol
Certifiers must follow this Certification Protocol in conducting certifications of Registry participants' greenhouse gas emissions inventories and baselines. Complete each section of the protocol, including any tables. If sections are not applicable, explain the basis for this determination in your working papers. Information gathered to certify compliance with a requirement or conformance with a company policy or procedure, or good management practice, should be recorded in your working papers. If documents are copied, they should be referenced as an exhibit in Attachment 1 and the purpose of the exhibit explained in your working papers.

Certification Information
Facility Name:
Date(s) of Certification:
Certifier's Name:
Period Under Review:

Protocol Section/Title **Page**

I. Protocol Organization

The protocol is organized in such a way that it may be used by following the order presented within it. At the end of the document are supplementary materials meant to provide additional guidance or direction to the certifier.

Section II of the protocol presents an overview of certification, background information on certification within the Registry, and some essential principles and definitions. Section III presents the actual certification process. The process is further divided into sections on initiating the review, understanding management systems, identifying sources, confirming emissions data, and evaluating and reporting findings.

The attachments at the end of this document include additional materials that are helpful to the certifier while conducting certification activities. These include an exhibit list for recording any documents referenced during certification for the final report, a list of applicable statutes and regulations, a sample certification report, and separable copies of the tables.

Certifiers must follow this Certification Protocol in conducting certifications of Registry participants' greenhouse gas emissions inventories and baselines.

Complete each section of the protocol, including any tables. If sections are not applicable, explain the basis for this determination in your working papers. Information gathered to certify compliance with a requirement or conformance with a company policy or procedure, or good management practice, should be recorded in your working papers. If documents are copied, they should be referenced as an exhibit in Attachment 1 and the purpose of the exhibit explained in your working papers

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Note: *This document includes guidance on specific issues to be considered as part of the certification process. It is not intended to be exhaustive or to replace the need for professional judgment in the certification activity. It is intended to provide a set of standard criteria to allow comparison between participants' emissions inventories and Registry guidelines. The evaluation process in this protocol is not to be regarded as sufficient, but as providing an informed certifier with specific guiding information to ensure that a consistent certification is performed across a range of industries, sectors, and organizations. In every case the certifier shall make an informed professional judgment based on the available evidence as to the material accuracy of the data for certification and report accordingly.*

II. Overview of Certification

Certification is key to achieving the Registry's stated purpose of enabling the state to provide appropriate consideration of registered emissions results in any future international, national, or state regulatory scheme. It is also important for the participants to know that an independent and qualified third-party certifier has certified their data.

A. Certification Background

Senate Bill 527 requires that participants registering baseline emissions and emissions results in the Registry provide certification of their methodologies and results. Therefore, the Registry will require that emissions data submitted to it be certified. In addition, the Energy Commission is required to develop guidance to the Registry and the Registry is required to establish procedures and protocols to certify greenhouse gas emissions baselines and emissions. The Certification Protocol is part of that process. Its purpose is to provide a uniform standard for third-party certifiers to follow when conducting certification activities and to ensure the integrity of the certification program.

It is expected that different companies will have different goals and objectives in participating in the Registry. These may include learning about their operations and gaining practice in estimating greenhouse gas emissions, using the data obtained for promotional activities, and ensuring credit for greenhouse gas emissions reductions achieved prior to any regulatory regime. Although participants may enter the Registry with these different objectives in mind, since all data must be certified, it all must meet a certain minimum quality standard.

Certification is the method by which the data are ensured to be of a high enough quality, meaning complete, consistent, accurate, and transparent. SB 527 defines certification as follows:

> *"Certification" means the determination of whether a given participant's greenhouse gas emissions inventory (either baseline or annual result) has met a minimum quality standard and complied with an appropriate set of registry-approved procedures and protocols for submitting emissions inventory information.*

Conflict Of Interest

Firms may <u>not</u> act as both technical assistant and certifier for a Registry participant. A certifier will attest to the following:

- Agree not to act on behalf of any Registry participant as both a consultant and certifier concurrently or within any three year period.

A firm may not engage in consulting and certification services with the same client. Consulting services include any and all consulting services, not only greenhouse gas emissions or environmental consulting. A certifier may engage in consulting services for other clients, for whom the organization does not engage in any certification activities. A firm may not engage in certification services with a participant for whom that firm engaged in consulting services within the previous 3 years and vice versa.

In the event that the certifier violates these conditions, the Commission in consultation with the Registry, in its discretion, may disqualify a state-approved certifier.

Minimum Quality Standard

A primary goal of the Registry is to have confidence in the data stored at the Registry. It is possible that during the certification processes differences will arise between the emissions totals

determined by the certifier and the totals determined by the Registry participant. A minimum quality standard that would provide this confidence is that all participants' data should be at least 95 percent accurate on an entity-wide basis.

Ensuring that all cumulative data is at least 95 percent accurate is equivalent to ensuring that all cumulative data is no more than 5 percent inaccurate. A certifier could recheck all data to ensure the cumulative accuracy is greater than 95 percent. On the other hand, a certifier could check possible sources of error (far less data) to demonstrate that the cumulative inaccuracy does not exceed 5 percent. The latter method would be the most efficient and least costly approach to certification.

Differences between emissions results reported by the participant and those determined by the certifier may be classified as either material (significant) or immaterial (insignificant). A discrepancy is considered to be material (significant) if the reported result differs from the result determined by the certifier by at least 5 percent. A difference is immaterial (insignificant) if it is less than 5 percent.

The Registry requires that emissions be certified as meeting a minimum quality standard or to be "free of material misstatement." Free of material misstatement means that the emissions results reported by the participant are within 5 percent of those determined by the certifier. Material misstatement may apply to facilities, specific emissions sources or types of sources or to the total reported emissions of the Registry participant. For the purpose of providing an overall evaluation of the emission results submitted to the Registry, certifiers will consider material misstatement of the total reported emissions.

The examples below are intended to help certifiers determine when the reported emissions results are free of material misstatement.

