DOE Sustainability Data Verification Guidance

Updated: ***July 2023***

U.S. Department of Energy
Sustainability Performance Office

Contents

Sustainability Data Verification Overview

Each year, the Department of Energy (DOE) is required to report progress towards Federal sustainability goals to Congress, the White House Council on Environmental Quality (CEQ), and the Office of Management and Budget (OMB). To support this effort, the Sustainability Performance Office (SPO) collects annual sustainability data from each DOE site and consolidates this data to form a single unified dataset for the Department. Ultimately, this data forms the basis of annual reports, plans, and performance status. As such, the accuracy of site reported data is critical. To ensure accuracy, the Department verifies sustainability data via an internal second-party verification process with a focus on improving internal accounting and reporting practices that ensures a statistical confidence level of 95 percent. This document outlines DOE's sustainability data verification process.

SPO selects sites and specific sustainability data categories for verification based on the selection process outlined in Section I. Selected sites are notified via DOE's Sustainability Dashboard (Dashboard) in the summer and must upload a methodology document and supporting documents/source records for each selected data category in the winter to the Dashboard's Quality Control Status module.

Site submitted verification data is validated through a second-party review performed by a Verification Team (VT) comprised of program nominated representative (i.e., usually the program lead) and SPO. The VT compares reported data in the Dashboard to source records and evaluates data reporting methodologies. Specific instructions for the VT are outlined in Section III. If accounting and reporting issues are identified for a particular data category, the SPO team and program lead will work with the site to improve the site's accounting and reporting process. Within the next two years, the site will be selected to verify the same category to determine if process improvements were integrated.

The detailed current year verification process schedule is posted on the Dashboard's Reporting Schedule page. The schedule will also include SPO's training session on verification documentation best practices outlined in Section II.

I. Selection Process

The following steps outline the process utilized by SPO for identifying candidate sites and data categories for DOE's sustainability data verification.

Step 1: Establishing a Sampling Size

Site data representing approximately 10 percent of DOE's FY greenhouse gas emissions and 10 percent of DOE's FY water use will be selected as a sample size for the verification process. Prior FY data serves as a conservative proxy for current FY sustainability data which will not be known at the time of selection. Data categories are subject to change and may expand (e.g., sustainable buildings, on-site renewable systems). If the need to expand the categories arises, SPO will coordinate with the DOE Sustainability Working Group.

Step 2: Selecting Sites

A mixed sampling of small and large sites is selected with the objective of not selecting sites that participated in recent verification reviews. To meet the required sample size and keep the document requests low, sites are likely to be selected every two to three years. However, if SPO has identified process related issues in a previous verification selection, the site will be selected for the same category within two years to ensure process improvements have been incorporated. For sites with multiple locations, SPO will aim to select one location for verification to alleviate the burden and coordination required to produce documentation across multiple locations.

Step 3: Selecting Data Categories

Once candidate sites are selected, data categories are assigned to meet the sample size requirements while attempting to minimize the amount of data requested from each individual site. If a site was selected in a previous verification request, the current request will attempt to focus on different categories of data whenever feasible – unless a process related issue has been previously identified.

II. Documentation Best Practice

To ensure the verification process is conducted with the greatest amount of accuracy and efficiency, please follow the guidelines below when preparing verification supporting documentation. SPO will hold a training session after sites have been notified of selection to help guide selected sites in preparing their verification methodology document and supporting documents/source records.

