

Comparisons across surveys from the 1992 *Commercial Buildings Energy Consumption Survey (CBECS)* through the 2018 CBECS

Table 6. Energy sources, end uses, and consumption

	1992	1995	1999	2003	2012	2018
Energy sources	<p>Which energy sources are used in the building:</p> <ul style="list-style-type: none"> • Electricity • Natural gas • Fuel oil, diesel, or kerosene • Bottled gas, liquefied petroleum gas (LPG), or propane • District steam • District hot water • District chilled water • Wood • Coal • Photovoltaic cells • Solar thermal panels • Other (specify) 	<p>Same as 1992, except removed <i>photovoltaic cells</i></p>	<p>Same as 1995, then which sources were used for which uses</p>	<p>Same as 1999</p>	<p>Same as 1999, except just used term <i>solar</i> instead of <i>solar thermal panels</i></p>	<p>Same as 2012, plus a follow-up question for type of solar:</p> <ul style="list-style-type: none"> • Solar panels used to generate electricity • Solar thermal energy
Energy end uses	<p>Of the energy sources, which ones are used for:</p> <ul style="list-style-type: none"> • Main heating • Secondary heating • Air conditioning • Domestic hot water heating • Commercial or institutional cooking or food serving • Manufacturing • Electricity generation 	<p>Same as 1992</p>	<p>Whether any energy used for:</p> <ul style="list-style-type: none"> • Heating • Air conditioning • Domestic hot water heating • Commercial or institutional cooking or food serving • Manufacturing 	<p>Same as 1999</p>	<p>Whether any energy used for:</p> <ul style="list-style-type: none"> • Heating • Air conditioning • Heating water for purposes such as washing hands, dishes, or clothes • Cooking • Manufacturing 	<p>Same as 2012</p>
Fuel switching	<p>Building could switch main heating fuel within one week's time to:</p> <ul style="list-style-type: none"> • Electricity • Natural gas • Fuel oil, diesel, or kerosene • Propane • District steam • District hot water • Wood • Other (specify) 	<p>Same as 1992, plus:</p> <ul style="list-style-type: none"> • Coal • Solar 	<p>Not collected</p>	<p>Not collected</p>	<p>Not collected</p>	<p>Not collected</p>

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Special energy technologies	Types of technology: <ul style="list-style-type: none"> • Thermal energy storage • Passive solar features • Geothermal energy • Well water for cooling • Waste incineration to produce energy • Wind generation • Other (specify) 	Not collected	Not collected	Not collected	Not collected, except wind turbines are a response choice in <i>energy generation technologies</i>	Same as 2012
Electricity generation	Whether the building can generate electric power, and if so, how it is used: <ul style="list-style-type: none"> • Emergency back-up only • Only during high electricity demand • Continuously for most of the year 	Same as 1992	Whether the building can generate electricity, whether any energy was actually used for generating electricity, and if so, how it is used: <ul style="list-style-type: none"> • Emergency back-up only • Only during high electricity demand • Whenever electricity was used 	Same as 1999	Same as 1999	Whether the building can generate electricity, the energy sources used to power the generation technology, and how it is used (unless solar or wind): <ul style="list-style-type: none"> • Emergency back-up only • Only during high electricity demand • Whenever electricity was used
Cogeneration	Whether the electric power generating system is also a cogeneration system	Same as 1992	Not collected	Same as 1992	Same as 1992	Same as 1992
Interconnection	Whether the generation system is interconnected with the electric grid	Same as 1992	Not collected	Same as 1992	Same as 1992	Not collected
How generated electricity is used	What happens to the on-site generated electric power: <ul style="list-style-type: none"> • Totally consumed within building • Partially or totally delivered to local electric utility • Partially or totally delivered to other buildings 	Same as 1992	Not collected	Not collected	Not collected	Not collected