Example 1: A participant has four facilities and has estimated and reported their total emissions in CO_2 Equivalent (CO_2 Eq.) units as shown below. The certifier, as part of certification, calculated the emissions of those four facilities as shown below. The participant was found to have overestimated Facilities 1 and 4 and to have underestimated Facilities 2 and 3. The difference between the participant reported and certifier's estimate of emissions from Facility 1 was 7.5 percent of the certifier's emission result and was, therefore, considered to be a material difference. Facility 3 was also found to be materially different from the certifier's result, with a difference of 10.3 percent. The other two differences (Facilities 2 and 4) are considered immaterial as they are less than 5 percent. The total emissions results are, however, free of material misstatement because the total reported emissions differ from the total certifier estimate of emissions by less than 5 percent. The certifier would, in this case, report that the participant's results are free of material misstatement, but would also specify that the emissions estimates from Facilities 1 and 3 did have material differences.

	Participant-calculated Emissions (tonnes CO_2 Eq.)	Certifier-calculated Emissions (tonnes CO_2 Eq.)	Difference (% of Certifier's Estimate)	Material?
Facility 1	10,000	9,300	700 (7.5 %)	Yes
Facility 2	65,000	66,500	1,500 (2.3 %)	No
Facility 3	20,000	22,300	2,300 (10.3 %)	Yes
Facility 4	5,000	4,800	200 (4.2 %)	No
Total	**100,000**	**102,900**	**2,900 (2.9 %)**	**No**

Example 2: A participant has four sources and estimated and reported their total emissions as shown below. The certifier, as part of certification, calculated the emissions of those four sources as shown below. The participant was found to have overestimated Source 4 and to have underestimated Sources 1, 2, and 3. The difference between the reported and certifier estimate of emissions from Source 2 was 6.1 percent of the certifier's result and was, therefore, considered to be a material difference. Source 3 was also found to be materially different from the certifier's result, with a difference of 8.7 percent. The other two differences (Sources 1 and 4) are considered immaterial as they are less than 5 percent. Despite the fact that the results from half of the sources are free of material misstatement, the overall emissions results are **not** free of material misstatement because the total difference is 5.7 percent. The certifier would, in this case, report that the participant's results are **not** free of material misstatement and would provide details to the participant explaining the basis for this determination.

	Participant-calculated Emissions (tonnes CO_2 Eq.)	Certifier-calculated Emissions (tonnes CO_2 Eq.)	Difference (% of Certifier's Estimate)	Material?
Source 1	10,000	10,200	200 (2.0 %)	No
Source 2	65,000	69,200	4,200 (6.1 %)	Yes
Source 3	20,000	21,900	1,900 (8.7 %)	Yes
Source 4	5,000	4,800	200 (4.2 %)	No
Total	**100,000**	**106,100**	**6,100 (5.7 %)**	**Yes**

Certification Process

In the certification process, the minimum quality standard is no material misstatement of a participant's reported inventory on an entity-wide basis.

Therefore, the certification process should focus on areas likely to have the greatest uncertainty and impact on total emissions results. By determining that the most likely sources of error are, in fact, within an acceptable range of accuracy, the certifier can be assured that the cumulative reported results meet the minimum quality standard. The process by which this is accomplished is to understand and assess the participant's management systems. This is done in order to develop a certification plan focused on those areas with the weakest management systems and largest impacts on the total emissions inventory.

Without an assessment of the management systems, the certifier would have to sample a larger number of sources to gain the same level of confidence than if the certifier had assessed management systems and appropriately selected a smaller number of sources to sample. Based on this assessment of management systems, the certifier will be able to select the sample set more efficiently, minimizing the cost of certification.

For example, assume participant A has designated personnel trained in estimating GHG emissions and that these personnel have developed its emissions inventory. Further assume that participant B does not have any trained personnel involved in developing its inventory. The certifier will likely have to spend additional time reviewing data and calculations to be assured that the inventory is accurate. On the other hand, if the certifier does not evaluate the training and expertise of the participant's staff, then the certifier should not assume that staff have any training. The certifier then would spend more time checking data and calculations.

One of the underlying purposes of examining management systems is to evaluate whether the participant has a program in place for the preparation and submission of emissions inventory data to the Registry. This evaluation is required by SB 527.

SB 527 includes a description of the process for determining the minimum standard for certification.

> *Where required by the registry for certification, organizations approved pursuant to subdivision (b) shall do all of the following:*
>
> *(1) Evaluate whether the participant has a program, consistent with registry-approved procedures and protocols, in place for preparation and submittal of the information reported under this chapter.*
>
> *(2) Check, during certification, the reasonableness of the emissions information being reported for a random sample of estimates or calculations.*
>
> *(3) Summarize its review in a report to the board of directors, or equivalent governing body, of the participating entity, attesting to the existence of a program that is consistent with registry-approved procedures and protocols and the reasonableness of the reported emissions results and noting any exceptions, omissions, limitations, or other qualifications to their representations.*

In order to ensure consistency in the application of certification and to ensure the credibility of the Registry, the Certification Protocol expands upon this short description and provides certifiers the guidance necessary to implement the certification requirement found in the statute.

The Certification Protocol is based on the guidance provided in the Reporting Protocol. The Reporting Protocol should be consulted by the certifier for clarification of reporting requirements. All definitions presented in that document are applicable within the Certification Protocol as well.

Site Visits

Depending on participants' attributes, as described below, site visits are most often considered necessary to ensure the integrity of the certification process. The number of a participant's sites that will require a visit will vary based on participant attributes. Within the guidelines provided below, it is expected that each certifier will use appropriate professional judgment in determining how many and which sites will require a visit during certification; this determination will take into account the diversity of facilities being reported.

In most cases, the first step for a certifier to take will be to make contact (e.g. telephone, visit, etc.) with the participant's primary contact at the participant's central office. During this contact, the certifier and participant would further establish the appropriate scope for certification. As guidance for that scope, the following table is provided for selecting the number of sites to visit. Consideration should also be given to visiting those facilities that have a potential impact on the overall accuracy of the participant's reported emissions results. The certifier may substitute conference calls for some of the additional site visits if the certifier judges that this is adequate, although site visits are preferred.

Total Sites	Suggested Minimum Sample Size
2-10	30%
11-25	20%
26-50	15%
51-100	10%
101-250	5%
251-500	3%
501-1,000	2%
Over 1,000	1-2%

B. Recommended Accommodation For Participant Certification Categories

SB 527 states that the process for certification of emissions results may involve a range of options depending upon the nature of the emissions, complexity of a company's facilities and operations, or both, and the procedures deemed necessary by the Registry Board to validate a participant's emissions information. The certification process outlined below provides accommodation for participant categories based on the participant's size and complexity as well as the means by which the participant provides information to the Registry.