1. **Point of Contact (POC)** – List a POC for each category (including email and phone number) so the VT can follow up with questions or clarification, as needed.
2. **Methodology Overview Document** – Provide a document that describes the methodology and process of how the supporting documents/source records were used to calculate the values submitted into the Dashboard. If the values do not match the Dashboard, please explain the reason for the difference. All bills should be referenced in the methodology (i.e., crosswalk the values with the bill name).
3. **Assumptions/Calculations/Methodologies** – Provide all assumptions, calculations, and methodologies used to manipulate base data to the form required for Dashboard reporting (e.g., heating demand in therms converted into natural gas consumption.) Explain any adjustments due to weatherization or incorrect meter readings. Ensure all numbers are labeled with units. If costs are calculated using a going rate, the value and source for the rate should be provided.
4. **Specify Conversion Factors** – Include all conversion factors being used. If conversion factors other than the values used in the Dashboard are used for calculations, please specify, and provide a brief explanation. The standard conversion factors used for calculations can be downloaded from the Dashboard's Calculation Factors page.
5. **Bills/Meter Readings, etc.** – Provide documentation for all months requested to verify both usage and cost, when applicable. If submitting scanned copies of bills, receipts, meter readings, etc., please submit one PDF file with all scanned copies of a given document type (i.e., group by category/location). **All PDF files of scans, photographs, and hand-written documents must be accompanied by an Excel file or Word Document with the relevant values typed.**
6. **Tracking Tools –** Provide relevant reports from internal tracking systems and tools, such as chemical inventory, HR records for employee population, EPA's LandGEM output, spreadsheets, etc.
7. **Fiscal Year Data** – Provide data on a federal fiscal year basis (October 1 – September 30). For data that is not structured by the Federal fiscal year, please provide a description of the methodology used to adjust the timeframe. If only one quarter of data is requested, please only provide data for the months requested. For data that overlaps quarters, please provide a description of the methodology used for the quarter figure. If you are submitting fiscal year or Q4 data and are using estimates as you await bills, please provide a description on how the estimates were determined.
8. **Highlight Content** – On scanned bills/meter readings, clear notes (via highlighting, circling, or underlining in red) should be made to indicate which data on the bill, meter reading, etc. is used for Dashboard reporting. Please make sure to explain what is being highlighted and provide clarifications in the methodology document.

General Methodology Template

Use this template as an example layout for the submission of the methodology for each category your site has been selected to provide. Page one or two (if a cover is provided) should include POC information for the relevant categories. The following pages should include a methodology overview, step-by-step breakdown of the calculations (including assumptions/ adjustments), and an explanation of the relevant documentation/attachments used in the calculations for each category. Please refer to the Sample Methodology Document on the Dashboard for a detailed example.

Subject Matter Experts

Point of Contact (POC)	Category 1	Category 2
Name		
Job Title		
Email Address		
Phone Number		

I. Methodology Overview

Briefly describe the process for obtaining the source data as well as a detailed explanation of identified issues/adjustments (e.g., broken meters) and plans for mitigation.

For example: *Billed electricity that is allocated to "LAB" is computed. The portion of this total that is allocated to DOE goal subject buildings is calculated using meter data for the goal subject buildings. The remaining portion of electricity is designated as excluded facilities, per DOE definition.*

II. Calculations & Assumptions

Provide the step-by-step calculations used to compute the value(s) for the category (i.e., usage and cost) and a comparison to the value(s) submitted in the Dashboard. Clearly state any assumptions and unit conversion factors used as well as label units on all tables and figures. If the value(s) in the verification documentation and Dashboard differ, please explain.

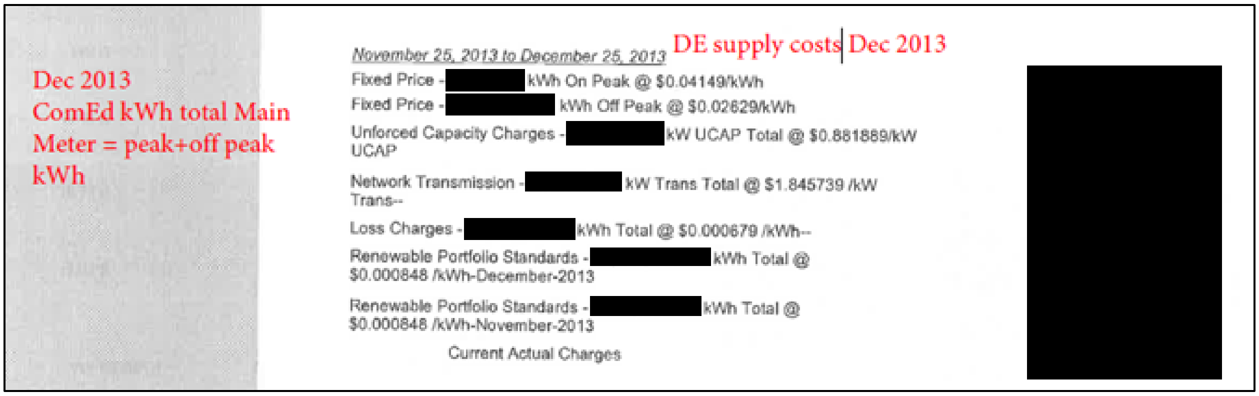
Include an explanation of how all bills are used in the calculations and a list of attachments, if applicable. Provide a descriptive name for uploaded support documents by include type (e.g., bills, meter readings) and relevant period (e.g., month, year). Clearly mark all documents to indicate which data on the bill, meter reading, etc. is being used for the requested verification category and reporting in the Dashboard.

