

CEUS Results Workbook Data Description

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Table of Contents

CEUS Results Workbook Data Description.....	1
Worksheet Descriptions	1
ctrlSegInfo.....	1
Summary.....	1
exp16Day.....	1
exp8760.....	2
expConLoad.....	2
expEndUse8760.....	2
expEUI.....	3
expGas365.....	3
expIntensity.....	3
expMnthDT.....	3
expMnthDTDates	4
expMonthly.....	4
expPeakLoad	4
expPSF.....	4
expSqFt.....	5
Workbook Overview	5
EIs, EUIs, and Related Data.....	5
Load Shape Data	5
Other Data	6

CEUS Results Workbook Data Description

This document presents an overview of the data contained in the CEUS results workbooks that can be downloaded from the CEUS on the Web internet site. The data contained in these workbooks were generated using The DrCEUS System for the California Energy Commission's California Commercial End-Use Survey (CEUS), 2006. A detailed discussion of each datasheet is presented first, followed by an overview of the workbook.

Worksheet Descriptions

Each CEUS results workbook consists of 15 worksheets, which are discussed in this section according to the order in which they appear in the workbook. Field names within the worksheets are noted with parentheses.

ctrlSegInfo

This is the first table in the workbook. This table has three records. The first record contains the name of the segment represented by the data. The second record contains a description of the segment. The third record contains the year of analysis for the sites that comprise the segment. The analysis year will be 2002 for all CEUS results workbooks, since they were generated using normalized weather that utilized a 2002 calendar.

Summary

The *Summary* tab pulls together data from many of the other tabs found in this workbook. Included are estimates of square footage, EUI, EU, energy distribution, peak load, connected load, and energy usage by end use at the segment level. The data are broken down into two tables by fuel type: electric and gas. The totals presented at the bottom of each table are segment-level results. The cell formulas remain in the summary table so the user can follow the sources of data used to generate this table.

exp16Day

The *exp16Day* tab contains the 16-day data by segment (SegID), season (Season), day type (Dy), and hour (Hr). The 16-day (four day types by four seasons) definition summarizes 8760 data into four sets of shapes—one for each season (Season) of the year, as defined below.

- 1 ***Winter*** (December, January, February)

- 2 **Spring** (March, April, May)
- 3 **Summer** (June, July, August, September)
- 4 **Fall** (October, November)

These seasonal shapes are further aggregated by type of day (Dy), as defined below.

- 1 **Typical Day** (weekdays, not holidays)
- 2 **Hot Day** (hottest day of the period)
- 3 **Cold Day** (coldest day of the period)
- 4 **Weekend** (weekends and holidays)

There are 19 additional fields in this table—one for each of the end uses simulated. Fields are named according to the end use they represent. Fields with no prefix are the electric end uses, while fields with “Gas” as a prefix are the natural gas end uses, for example “Cooking” and “GasCooking.” Electric data are stored in kW. Gas data are stored in kBtuh.

exp8760

This tab contains the whole segment 8760 load shapes for both electric and gas. The fields in this table include the segment ID (SegID), fuel, month (Mth), and day of month (Dy). Results are stored in fields named Hour1 through Hour24, where the numeric value of the field name indicates the hour ending the indicated hour. Electric data are stored as kW and gas data are stored as kBtuh.

expConLoad

This tab contains the connected loads by segment and end use. There are 21 records in this table—one record for each of the end uses simulated, as well as one representing total electric connected load and one representing total gas connected load. Records are named according to the end use they represent. Records with no prefix are the electric end uses, while those with “Gas” as a prefix are the natural gas end uses. Electric data are stored in watts per segment square feet. Gas data are stored in Btu per segment square feet. Also note that heating values are square feet per kBtu and cooling values are square feet per ton.

expEndUse8760

This tab contains the end-use 8760 segment load shapes by fuel and end use. The fields in this table include the segment ID (SegID), end use, fuel, month (Mth) and day of month (Dy). The results are stored in fields named Hour1 through Hour24 where the numeric value of the field name indicates the hour ending the indicated hour. Electric data are stored as kW and gas data are stored as kBtuh.

expEUI

This tab contains the end-use energy use index (EUI) data. The data are stored by segment ID (SegID). There are 21 records in this table; one for each of the end uses simulated as well as one representing total electric EUI and one representing total gas EUI. The records are named to indicate the end use they represent. Records with no prefix are electric end uses and fields with a “Gas” prefix are natural gas end uses. Electric data are stored in kWh per segment-conditioned square feet. Gas data are stored in kBtu per segment-conditioned square feet.

expGas365

This tab contains the whole segment daily gas send out (SendOut) by month (Mth) and day (Dy). These data are stored as kBtu per day. The data in this table are only available to the user in the export workbook. There is no graphical representation of these data in the interface.

expIntensity

This tab contains end-use energy intensities by end use. The data are stored by segment ID (SegID). There are 21 records in this table—one for each of the end uses simulated, one representing total electric intensity, and one representing total gas intensity. Records are named to indicate the end use they represent. Records with no prefix are electric end uses. Records with a “Gas” prefix are natural gas end uses. Electric data are stored in kWh per segment square feet. Gas data are stored in kBtu per segment square feet.

expMnthDT

This tab contains the monthly day-type data by segment (SegID), month (Mth), day type (Dy), and hour (Hr). As with the 16-day data, there are 19 additional fields in this table—one for each of the end uses simulated. Fields are named to indicate the end use they represent. Fields with no prefix are the electric end uses. Fields with “Gas” as a prefix are the natural gas end uses. Electric data are stored in kW. Gas data are stored in kBtuh. The monthly day-type definition summarizes 8760 data into 12 sets of shapes—one for each month of the year. These monthly shapes are further aggregated by type of day (Dy), as defined below.