Certification of emissions data for an entity that is a small organization with simple operations should reflect these entity attributes. It should be possible for a certifier to reach an appropriate level of confidence in this type of entity's reported data with less effort than that expended on a larger, more complex entity. Therefore, in keeping with the direction provided in SB 527, the Energy Commission recommends that certification accommodations should distinguish between the small organizations with simple operations and others.

The Registry anticipates that it will make available an on-line calculation tool to assist participants in calculating their emissions inventories. Participants that choose to use this tool would enter their activity data for their various source categories, choose the appropriate emissions factors, and enter other relevant data. The calculation tool would then automatically calculate the participant's inventory and provide a customized report of their data and other relevant information. On the other hand, participants may choose not to use the calculation tool; in this case, the participant would provide their own calculated emissions results and other required information.

By using the Registry's calculation tool, participants will provide more data, in more detail, than the participants that choose to provide only their calculated emissions results. The certification process should reflect the amount of information provided to the Registry. That is, the more information provided to the Registry, the less in-field gathering of information that should be required during the certification process. Conversely, more in-field information will necessarily be gathered during certification for participants that have not provided additional information via the calculation tool. Thus, certification accommodations should also distinguish between participants that have provided information via the calculation tool and those that have not.

Small Size Participants With Simple Operations

The simplest certification process would be for a participant with only one site and only indirect emissions (electricity, district heating or cooling) and emissions from natural gas supplied by a utility. Such a participant would require a site visit only if deemed necessary by the certifier, with subsequent visits recommended if any characteristics of the participant changed (e.g., new sites, changed location, began new operations). The certifier may interview the participant by telephone to receive answers to questions he or she might have about information submitted to the Registry and to determine the need for a site visit. The site visit would be used to ensure that all material greenhouse gas emissions sources have been included and appropriately accounted for, and to gain a better understanding of the participant's operations and characteristics.

The certifier would then review any processes in place for greenhouse gas emissions reporting and any utility bills or other data and documentation used to calculate emissions. The data review can be completed away from the participant's site. Possible locations for the data review include the certifier's office or possibly the Registry itself. Once the certifier is satisfied that the participant's only emissions are the result of purchased utilities, the only data that would need to be reviewed would be the utility bills and associated documentation.

Larger Participants or Complex Operations

For a participant of larger size or with complex operations, a more complex certification process is necessary. A first time site visit would be required, as would subsequent site visits every third year in order to ensure that all material greenhouse gas emissions sources have been accounted for appropriately and to review any changes that may have occurred during the previous years. In addition, the certification process for every third year would be more in-depth than the others and would review data from the intervening years, as necessary. A more in-depth certification would also be required in intervening years whenever a participant's emissions inventory exceeds a change threshold of 10 percent. A management system review would also be conducted in the event of an emissions change exceeding this threshold.

Sampling techniques would be utilized to review data based on priorities assigned during the management system review, with aspects having higher uncertainty and impact getting more attention. If the participant has multiple sites, not all sites will be required to be visited, although multiple sites may be visited by the certifier based on sampling techniques. The certification process for a participant that chooses to report on a nationwide basis would be the same as for a participant that chooses to report on a California basis only.

Larger Participants and Reporting Via the Registry On-line Calculation Tool

Beyond the size and complexity of the participant, a further distinction in the certification process will be based upon whether or not a participant chooses to use the Registry on-line calculation tool. As discussed above, both participants that use the tool and those that do not will require a similar certification process; however, for the participants that use the on-line tool, the certification process would require less preparatory effort on the part of the certifier and perhaps, fewer site visits. This should make for a less expensive and expedited certification process.

C. Independent Certification Principles

The purpose of certification is to provide an independent review of data and information being submitted to the Registry to ensure that they meet certain quality criteria. The definition of certification provided in SB 527 states that certification is to determine, among other criteria, whether a given participant's GHG emissions inventory has met a minimum quality standard and whether a participant has a program consistent with a Registry approved protocol. As elaborated in this Certification Protocol, for this certification process, a minimum quality standard is a material misstatement of a participant's reported inventory of less than 5 percent on an entity-wide basis.

To fulfill the purpose of certification, the independent certification process maintains the criteria of completeness, consistency, accuracy, and transparency as its underlying principles.

Completeness. One principle of certification is to ensure accounting of all material greenhouse gas emissions sources and activities within the specified scope of the participant's inventory. In order to ensure that baseline and annual emissions results include all sources that are not de minimis in quantity and that proper accounting for vertical integration occurs, these topics are included as part of the certification process.

Consistency. Reporting by participants must allow meaningful comparison of emissions performance over time. Independent certification, therefore, ensures that consistent methodologies and measurements are used between the baseline results and annual emissions results. Changes to the baseline are reviewed as part of certification and are noted by the certifier to ensure appropriate comparisons.

Accuracy. The basis of certification is to ensure that entity-wide reported data are within the materiality threshold of 5 percent of the certifier's estimate of emissions results. Independent certification ensures that calculations and estimations are as accurate and as precise as necessary to prevent material errors.

Transparency. Certification does not only provide an additional check on the transparency involved in reporting greenhouse gas emissions, it also is a transparent exercise itself. Certification activities are clearly and thoroughly documented to provide the ability for outside reviews to be undertaken, if desired by the Registry and participants.

D. Independent Certification Process

Prior to certification, the participant and certifier will enter into contractual arrangements for certification as each party deems necessary and as required by Registry protocols. Further, before initiating the certification process, the participant and certifier must provide certain preliminary information to the Registry and Energy Commission.

- The participant must register with the Registry and provide initial information as described in Chapter 4 of the General Reporting Protocol.

- The certifier must notify both the Registry and the Energy Commission at least two weeks before any certification activity. This notification period is necessary to allow the Energy Commission the opportunity to accompany the certifier on visits to the participants' sites as specified by SB 527. A certifier that does not provide proper notification to the Registry and Energy Commission may be disqualified as a state-approved certifier.

After these necessary steps have been fulfilled the participant and certifier may proceed with the certification process.

The independent certification process consists of five steps: 1) initiating data review, 2) understanding management systems, 3) identifying sources, 4) confirming emissions data, and 5) evaluating and reporting findings. All five steps would be thoroughly undertaken on the participant's first year of registration, every third year thereafter, and in any year where a participant's emission inventory exceeds a change of 10 percent. A more streamlined certification process is permitted every second and third year of a three-year cycle. This streamlined process would minimize the first three steps (i.e., initiating data review, understanding management systems, and identifying sources). The last two steps, confirming emissions data, and evaluating and reporting findings, would be the focus of the second and third year streamlined certification process.

