

STANDBY POWER OF ENERGY CONSUMPTION

Inactive electrical devices with power applied will often be drawing non-trivial amounts of so-called standby power. The issue of standby power cuts across many different equipment types and today represents a significant category of energy consumption. In the residential sector, EES and others estimate standby power at about 10% of overall electrical consumption (¹²¹ pp 19). Often the MEPS standards for devices address the active mode but not the standby mode (¹²¹ pp 18).

TABLE 3.17
Refrigerator energy consumption

Size Range	BAT Model		Median Model		Excess of Median over the BAT	
	Energy Consumption (365 washes)	Water Use	Energy Consumption (365 washes)	Water Use	Energy Consumption	Water Use
5-5.5 kg load	200 kWh	51L	475 kWh	80L	138%	57%
7-8 kg load	180 kWh	60L	318 kWh	59L	77%	-2%

TABLE 3.18
Dishwasher energy consumption

Machine	BAT Model		Median Model		Excess of Median over the BAT	
	Energy consumption (365 uses)	Water use	Energy consumption (365 uses)	Water use	Energy consumption	Water Use
12 places	222 kWh	11.3L	317 kWh	15.5L	43%	37%
14 places	225 kWh	12.3L	275 kWh	13.9L	22%	13%

Note: Use of rated performance for direct comparison of models and with in-home usage can be misleading because rated energy use is often based on an 'eco' mode of use which varies from typical use.

Example: Microwave oven. An example of the significance of standby power can be seen from the following example. Consider a hypothetical domestic microwave oven that uses 3 W in standby and 1 kW when operating. Say that on average it operates for 4 minutes per day. So, the annual active energy used is about 24 kWh. The annual standby energy used is about 26 kWh. Hence an appliance can use more energy in standby than in active operation.

As a rule of thumb, every 11.5 W of standby power used contributes 100 kWh/annum to electrical energy demand. A typical Australian home might have anywhere from 50 W to 200 W of continuous standby power demand from devices including microwave, garage door opener, internet router, stereo, DVD player, television, docking stations, cordless phones, ovens, range hoods, dishwasher, washing machine, printers, hard-wired smoke alarms, rainwater harvesting system, PC, alarm and air conditioner. A home with 200 W total standby power will consume 4.8 kWh/ day on this alone, which is more than a well-sited 1 kW PV system would generate anywhere in Australia.

Source: <http://decarboni.se/publications/zero-carbon-australia-buildings-plan/4-electrical-appliances-and-services>