- 10 ***Average Weekday*** (weekdays, not holidays)
- 11 ***Saturday***
- 12 ***Sunday***
- 13 ***Holidays***
- 14 ***Peak Day*** (day of the month with the maximum kW)
- 15 ***Hot Day*** (any weekday, not holiday, with highest temperature)
- 16 ***Cold Day*** (any weekday, not holiday, with lowest temperature)

It should be noted that the first four day types are mutually exclusive and represent total annual segment consumption if multiplied by the number of days each shape represents and summed. The last three shapes are not mutually exclusive and should not be used in calculating annual consumption.

The values used to represent the day types for the monthly day-type results were assigned using a different numbering system in order to avoid confusion with the day-type identifiers used in the 16-day format. This is because the definitions of day type differ between the two levels of aggregation.

expMnthDTDates

This tab contains data associated with the monthly day-type data found in the table described above. The data in this table are stored by segment (SegID), month (Mth) and day type (Dy). Included in the table are the number of days found in each day type by month and the dates on which the peak day, hot day, and cold day occurred in each month.

As mentioned above, the number of days in each day type can be multiplied by their respective shapes for the first four day types, and summed to represent the total annual consumption for the segment. The remaining three shapes are informational in nature and must not be included in this calculation.

expMonthly

This tab contains the whole segment monthly electric and gas usage. These data are stored by segment ID (SegID) and data type (Type). The Type field indicates the units in which the data are stored. These units include kW, kWh, and kBtuh. There is a field for each month of the year using a three-character representation for the month.

expPeakLoad

This tab contains the whole segment peak electric and gas usage by end use. The data are stored by segment ID (SegID). There are 21 records in this table—one for each of the end uses simulated, one representing total electric peak load, and one representing total gas peak load. Records are named to indicate the end use they represent. Records with no prefix are electric end uses. Records with a “Gas” prefix are natural gas end uses. Electric data are stored in watts per segment square feet. Gas data are stored in Btu per segment square feet. These values represent the maximum annual hourly load per square foot for the segment.

expPSF

The data stored on this tab represent the equivalent of a DOE-2 PS-F report. These data are stored by segment ID (SegID), fuel, month (Mth), and type of data (Type). The Type field

corresponds to DOE-2 report labels and indicates the type of data stored in each record. There are 14 other fields representing the data for the individual end uses simulated by the site processor. These end uses do not correspond directly to the end uses found in the DOE-2 report.

expSqFt

The data stored on this tab are segment-level floor areas. The data are stored by segment ID (SegID). There are 20 records in the database. The first is Premise. This record represents total premise square feet for the segment. The other 19 records represent conditioned square feet by end use, where the name of the record indicates the end use. Records with no prefix represent the electric end uses, while those with a “Gas” prefix represent natural gas end uses. These data are stored in square feet.

Workbook Overview

The worksheets in the CEUS result workbooks can be grouped according to the category of information that they present. These categories and the relevant worksheets are:

EIs, EUIs, and Related Data

Annual energy use, total and conditioned floor areas, and connected and peak load results are contained on these tabs of the workbook:

- **Summary:** An overall summary of end use and total segment energy intensities, floor areas, energy use, loads, and end-use percentages.
- **expConLoad:** End-use connected loads, corresponding to nameplate values.
- **expEUI:** Annual end-use energy-use indices (EUIs), where energy intensities are based on “conditioned” (i.e., has the end use) floor area.
- **expIntensity:** End-use annual energy intensities (EIs), where energy intensities are based on total premise floor area.
- **expPeakLoad:** End-use peak loads, which represent the actual highest usage and are non-coincident between end uses.
- **expSqFt:** Conditioned floor area (end-use floor stock).

Load Shape Data

Load shapes for various bases are contained on these tabs of the workbook:

- **exp16Day:** 16 day-type (four day types × four seasons) end-use shapes data.
- **exp8760:** 8760 whole-segment electric and gas shapes.

- **expEndUse8760:** 8760 end-use electric and gas shapes.
- **expGas365:** 365-day gas usage.
- **expMnthDT:** Monthly day-type results (four day types × 12 months, plus additional day types).
- **expMnthDTDates:** The actual dates associated with the monthly day-type results in expMnthDT.
- **expMonthly:** Calendar month peak demand, electricity use and natural gas use.

Other Data

Additional information is contained on these two tabs of the workbook:

- **ctrlSegInfo:** The name of the results and the analysis year (2002 for all).
- **Summary:** A summary of items pulled from many of the tabs found in the workbook. It is a table by end use showing intensities, square footage, energy usage, etc. in one place for the users review.
- **expPSF:** Summary of end-use results following the format of the DOE-2 PS-F report.