Initiating Data Review. The first step in certification is to initiate contact between the participant and the certifier. As required by SB 527, the participant and certifier will schedule any meeting(s) in advance and allow the participant to control property access. The certifier may then obtain some of the information necessary to commence certification and to begin to form a plan for certification activities. This step also includes any initial onsite activities, including site tours and initial meetings. It is also at this point that the certifier describes the actual certification process being followed and what participants should expect from the certifier throughout the process.

Understanding Management Systems. The next step in certification is to review and understand the management systems in place for gathering information and estimating and reporting greenhouse gas emissions. This provides the certifier with the necessary basis for evaluating the processes and programs the participant has in place as part of their participation in the Registry.

Once the certifier understands the management systems in place, those programs and processes are evaluated to assess the relative uncertainty and impacts associated with each aspect of the participant's estimation and reporting of greenhouse gas emissions. If a participant has strong management systems in place to gather information necessary for estimation and reporting of a small emissions source, that source would be assigned a relatively low uncertainty and impact weighting. On the other hand, if the participant has weak management systems in place to handle large sources of emissions, those sources would be assigned relatively high uncertainty and impact weights.

Identifying Sources. This step includes the process of reviewing the participant's operations to identify applicable greenhouse gas emissions sources. It includes reviewing the emissions inventory as well as each type of emission source (stationary combustion, transportation, indirect, process, and fugitive) to ensure that all applicable sources are properly included or excluded from the inventory. The results from this step are used to better focus efforts during the next step.

Confirming Emissions Data. SB 527 specifies that certification is to include a random sampling exercise. However, this does not mean that samples are arbitrary.

A sample should represent, to some degree, the underlying data that are being certified. If a sample does not adequately represent the underlying data, the sample can yield results that are not representative of the participant's overall emissions reporting.

For example, if a participant from the oil and gas industry has three large refineries and 3,000 small retail outlets, an arbitrary selection of facilities from a complete listing of facilities would likely result in no refineries being visited, but only retail facilities. Clearly, this would not provide the necessary confidence in the reported data. A stratified random sample could take into account the diversity of the facilities being reported. That is, a random sample among the 3,000 small retail outlets would be compiled as well as a sample of one of the refineries. These are necessary considerations in the certifier's determination of relative uncertainty.

It is not expected that a certifier will review all documents and recheck all calculations. Rather, the process includes evaluating which areas have greatest uncertainty and impact and checking those more thoroughly than other areas that have less uncertainty and impact. The information obtained in the previous step is used to ensure that an appropriate amount of effort is used in sampling the data. To ensure, on an entity-wide basis, that data meet a minimum quality standard, it is most efficient to demonstrate that the areas that have the greatest uncertainty and highest impacts are free of material misstatement.

By utilizing this approach of assessing uncertainties and impacts on the emissions inventory and then focusing certification efforts appropriately, the process is more efficient. Such an approach requires less review of data to achieve the same degree of confidence. This process should provide the least expensive approach to ensuring the minimum data quality as specified in SB 527.

Confirming emissions data is the step that requires the most effort and is the one that yields the most information on the quality of the data reported.

Evaluating And Reporting Findings. Once the data are reviewed, the findings from that review are evaluated against the minimum quality standard. The final step is issuing the certification

report to the appropriate body within the participant's organization. In most cases this will be the board of directors or other management entity. As part of this report, the certifier will issue a statement regarding the quality of the data. The certifier will issue an opinion that the data be certified, certified with qualifications (some areas need improvement), or not certified and submit it to the appropriate body within the participant and to the Registry.

The Registry can thereafter certify the participant's reported data based on the certifier's opinion. Should the Registry choose not to certify the participant's reported data based on a certifier opinion that does not recommend certification, the participant would need to consider additional steps to obtain certification of their baseline or annual emission results. The participant would need to address deficiencies noted by the certifier either on their own or with the help of a technical assistant. It should be noted that the certifier cannot provide technical assistance services to the participant as this would entail a conflict of interest, but can only provide an opinion on the participant's data available at the time of the certification process. Should the participant choose, after correcting any deficiencies, they may then contract with the same or different state and Registry approved certifier to provide a new certification opinion.

E. Record Keeping and Retention

Regardless of which certification accommodation a participant may be subject, there are certain record keeping and retention policies that should be followed. Aside from being impractical for the Registry to maintain all the necessary records for each participant, not all participants will be submitting sufficient data from which to certify emissions results. Each participant should maintain any relevant records from which emissions results have been calculated. Such records may include, but not be limited to, utility bills, fuel consumption records, emissions data, process data and schedules, and past reports. Although it is not possible to predict what any future regulatory regime may require regarding record keeping and retention, it is impractical to require participants to retain records indefinitely. It is, however, inadvisable for participants to dispose of relevant records immediately after filing emissions reports. This would hinder any future certification or review activities, putting the participant at a disadvantage in case of some need to re-estimate the emissions results. In addition, baseline inventory data is key to determining temporal trends in greenhouse gas emissions. While it is impractical to require participants to retain records indefinitely, it is advised that participants evaluate retention periods to ensure adequate data availability for future reviews.

