



## Stanford eCorner

### Energy Efficiency Versus Conservation

Kristina Johnson, *Enduring Energy*

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Video URL: <http://ecorner.stanford.edu/videos/2915/Energy-Efficiency-Versus-Conservation>

Dr. Kristina Johnson shares stories and examples illuminating how improvements in energy efficiency can sometimes inadvertently lead to increased consumption.



#### Transcript

Energy conservation, I think this is really important distinction that I certainly didn't appreciate before I became Undersecretary and then there is a difference between energy efficiency around appliances and lighting for example and energy conservation. And what I mean by that is with lights I actually for holiday gifts I give my friends CFLs. Now I give them LEDs. You may not want to be on my holiday list, but that's what you get. And what I notice is, I was visiting a friend who I had given all the CFLs and they're leaving them on at night. I'm like, why are you doing that? Oh, well they're so much more efficient, now I can just leave them on all the time. Which means they're using more energy in some sense, depending. And so what we found is that there are some really interesting studies about lighting over 700 years, going from the efficiency change from a candle to an LED. And the efficiency factor is - I'm trying to remember, it's thousands and thousands. But the energy use - I actually taken into account the population changing, is many more thousands and I forget what the difference is and so there are certain things where the money you save is being reinvested into buying more.

How many have been in a home that has two refrigerators, one in the house, one in the garage? Well, refrigeration is one of the classic examples of how standards have really moved the needle in terms of size, cost and efficiency, but then people buy two. Now where I think energy efficiency and the investments in really pay off are in buildings, both commercial sector as well as residential because for about \$5,000 investment you can save about 30% of the energy. Well, you're not going to save enough to buy a new house. So those savings with that money you may reinvest in the economy, which is fine, or you may save it. And we spend about 10% of our GDP on energy, so you do get an impact there. So I think it's appreciating in understanding how energy efficiency and energy conservation trade off.