For example: *Sample site's Contractor pumps raw water from the Blue River to the site via a set of pipelines. The water is treated on-site and produces potable water for the site. Water gallons are tracked using a set of water meters from the river and in the Treatment Plant. Potable water production data is compiled from Monthly Operational Reports that are part of Sample Site's Public Water System permit. For cost estimates, water treatment chemicals, labor cost, and raw water pump electric cost are summed to calculate a total cost, then divided by twelve for a monthly cost.*

Example: Natural Gas Reporting Comparison Table

Category 1	Utility Bill Usage	Utility Bill Cost	Dashboard Usage	Dashboard Cost
Natural Gas (Q1)	15,003 ccf	$10,000.90	1,500.3 Mcf	$10,000

Example: Electricity bill with markings in red text to indicate which data is used in the calculation.



Dec 2013
ComEd kWh total Main Meter = peak+off peak kWh

November 25, 2013 to December 25, 2013 DE supply costs Dec 2013

Fixed Price - [redacted] kWh On Peak @ $0.04149/kWh

Fixed Price - [redacted] kWh Off Peak @ $0.02629/kWh

Unforced Capacity Charges - [redacted] kW UCAP Total @ $0.881889/kW UCAP

Network Transmission - [redacted] kW Trans Total @ $1.845739 /kW Trans--

Loss Charges - [redacted] kWh Total @ $0.000679 /kWh--

Renewable Portfolio Standards - [redacted] kWh Total @ $0.000848 /kWh-December-2013

Renewable Portfolio Standards - [redacted] kWh Total @ $0.000848 /kWh-November-2013

Current Actual Charges

[redacted]

III. Second-Party Verification Process

The VT is responsible for conducting the second party verification of a randomly selected sample of sustainability data to ensure a confidence level of 95 percent through continuous improvement of data collection and reporting. The VT is comprised of the following program entities (only when their sites are selected):

- Office of Cybersecurity, Energy Security, and Emergency Response (CESER)
- Office of Energy Efficiency & Renewable Energy (EERE)
- Office of Environmental Management (EM)
- Office of Fossil Energy & Carbon Management (FECM)
- Office of Legacy Management (LM)
- Office of Nuclear Energy (NE)
- National Nuclear Security Administration (NNSA)
- Office of Science (SC)
- Office of Management (MA) / Sustainability Performance Division (SPO)

SPO's Responsibilities

Upon receipt of the site supplied verification data, SPO will conduct a review of submitted source records on behalf of the VT. The review will crosswalk the data in the submitted source records (e.g., invoices, bills, methodologies, etc.) to the relevant Dashboard records to ensure completeness, accuracy, and consistency.

During the SPO review, SPO will check the summation of data from site source records to verify consistency. In cases where assumptions were made to approximate the data reported (e.g., material balances), SPO should evaluate how well the results represent an actual measurement while estimating potential error (i.e., noting any bias that may have skewed data). SPO may also request additional site data or records through the respective Program Office and provided site POC.

If there is a discrepancy between the recorded data and supporting records, the SPO shall:

1. Document the discrepancy if the error is greater than a material threshold. For example, a large site with a discrepancy of 5 percent or greater will impact the Department total, while for a small site a discrepancy of 10 percent or greater may have minimal impact on the Department.

2. Attempt to resolve discrepancies greater than a material threshold by requesting the site identify the source of the discrepancy or requesting and reviewing additional records to support revisions to the submitted data.
3. SPO and the program VT members will collectively review all discrepancies, including those under the material threshold, and decide on the need for additional actions on a case-by-case basis.

SPO will document findings and prepare a summary report for distribution to VT members. The summary report will include corrective actions taken by SPO and process recommendations for the sites, which the VT members are to review for accuracy before finalization.

VT's Responsibilities

The VT will assist SPO in the review process by ensuring selected sites provide requested information and advising if additional actions are needed for identified discrepancies. Additionally, the VT will review SPO's verification summary report for accuracy before finalization. Once the summary report is finalized, VT members must acknowledge approval by digitally signing the signature document attached to the final summary report – to be used for internal records.

If a site is identified for process improvement, respective VT members are expected to work with their sites to improve internal accounting and reporting practices. These sites will be selected to verify the same category within the next two years to determine if process improvements have been integrated. Annually, VT members will assess the verification processes and provide feedback for continuous improvement of the verification process.