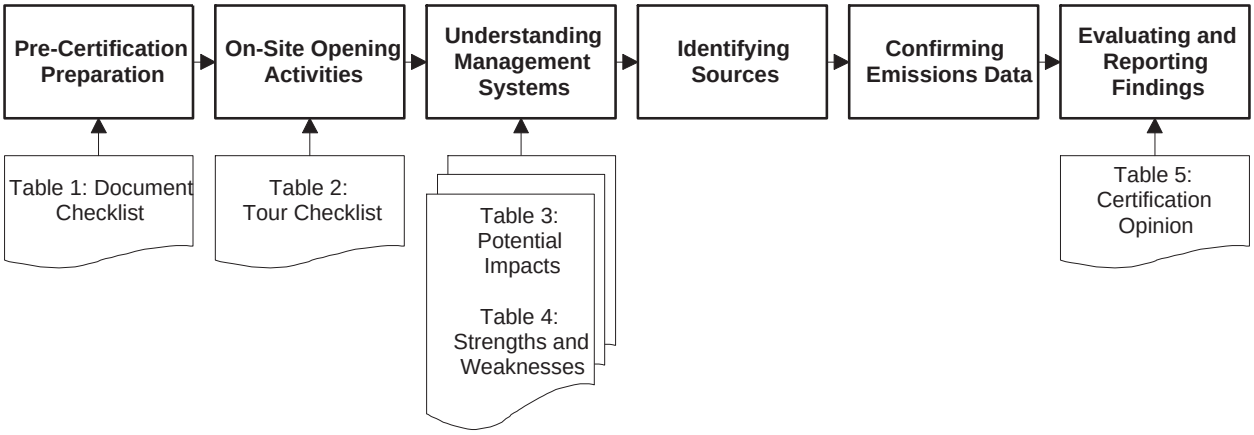
III. Certification Process

Note: *The certification process includes a sequence of activities, as shown in Figure 1. The first two steps prepare the certifier and the participant for the certification process, which is primarily composed of the following three steps. These three steps are the major activities of certification: Understanding Management Systems, Identifying Sources, and Confirming Emissions Data. These three activities form the core of certification. The first part is understanding the participant's approach to conforming with Registry guidelines. The second is assessing the completeness of the inventory. The third is evaluating the accuracy of the emissions estimates. Each part contributes to the completion of the next, until the process is complete and the certifier obtains a full understanding of the participant's reporting processes and data. Once that is complete, the certifier evaluates and reports the findings to the participant.*

A. Initiating Data Review

Pre-Certification Preparation

Figure 1. Certification Process



1. Review background information obtained from the participant to develop a general understanding of operations, emissions sources, organizational and operational boundaries, etc. (Refer to Table 1 for a list of potential greenhouse gas emissions records to review.)

2. Establish an understanding with the participant on expectations and inform the participant of any information that will be required during certification. (Providing the participant with a copy of Table 1 would be appropriate and helpful.)

3. Obtain and review applicable company and facility policies, procedures, and standards.

4. Obtain copies of and examine California Climate Action Registry documents in order for the certifier to become familiar with the specific contents potentially applicable to this facility. Add appropriate steps or develop specific checklists to this protocol based upon this review.

Table 1. Document Checklist (List of Records to Review)
The following list is an example of the records that should be reviewed during certification of greenhouse gas emissions at the participant's facility. Some of these documents may be reviewed during pre-certification preparation activities, while others may be reviewed during onsite certification activities. Not all records may be applicable to each facility.
General and Management Systems
Organizational chart/job descriptions for greenhouse gas emissions reporting management personnel
Greenhouse gas emissions reporting plan
Previous baseline and annual greenhouse gas emissions reports
Description of the methodologies used to quantify emissions, including, as appropriate, the emission factors and assumptions used in the calculations
Description of any significant emissions changes above the change threshold (10 percent). Examples of causes for significant emissions changes include extended process shutdowns, acquisitions/divestitures, outsourcing/insourcing, plant closures/openings, process changes, changes in reporting boundaries, or changes in calculation methodologies
Stationary Combustion Emissions
Utility bills (natural gas, etc.)
Fossil fuel consumption by type for onsite fuel consumption
Transportation Emissions
Fuel consumption, or vehicle mileage, (each by type of vehicle) for transportation-related emissions
Vehicle types and fuels
Indirect Emissions
Data on the consumption of imported energy (electric bills, etc.)
Imported energy sources
Emissions factors for energy suppliers
Process Emissions
Activity data used for calculating process-related emissions
Emissions sources and control equipment in service (including control equipment efficiency)
Fugitive Emissions
Stream compositions
Leak test results or maintenance practices
Types of equipment and equipment counts

Onsite Opening Activities

5. Meet with participant management at the participant's facility to:

    a. Present an overview of the certification, including purpose and scope, approach, and reporting.

    b. Obtain a brief overview of facility operations, key responsibilities, physical layout, special concerns, etc.

6. Tour the facilities selected for review as part of the certification process to gain a general understanding of manufacturing processes and areas of greenhouse gas emissions. (Use Table 2 as appropriate for this and subsequent tours.)

Table 2. Tour Checklist
This checklist is provided as a reference for things to look for during the "orientation tour." The list is not all inclusive; it is meant to serve as an aid or tool to remind the certifier of the major considerations during the tour.
Greenhouse Gas Emissions Sources
Stationary combustion sources: boilers, furnaces, burners, turbines, heaters, incinerators, engines, flares, etc.
Mobile combustion sources: automobiles, trucks, trains, aircraft, ships, off-road vehicles, etc.
Electrical facilities and usage areas
Chemical processes
Types of fuels used and sources
Fugitive emissions sources: wastewater treatment, air conditioning/cooling units, gas pipeline leaks, process vents/relief valves, landfills, etc.

B. Understanding Management Systems

Note: *The purpose of Understanding Management Systems is to develop a detailed understanding of the participant's overall approach to managing its greenhouse gas emissions reporting in the following areas:*

- *Baseline Inventory and Maintenance*
- *Stationary Combustion Emissions*
- *Transportation Emissions*
- *Indirect Emissions*
- *Process Emissions*
- *Fugitive Emissions*

Once the certifier has developed an understanding of how the participant manages its greenhouse gas emissions reporting programs, the next step is to evaluate the soundness of these management and control systems in the context of the potential impacts to the inventory and materiality. This step is intended to provide the certifier with an overview of the participant's processes for developing the inventory and estimating emissions and is intended to confirm that a participant's procedures conform with Registry greenhouse gas emissions inventory guidelines.

7. Determine and document how or by what process the entity has identified and assessed the applicability of California Climate Action Registry greenhouse gas emissions reporting requirements to onsite operations.

8. Determine the existence of entity procedures (formal or informal, such as procedures or use of outside consultants) to implement greenhouse gas emissions reporting activities. Obtain information on the overall design and scope of the policies, procedures, and/or practices.

9. Obtain information regarding the methods used to manage and implement entity greenhouse gas emissions reporting programs (e.g., does the participant use spreadsheets to record data, obtain actual emissions data, utilize engineering formulas to estimate emissions?). Determine the current status of program development and/or implementation.

10. Obtain information regarding the methods used to ensure that business activities with a material greenhouse impact are identified and managed.

11. Determine how the participant assigns and communicates responsibilities for greenhouse gas emissions reporting management.

12. Evaluate the extent to which entity personnel have been trained and equipped with skills and knowledge to perform assigned greenhouse gas emissions reporting duties (e.g., review the training of responsible internal staff). If the entity relies on external staff to perform required activities, understand the contractors' qualifications to undertake such work.

