

Annex F (informative)

Example of schedule and condition for usage of electric appliances

The energy use for electric appliances, such as television and refrigerator, is not the main target of building energy calculation. However, there are a few merits of estimating the energy (electricity) use for electric appliances.

The energy use for electric appliances is a major source of internal heat gain, and can be used for more reliable estimation of internal heat gain. When estimating the amount of electricity, which is sold to the power company and is consumed inside the housing unit, the information on the electricity use (including for electric appliances) is necessary. There is a calculation method of energy use, which takes electric generation only consumed inside the housing unit into consideration. In the calculation of housing units with installed co-generation systems, their total energy efficiency depends upon both thermal load and electrical load including electric appliances, and it is indispensable to assume any schedule and condition for usage of electric appliances.

[Table F.1](#) is an example of the list of electric appliances possessed by a four-member family with their specification and electricity consumptions for each of three daily schedules.

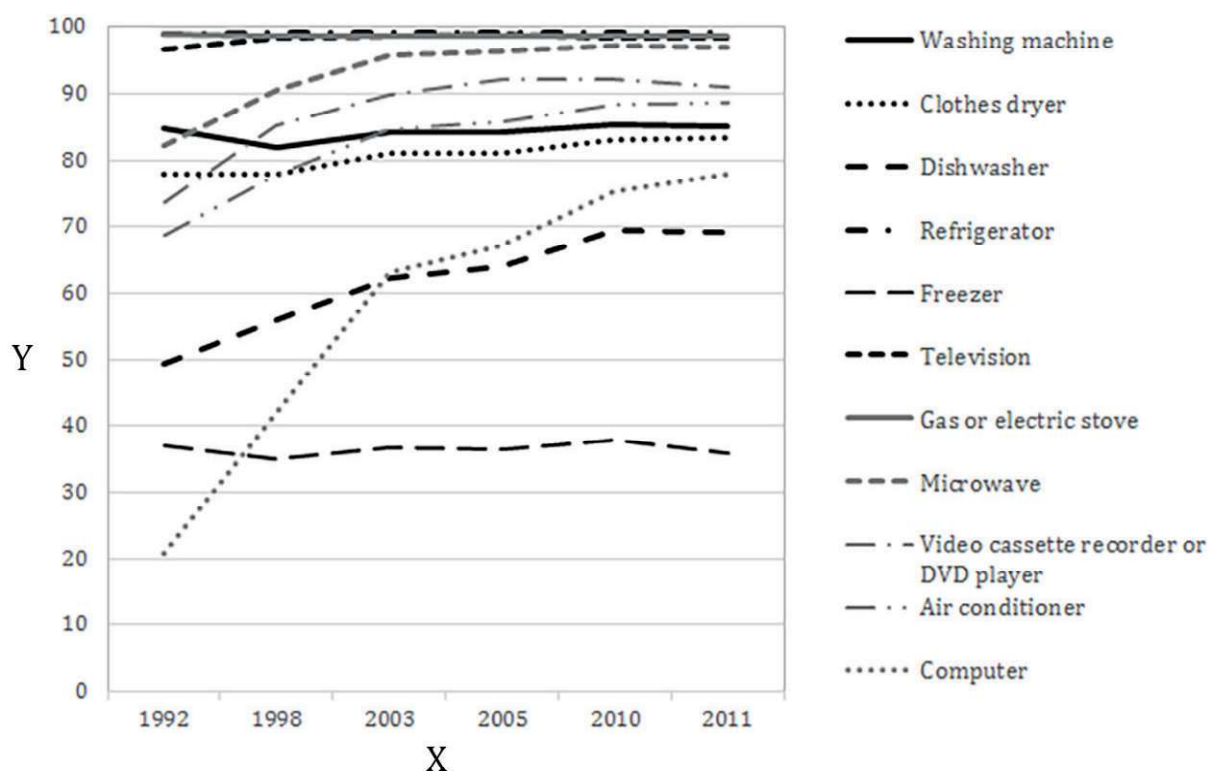
The assumption on the possession of electric appliances and their specifications shall be made by referring to existing statistics of consumer durables, which are constantly published by governments in order to grasp the economic situation. [Figures F.1](#) and [F.2](#) give examples of such general statistics published by governments.

Table F.1 — List of electric appliances and their electricity consumption for four-member family

Appliance	Space	Number	Specification	Rated value		Electricity consumption per day		
				Index	Value	Weekday	Holiday for going out	Holiday for staying at home
Refrigerator	Kitchen	1	400 l	Annual electricity consumption	330 kWh/a	940 Wh	940 Wh	940 Wh
Electric kettle	Kitchen	1	1,2 l	Power consumption	1 200 W	348 Wh	232 Wh	348 Wh
Microwave	Kitchen	1		Maximum power consumption	1 450 W	204 Wh	68 Wh	204 Wh
Electric rice cooker	Kitchen	1		Power consumption for cooking	1 210 W	158 Wh	0 Wh	158 Wh
				Power consumption for keeping warm	15 W			
Television	Living room	1	37-inch liquid crystal	On	125 W	1 021 Wh	432 Wh	1 262 Wh
				Standby	0,15 W			
Computer	Living room	1	Desktop PC	Power consumption	97 W	108 Wh	54 Wh	269 Wh

