



OLR RESEARCH REPORT

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ENERGY USE BY SET-TOP BOXES

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You asked for the following information regarding set-top boxes:

1. how much energy do they use when they are on and off,
2. how many firms manufacture these devices, and
3. have any states or other jurisdictions established energy-efficiency standards for these devices.

SET-TOP BOXES

A set-top box is a cable, satellite, Internet protocol, or other device that primarily receives television signals from a specific source and delivers them to a consumer display or recording device, such as a television or digital video recorder. Most set-top boxes are given to consumers as part of their contract with a service provider (e.g., cable company), rather than sold independently at retail stores. The U.S. Department of Energy (DOE) estimates that 71% of U.S. households have set-top boxes in their homes.

Energy Use

A set-top box can use 10 to 40 watts of electricity when on, and its consumption is nearly as great when it is off. This is because, unlike some other consumer electronic products, most set-top boxes sold in this country do not have stand-by or deep sleep modes. DOE estimates that the average annual per household energy use for set-top boxes and

related equipment exceeds 300 kilowatt-hours (kWh). (In Connecticut, the average residential household uses about 9,000 kWh per year.) According to DOE, the national energy use of set-top boxes and related equipment is about 24.8 billion kWh annually, with the amount increasing over time.

Manufacturers

While several dozen firms worldwide manufacture set-top boxes, most of the devices sold in the U.S. are manufactured by Motorola, the Scientific-Atlanta division of Cisco, Samsung, LG, and Pace PLC (a British firm). A list of manufacturers is available at www.itvdictionary.com/stb.html.

Standards

To date, no state has adopted efficiency standards for set-top boxes, although California is considering doing so. DOE has issued a proposed determination that set-top boxes are covered under the federal Energy Policy and Conservation Act. If DOE determines that they are a covered product, it may adopt mandatory efficiency standards for them. Further information about the DOE proposed determination is available at <http://www.gpo.gov/fdsys/pkg/FR-2011-06-15/pdf/2011-14825.pdf>.

The U.S. Environmental Protection Agency (EPA) has adopted voluntary standards for set-top boxes under its EnergyStar® program. Natural Resources Canada (the equivalent to EPA) is considering adopting voluntary or mandatory standards. The European Union has established a Code of Conduct for Digital TV Services, which is a voluntary agreement developed by the European Commission in consultation with set-top box and TV manufacturers and a leading European pay TV service provider. The code sets maximum power consumption levels for standby and sleep modes for set-top boxes, among other things.

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