13. Understand the nature and scope of the entity's greenhouse gas emissions record-keeping and reporting systems. Determine what types of documents are created to support/substantiate activities related to greenhouse gas emissions reporting activities, and where such documentation is retained (e.g., reporting plans/procedures, utility bills, etc.).

14. Understand the mechanisms used by the facility for measuring/reviewing the effectiveness of greenhouse gas emissions reporting programs. For example, how often are policies, procedures, and practices updated?

15. Based on the information gathered above, assess the strengths and weaknesses of the management systems and processes. That is:

    a. Determine the range of potential impacts if a particular greenhouse gas emissions reporting issue is not managed appropriately. Use Table 3 to complete this step. Table 3 may be used at the participant or facility level as appropriate.

    b. Evaluate the management systems and controls to determine if they are designed soundly (i.e., consider if the systems, coupled with the control systems, are appropriate given the potential impacts). That is, for each of the management system activities reviewed, document your preliminary conclusion as a strength or weakness in Table 4. Table 4 may be used at the participant or facility level as appropriate.

Table 3: Determining Potential Impacts Associated with Incomplete Preparation of the Inventory and Emissions Estimates Relative to the Participant's Activities

List the potential impacts associated with each protocol topic if they are not managed appropriately and conclude whether they are high impacts or low impacts (e.g., high impacts generally refer to *high probability* of material misstatement; low impacts refer to *low probability* of material misstatement).

Protocol Topic	Potential Impacts	High	Low	% of Total Emissions
Baseline Inventory and Maintenance				
Stationary Combustion Emissions				
Transportation Emissions				
Indirect Emissions				
Process Emissions				
Fugitive Emissions				

Table 4: Assessing Management System Strengths and Weaknesses

Based on the information gathered and recorded in Table 3, assess the strengths and weaknesses of the systems in place relative to the information gathered about the participant's management systems to develop an inventory and to estimate greenhouse gas emissions.

Protocol Topic	Strong	Weak
Baseline Inventory and Maintenance		
Stationary Combustion Emissions		
Transportation Emissions		
Indirect Emissions		
Process Emissions		
Fugitive Emissions		

C. Identifying Sources

Note: *This section of the protocol includes the procedure for identifying all applicable greenhouse gas sources of a participant. It also includes the process for confirming that the participant's baseline inventory contains all applicable sources and has been properly adjusted, as necessary, for changes to the participant's operations.*

16. Confirm that greenhouse gas emissions resulting from processes and facilities that are under management control of the entity are included. As permitted by Registry rules, reporting may also be by equity share or other pro rata methods. (See the General Reporting Protocol for a discussion on acceptable equity share and other pro rata reporting methods.)

17. Confirm that all applicable greenhouse gas emissions from the entity in the state of California, or, if chosen by the participant, the United States, are included.

18. Confirm that the inventory contains all required source types of greenhouse gas emissions. For example, confirm that the inventory includes the following (place a check [√] on the line if the element is included):

    ___ Emissions from onsite combustion for the production of heat, steam, or electricity

    ___ Transportation emissions from vehicles owned or operated by the participant and used for moving raw materials, finished products, supplies, or people

    ___ Indirect emissions from electricity imports, steam imports, and heating and cooling obtained from district heating/cooling plants

    ___ Process emissions, such as from the production of cement, adipic acid, and ammonia, as well as emissions from agricultural processes

    ___ Fugitive emissions, such as methane leaks from pipeline systems and leaks of HFC from air conditioning systems

    ___ Indirect emissions from electricity use, imported steam, district heating and cooling

19. Confirm that the inventory contains all required greenhouse gases. For example, confirm that the participant has calculated emissions for all relevant gases from each source, including, as applicable (place a check [√] on the line if the element is included):

    ___ Carbon dioxide (CO_2)

    ___ Methane (CH_4) *(required after year 3 of participation)*

    ___ Nitrous oxide (N_2O) *(required after year 3 of participation)*

    ___ Hydrofluorocarbons (HFCs) *(required after year 3 of participation)*

    ___ Perfluorocarbons (PFCs) *(required after year 3 of participation)*

    ___ Sulfur hexafluoride (SF_6) *(required after year 3 of participation)*

20. Confirm that the inventory contains all required sources of greenhouse gas emissions. For example, confirm that the inventory includes all greenhouse gas emissions that are not de minimis.

21. Check if any of the entity's activities have been outsourced in the current year. If so, confirm that all emissions associated with the outsourced activity have been reported and subtracted from the entity's baseline. (See section 4.1.2 of the General Reporting Protocol for guidelines regarding baseline changes.)

22. Check if any mergers or acquisitions have occurred during the current reporting year. If so, confirm that the emissions baselines of any merged or acquired entities have been added to the entity's baseline. (See section 4.1.2 of the General Reporting Protocol for guidelines regarding baseline changes.)

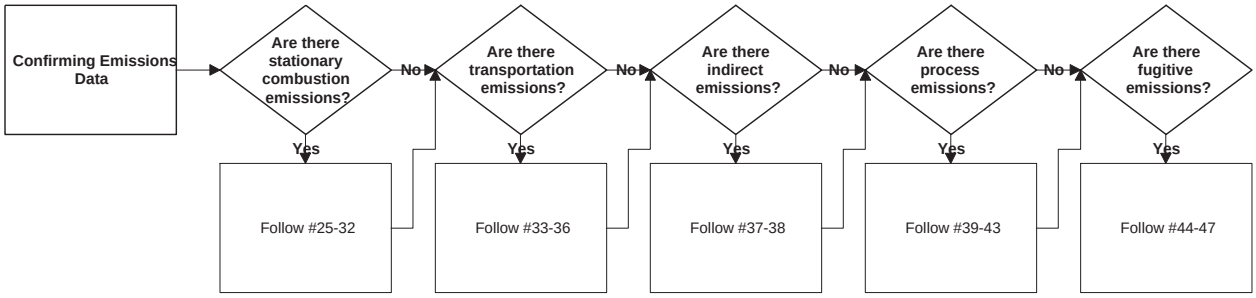
23. Check if any divestitures have occurred during the current reporting year. If so, confirm that the emissions baseline of the divested entity has been subtracted from the entity's baseline. (See section 4.1.2 of the General Reporting Protocol for guidelines regarding baseline changes.)

