

Developing Energy Consumption Estimates by End Use for EIA's Buildings Surveys

Residential Energy Consumption
Survey (RECS)

Commercial Buildings Energy
Consumption Survey (CBECS)

RECS

- Fielded in 1978, 1980, 1981, 1982, 1984, 1987, 1990, 1993, 1997, 2001
- Next RECS: 2005

RECS Universe:

Occupied Primary Housing Units:

- Covered:
 - Single family detached homes
 - Town homes
 - Mobile homes
 - Individual apartment units

RECS Universe:

Occupied Primary Housing Units:

- Not covered:
 - Second homes
 - Vacation homes
 - Group quarters (college dorms, military barracks)
 - Common areas in apartments

RECS Sample Design

- Area probability design
 - 116 primary sampling units
 - 1,460 secondary sampling units

RECS Household Data Collection:

- Personal on-site interview with occupants
- Rental agent contacted to verify data on units in apartments buildings

RECS Energy Consumption and Expenditures Data

- Obtain billing data from suppliers
- No Submetering for end-use data
- Use regression-based procedure to estimate consumption by end use

RECS End Uses

- Space heating
- Water heating
- Air conditioning (electricity)
- Appliances
- Refrigerators (electricity)

CBECS

- Fielded in 1979, 1983, 1986, 1989, 1992, 1995, 1999
- Next CBECS: 2003

CBECS Universe: Commercial Buildings

- Over 1,000 square feet
- Non-residential buildings
- Non-industrial buildings
- Non-agricultural buildings

CBECS: Examples of In-scope Buildings Types

- Office/professional buildings (including government buildings)
- Laboratories
- Food sales
- Food service

CBECS: Examples of In-scope Buildings Types, Continued

- Retail
- Service
- Strip malls and enclosed malls
- Lodging (hotel, motels, and college dorms)

CBECS: Examples of In-scope Buildings Types, Continued

- Public assembly
- Warehouses
- Religious worship
- Schools

CBECS: Examples of In-scope Buildings Types, Continued

- Public order and safety (fire stations and police stations)
- Hospitals and nursing homes
- Vacant buildings
- Other

CBECS Out-of-scope Structures

Buildings

- Under 1,000 square feet
- That are primarily residential
- That are primarily industrial
- That are primarily agricultural
- On military bases and other secure sites
- On industrial establishments

CBECS Out-of-scope Structures, Continued

- Water towers
- Parking garages
- Power plants
- Grain silos
- Mobile or temporary offices

CBECS Sample Design

- Area probability design
- Supplemented by a list sample
 - Large buildings
 - Buildings on large universities
 - Hospitals
 - Government buildings

CBECS Buildings Characteristics Data Collection

- Mostly personal interview (telephone interviews some years)
- May interview multiple respondents for one building

CBECS Energy Consumption and Expenditures Data:

- Obtain energy consumption and expenditures data from occupants
- Contact supplier when occupants cannot provide data
- No Submetering for end-use data
- Use model/regression based procedure to estimate consumption by end use

CBECS End Uses

- Space heating
- Water heating
- Air conditioning/cooling
- Cooking (electricity and natural gas)
- Appliances/other

CBECS End Uses, Continued

Electricity: additional end uses

- Ventilation
- Lighting
- Refrigeration
- Office equipment