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Electricity generation technologies	Wind generation is collected in <i>special energy technologies</i>	Not collected	Not collected	Types of technology: <ul style="list-style-type: none"> • Photovoltaic cells • Fuel cells • Microturbines 	Types of technology: <ul style="list-style-type: none"> • Photovoltaic cells • Fuel cells • Large turbines • Microturbines • Wind turbines • Reciprocating engines 	Types of technology: <ul style="list-style-type: none"> • Solar panels • Reciprocating engine generator • Fuel cells • Large turbines • Microturbines • Wind turbines • Other (specify)
Electricity purchasing	Not collected	Percentage range of electricity purchased from the local utility, whether any electricity is from a non-utility, non-in-house source, and if so, the percentage range from that provider	Whether electricity was purchased from: <ul style="list-style-type: none"> • Local utility • Independent power producer or non-local utility • Someone else, such as a broker Also, percentage of electricity purchased from local utility	Same as 1999	Same as 1999	Not collected
Natural gas purchasing	Whether natural gas was purchased from somewhere other than the local distribution company	Same as 1992	Same as 1992	Same as 1992	Same as 1992	Not collected
Direct purchase natural gas cost	Cost of natural gas purchased from other-than-local distribution company (by components)	Not collected	Not collected	Not collected	Not collected	Not collected
Electricity consumption and expenditures	Data collection from: <ul style="list-style-type: none"> • Estimated cost range from the building respondent • Monthly usage and costs from <i>Energy Supplier Survey</i> (ESS) 	Same as 1992	Data collection from: <ul style="list-style-type: none"> • Annual usage and cost (either numbers or ranges) from the building respondent • Or, if no electricity data provided by the building respondent, monthly usage and costs from ESS 	Data collection from: <ul style="list-style-type: none"> • Annual usage and cost from the building respondent (optional monthly usage on worksheet) • Or, if no electricity data provided by the building respondent, or if the data failed expected usage check, monthly usage and costs from ESS 	Same as 2003	Data collection from: <ul style="list-style-type: none"> • Annual usage and cost from building respondent • Monthly usage and costs from ESS

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Report generated electricity	Not collected	Not collected	Not collected	Not collected	For buildings that generate electricity whenever electricity is used, if the respondent provides electricity usage information for the building, whether the value includes the electricity generated on-site or if it is just purchased electricity	For buildings that generate electricity whenever electricity is used, whether the respondent can report the combined purchased and generated electricity usage or just purchased. If they can report combined, whether they can also report purchased separately, and if so, the value
Natural gas consumption and expenditures	Data collection from: <ul style="list-style-type: none"> • Estimated cost range from building respondent • Monthly usage and costs from ESS 	Same as 1992	Data collection from: <ul style="list-style-type: none"> • Annual usage and cost (either values or ranges) from the building respondent • Or, if no natural gas data provided by the building respondent, monthly usage and costs from ESS 	Data collection from: <ul style="list-style-type: none"> • Annual usage and cost from the building respondent (optional monthly usage on worksheet) • Or, if no natural gas data provided by the building respondent or if the data failed expected usage check, monthly usage and costs from ESS 	Same as 2003	Data collection from: <ul style="list-style-type: none"> • Annual usage and cost from building respondent • Monthly usage and costs from ESS
Fuel oil consumption and expenditures	Data collection from: <ul style="list-style-type: none"> • Estimated cost range from building respondent • Total capacity of all fuel oil storage tanks • Actual monthly usage and costs from ESS 	Same as 1992	Data collection from: <ul style="list-style-type: none"> • Annual usage and cost (either values or ranges) from the building respondent • Or, if no fuel oil data are provided by the building respondent, monthly usage and costs from ESS 	Data collection from: <ul style="list-style-type: none"> • Annual usage and cost from building respondent 	Data collection from: <ul style="list-style-type: none"> • Annual amount purchased and cost from building respondent • Or, if no fuel oil data provided by the building respondent, or if the data failed expected usage check: monthly usage and costs from ESS (but only if fuel oil was used for a major use and the supplier name was provided) 	Data collection from: <ul style="list-style-type: none"> • Annual usage and cost from building respondent • Monthly usage and costs from ESS (but only if fuel oil was used for a major use and the supplier name was provided)

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District steam or hot water consumption and expenditures	Monthly usage and costs from ESS	Same as 1992	Data collection from: <ul style="list-style-type: none"> • Annual usage and cost (either values or ranges) from the building respondent • Or, if no district heat data provided by the building respondent, monthly usage and costs from ESS 	Data collection from: <ul style="list-style-type: none"> • Annual usage and cost from building respondent • For universities and hospitals with a central plant, a separate worksheet collected information about plant inputs and outputs 	Data collection from: <ul style="list-style-type: none"> • Annual usage and cost from building respondent • Or, if no district heat data provided by the building, monthly usage and costs from ESS (but only if district heat does not come from a central plant) 	Data collection from: <ul style="list-style-type: none"> • Annual usage and cost from building respondent • Monthly usage and costs from ESS (if district heat does not come from a central plant)
District chilled water consumption and expenditures	Monthly usage and costs from ESS	Not collected	Not collected	Not collected	Exploratory questions: <ul style="list-style-type: none"> • Whether the chilled water is from the central plant, and if so, whether it is metered for the building's use • Whether it is from a utility, and if so, asked to provide a sample bill 	Not collected
Propane consumption and expenditures	Ranges for amount used and cost from building respondent	Same as 1992	Same as 1992	Same as 1992	Same as 1992	Same as 1992
Wood consumption and expenditures	Ranges for amount used and cost (or whether it was provided free of charge) from building respondent	Same as 1992, plus type of wood: <ul style="list-style-type: none"> • Roundwood or wood logs • Waste wood or scraps • Wood pellets 	Same as 1992	Same as 1992	Same as 1992	Same as 1992