24. If the participant has expanded its reporting boundaries (e.g., statewide to national), confirm that it maintains separate baselines and annual inventories for California and national emissions.

D. Confirming Emissions Data

Note: *This section of the protocol includes the procedure for checking the accuracy of greenhouse gas emissions data. It is separated into parts, corresponding to the types of emissions specified in the General Reporting Protocol. Figure 2 shows the process for determining which parts of this section are applicable to a participant. If, for example, a participant only has stationary combustion emissions and indirect emissions, the certifier need only follow numbers 25 to 32 and 37 to 38.*

Figure 2. Confirming Emissions Data Process



Stationary Combustion Emissions

25. Confirm that fuel types utilized onsite by the entity have been identified and that combustion chambers (including mobile sources) have been identified.

26. Confirm that stationary combustion sources not included in the inventory and reported as such are, indeed, de minimis.

27. Confirm, based on available documentation and by source, the total consumption of each fuel type.

28. Confirm that correct and appropriate emission factors have been used for calculating greenhouse gas emissions. (See chapter 3 of the General Reporting Protocol for emissions factors.)

29. Using appropriate sampling techniques, re-compute emissions results for combustion sources. Use all necessary data and correct and appropriate emissions factors, and compare these results to the data reported by the entity.

30. If the entity uses continuous emissions monitoring systems (CEMS) for greenhouse gas emissions, the certifier may compare those results to calculations using emission factor estimation methods.

31. If the entity uses CEMS for greenhouse gas emissions, confirm that EPA mandated quality assurance and quality control procedures are followed, and, if necessary, recalculate emissions estimates.

32. If the entity uses CEMS for greenhouse gas emissions, confirm that appropriate corrections for bias are used in accordance with state and/or EPA guidelines.

Transportation Emissions

33. Confirm that applicable transportation emissions sources not included in the inventory and reported as such are, indeed, de minimis.

34. Confirm, based on available documentation and by vehicle type, the total consumption of fuels in motor vehicles. If the entity calculates transportation emissions based on vehicle mileage, confirm vehicle mileage records.

35. Confirm that correct and appropriate emission factors have been used for calculating transportation greenhouse gas emissions.

36. Using appropriate sampling techniques and available data, re-compute emissions results for transportation emissions. Compare these results to those reported by the entity.

Indirect Emissions

37. Based on available data (e.g., utility bills), calculate total electricity imports, steam imports, and heating and cooling obtained from district plants by supplier. Use these results and emissions factors provided by those suppliers to calculate indirect emissions resulting from imported electricity, imported steam, and district heating and cooling. Compare this result to that reported by the entity. *NOTE: If the participant chooses to use emissions factors obtained from suppliers, those factors should be confirmed to the extent necessary as determined by the certifier.*

38. Use best professional judgment and generally accepted methodologies to calculate and evaluate other indirect emissions reported by the entity.

Process Emissions

39. Confirm that process emissions are calculated according to an estimation methodology consistent with Registry guidance.

40. Confirm that correct and appropriate emission factors have been used for calculating process emissions.

41. Confirm activity data used to calculate process emissions. This may include comparing product outputs or operating times against order and shipping records and facility calendars.

42. Using appropriate sampling techniques and available data, re-compute emissions results for process emissions. Compare these results to those reported by the entity.

43. Confirm that all process emissions sources not included in the inventory and reported as such are, indeed, de minimis.

Fugitive Emissions

Note: *Given the wide variety of sources that may be considered fugitive, there is no single method to estimate fugitive emissions. It is expected that certifiers will be flexible and will use their best professional judgment in reviewing strategies and methodologies for making these calculations.*

44. If applicable and available, using maintenance records for streams involving greenhouse gases, estimate quantities of possible leaks. Compare these results to those reported by the entity. Example: A pipeline leak that was repaired. Such a leak would have a maintenance

record indicating when the leak was identified. Further investigation would yield the amount of gas passing through the pipeline and an estimate of the quantity lost to the atmosphere.

45. If applicable, estimate the quantity of refrigerants released into the atmosphere due to leakage. (See Chapter 3 of the General Reporting Protocol for procedures.)

46. Where applicable, using accepted emissions factors, calculate fugitive emissions results for other fugitive emissions sources. Compare these results to those reported by the entity.

47. Confirm that fugitive emissions sources not included in the inventory and reported as such are, indeed, de minimis.

E. Evaluating and Reporting Findings

Note: *This section of the protocol addresses evaluating and reporting the certification findings. A sample certification report outline is also presented in Attachment 3.*

48. Review actions taken to complete each step of the protocol. For each protocol step assigned, summarize your conclusions regarding the participant's level of consistency with Registry guidelines. (Use Table 5 to summarize your opinion regarding the level of consistency being achieved for each topical area.)

49. Review and discuss any unresolved compliance issues with appropriate participant personnel. Note explanations and disposition of such issues in the working papers.

50. Develop a written list of your exceptions and observations and use these as a basis for discussion with other team members prior to the exit conference. As a team, evaluate the data used to substantiate the certification results and identify any patterns or trends in the results. In addition, evaluate your findings and observations based on the information gathered during Understanding Management Systems.

51. As a team, develop a complete list of exceptions and observations, which are clearly and concisely written and substantiated by certification data gathered.

52. Compare certifier-calculated greenhouse gas emissions with reported emissions to assess if there are any material differences. A discussion on minimum quality standard may be found beginning on page 3 of this document. *Note: Although it is the role of the certifier to identify to the participant any concerns or discrepancies with reported emissions results and inventories, it is not the role of the certifier to recommend an adjusted result or inventory.*

53. Review all exceptions and observations with the participant's greenhouse gas emissions contact, and present them to the participant's management during the exit conference. Exceptions and observations should also be included in the certification report provided to the participant. This report should describe strengths and exceptions, although it is not the role of the certifier to recommend an adjusted result or inventory.

Table 5: Certification Opinion

For each protocol topic, develop an opinion as to the degree of consistency with Registry guidelines of the participant using the guidance provided below. Place a check (√) in the most appropriate category or record N/A (not applicable). Document your opinion in your working papers.

