

Life-Cycle Costs

Why should I replace my old fridge, furnace, toilets, windows, light bulbs...?

Because most new appliances and fixtures – especially those qualifying for the ENERGY STAR® label – are far more energy efficient than older versions and, as a result, will save you money and produce considerably fewer greenhouse gas emissions. These modern models also invariably function a lot better than the older technologies they replace.

Shouldn't I also consider the energy and materials required to manufacture and transport the new, energy-efficient appliance or fixture that I'm thinking of buying?

Yes, this should be part of your life-cycle calculation as a thoughtful consumer. But consider that for many appliances, more than three-quarter's of their lifetime environmental impact occurs during their use – in the form of energy and water consumption and related carbon dioxide emissions. In other words, the substantial reduction in energy use over the item's, say, 15-plus-year lifespan usually easily outweighs the energy and material costs of its manufacturing.

But don't these things often cost a lot of money to buy?

In some cases, yes. But you also need to think of the cost to operate them over their lifespan. In most cases, you'll save enough money, in energy and/or water costs, to recover the purchase price of the appliance or fixture in less than half of its lifespan, and then continue to reap those annual energy savings for the remaining, say, seven or eight years of its useful life. In other words, it's a good financial investment, as well as good for the environment.

Let's say you spend \$600 for a basic ENERGY STAR refrigerator, which is twice as energy efficient as the 1990 model you're replacing. The resulting \$65 a year in savings on your electricity bill means you'll pay for the new fridge in less than 10 years and save an additional \$450 for the remaining seven years of its expected life (assuming a fixed electricity rate of 10 cents a kilowatt hour). For the same reason, it makes financial sense to pay a little more for an ENERGY STAR fridge than a less efficient model and earn annual savings on your utility bill.

Isn't it also wasteful to just get rid of old appliances that might still be in working condition?

Yes, there is an environmental cost. But much of the metals and plastics from appliances and fixtures can be salvaged and reused. In the United States, for example, major home appliances account for about 10 per cent of all the steel processed by the recycling industry – and using recycled steel prevents considerable amounts of iron ore and coal from being mined and processed. Local scrap metal dealers and landfills will often accept and recycle appliance materials, and a growing number of municipalities have drop-off sites for recycling old computers.

In many cases, it's better to scrap and recycle, if possible, wasteful old goods – like toilets, beer fridges and clunker cars – than to pass them on for continued, inefficient use. A good example is the Car Heaven program, which provides incentives for taking off the road and recycling pre-1996 vehicles, which produce some 19 times the smog-forming emissions of new models.

When should I consider replacing older appliances and fixtures?

It depends. If it's only a few years old and is only slightly less efficient than a new model, it would probably be wasteful to replace it. But because tougher regulations and new technologies have resulted in rapid gains in energy efficiencies, it often makes sense to replace an appliance or fixture that's 10 or so years old.

In a few cases involving quantum leaps of technology and inexpensive purchase costs, it's not worth waiting even a couple of years. For example, rapid price drops have eliminated any excuse not to purchase compact fluorescent lights, which use some 75 per cent less electricity than incandescent bulbs and last about 100,000 hours. Similarly, there's no reason not to spend as little as \$100 for a low-flush toilet, which can use four to six litres per flush, compared with 13 litres and up for conventional toilets. The payback is less than six months for the CFL and less than two years for the low-flush toilet; in both instances, you're doing a lot to reduce your environmental impact.