Table F.1 (continued)

Appliance	Space	Number	Specification	Rated value		Electricity consumption per day		
				Index	Value	Weekday	Holiday for going out	Holiday for staying at home
Audio set	Living room	1		On	28 W	5 Wh	8 Wh	46 Wh
				Standby	0,2 W			
Vacuum cleaner	Living room	1		Power consumption	1 000 W	125 Wh	125 Wh	125 Wh
Iron	Master bedroom	1		Power consumption	1 200 W	85 Wh	0 Wh	85 Wh
Second television	Bedroom 1	1	26-inch liquid crystal	On	63 W	63 Wh	103 Wh	170 Wh
				Standby	0,4 W			
PC game machine	Bedroom 1	1		Power consumption	250 W	103 Wh	174 Wh	293 Wh
Second audio set	Bedroom 2	1		On	28 W	24 Wh	19 Wh	87 Wh
				Standby	0,2 W			
Desk luminaire	Bedroom 2	1		Power consumption	20 W	48 Wh	21 Wh	161 Wh
Washing machine	Washroom	1	Inverter control type	Electricity usage	51 Wh per standard course	26 Wh	26 Wh	26 Wh
Hair dryer	Washroom	1		Maximum power consumption	1 200 W	449 Wh	359 Wh	359 Wh
Heated toilet seat with shower	Toilet 1	1	Instantaneous water heater	Water heater	1 118 W	540 Wh	540 Wh	540 Wh
				Heated seat	45 W			
Heated toilet seat with shower	Toilet 2	1	Instantaneous water heater	Water heater	1 118 W	540 Wh	540 Wh	540 Wh
				Heated seat	45 W			
Total electricity consumption per day						4 785 Wh	3 639 Wh	5 613 Wh

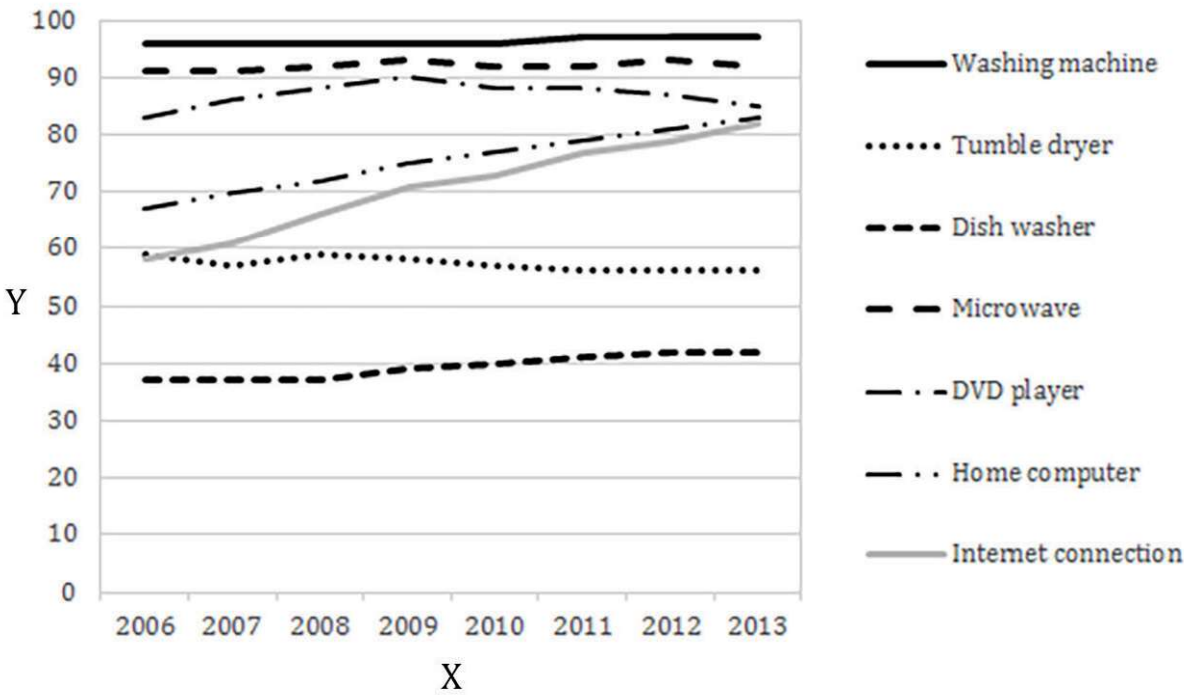


X: Year

Y: Households possessing selected consumer durable items (%)

Source: Julie Siebens, Extended Measures of Well-being: Living Conditions in the United States: 2011, US. Dept. of Commerce, Sept. 2013

Figure F.1 — Statistics for the possession of consumer durables including electric appliances (example 1)



X: Year
Y: Household possessing selected consumer durable items (%)
Source: General Household Survey, Office for National Statistics, UK, 2013

Figure F.2 — Statistics for the possession of consumer durables including electric appliances (example 2)