	Consistency with Registry Reporting Guidelines		
Protocol Topic	Meets	Substantially Meets	Does not Meet
Identifying Sources			
Stationary Combustion Emissions			
Transportation Emissions			
Indirect Emissions			
Process Emissions			
Fugitive Emissions			
Overall Opinion			

Description of Certification Opinion Categories

***Meets* Applicable Provisions**
This opinion applies when, based on the certifier's review, the entity is judged to be in compliance with all (or virtually all) of the applicable Registry provisions. For those very few provisions where isolated exceptions are noted, these departures are determined to be occasional and anomalous, and are considered to be inconsequential in comparison to the overall level of consistency achieved. It is intended for entities that are found to be fully consistent with applicable provisions. This opinion indicates that greenhouse gas emissions reports are free of material misstatement.

***Substantially Meets* Applicable Provisions**
This opinion is given when the certification results substantiate a high degree of consistency with Registry provisions. It applies when, based on the certifier's review, the entity is consistent with most of the applicable provisions reviewed but only a few provisions were not satisfied. Exceptions deemed not to be significant have been found. These departures are considered to represent isolated exceptions in an otherwise consistent program. This opinion indicates that greenhouse gas emissions reports are free of material misstatement. (Example 1 on page 4 would have an overall opinion in this category.)

***Does not Meet* Applicable Provisions**
This opinion applies when, based on the certifier's review, many exceptions to applicable Registry provisions are noted, including several significant departures from established provisions, the absence of several required programs, or prolonged inattention to the resolution of previously identified issues. This opinion indicates that greenhouse gas emissions reports are not free of material misstatement. (Example 2 on page 5 would have an overall opinion in this category.)

Attachment 1: Exhibit List

Facility: _____ Date: _____

Certifier: _____

Exhibit	Description

Attachment 2: Applicable Statute

CA HSC Part 4 Chap. 6	California Climate Action Registry
CA HSC Part 4 Chap. 6 Art. 1	Findings and Declarations
CA HSC Part 4 Chap. 6 Art. 2	Purposes
CA HSC Part 4 Chap. 6 Art. 3	Climate Action Registry
CA HSC Part 4 Chap. 6 Art. 4	Procedures for Reporting, Monitoring, and Verifying Emissions
CA HSC Part 4 Chap. 6 Art. 5	Annual Report
CA HSC Part 4 Chap. 6 Art. 6	Responsibilities of the State Energy Resources Conservation and Development Commission

Attachment 3: Sample Certification Report Outline

At the completion of certification activities, the certifier must submit a certification report to the board of directors or other governing body of the participant. This report serves multiple purposes, including providing an independent statement of no material misstatement (or of material misstatement, as warranted) and providing recommendations for improvement to a participant's greenhouse gas emissions reporting systems or methods to better conform to Registry protocols. This attachment is a sample certification report outline that may be followed by a certifier when reporting to the Registry and a participant.

Part I: Public Report

The report may be split into two parts, with one for public release and the other meant solely for the Registry and participant to retain in confidence. Whether the final report is structured in this way is to be specified within the contracting process between the participant and certifier. In any case, however, the report should contain the information included in this outline.

A. Certification Information

This section would include basic information, including the name of the participant, name of the certifier, period of review, and dates of certification.

B. Participant Information

This section would include an overview of the participant and its operations, including activities undertaken by the participant, number of operational sites and locations, and other information about the participant.

C. Basis of Certification Opinion

This section would include the procedure used by the certifier to develop the certification opinion. Information on sites visited, documentation reviewed, and operations and estimation methods reviewed should be included. The scope of the review should also be specified, including whether emissions were reviewed against only Registry guidelines or against any other protocols or guidelines in addition to the Registry's guidance.

D. Certification Opinion

This section would include the certifier's final certification opinion, including, if applicable, any exceptions or considerations. The certifier should also make a statement regarding the systems in place for gathering and reporting greenhouse gas emissions data. The opinion should include a statement regarding material misstatement of greenhouse gas emissions results. The certifier may include Table 5 in this section of the report.

Part II: Private Report

This part of the report would include any exceptions or findings that were not relevant to the certification opinion. It would also include any recommendations for improvement made by the certifier to assist the participant in development of future greenhouse gas emissions estimates and results. This part is meant to be a detailed certification report, including any concerns, discrepancies, or other comments the certifier may have. This part may follow the headings in Table 5 in addressing any observations, discrepancies, or exceptions and should explain the findings marked in Table 5 for each type of greenhouse gas emissions.

Attachment 4: Separable Copies of Tables

Table 1. Document Checklist (List of Records to Review)
The following list is an example of the records that should be reviewed during certification of greenhouse gas emissions at the facility. Some of these documents may be reviewed during pre-certification preparation activities, while others may be reviewed during onsite certification activities. Not all records may be applicable to each facility.
General and Management Systems
Organizational chart/job descriptions for greenhouse gas emissions reporting management personnel
Greenhouse gas emissions reporting plan
Previous baseline and annual greenhouse gas emissions reports
Description of the methodologies used to quantify emissions, including, as appropriate, the emission factors and assumptions used in the calculations
Description of any significant emissions changes above the Change Threshold. Examples of causes for significant emissions changes include extended process shutdowns, acquisitions/divestitures, outsourcing/insourcing, plant closures/openings, process changes, changes in reporting boundaries, or changes in calculation methodologies
Stationary Combustion Emissions
Utility bills (natural gas, etc.)
Fossil fuel consumption by type for onsite fuel consumption
Transportation Emissions
Fuel consumption, or vehicle mileage, (each by type of vehicle) for transportation-related emissions
Vehicle types and fuels
Indirect Emissions
Data on the consumption of imported energy (electric bills, etc.)
Imported energy sources
Emissions factors for energy suppliers
Process Emissions
Activity data used for calculating process-related emissions
Emissions sources and control equipment in service (including control equipment efficiency)
Fugitive Emissions
Stream compositions
Leak test results or maintenance practices
Types of equipment and equipment counts

Attachment 4: Separable Copies of Tables

Table 2. Tour Checklist
This checklist is provided as a reference for things to look for during the "orientation tour." The list is not all inclusive; it is meant to serve as an aid or tool to remind the certifier of the major considerations during the tour.
Greenhouse Gas Emissions Sources
Stationary combustion sources: boilers, furnaces, burners, turbines, heaters, incinerators, engines, flares, etc.
Mobile combustion sources: automobiles, trucks, trains, aircraft, ships, etc.
Electrical facilities and usage areas
Chemical processes
Types of fuels used and sources
Fugitive emissions sources: wastewater treatment, air conditioning/cooling units, gas pipeline leaks, process vents/relief valves, etc.