

ENERGY FOR THE POOR

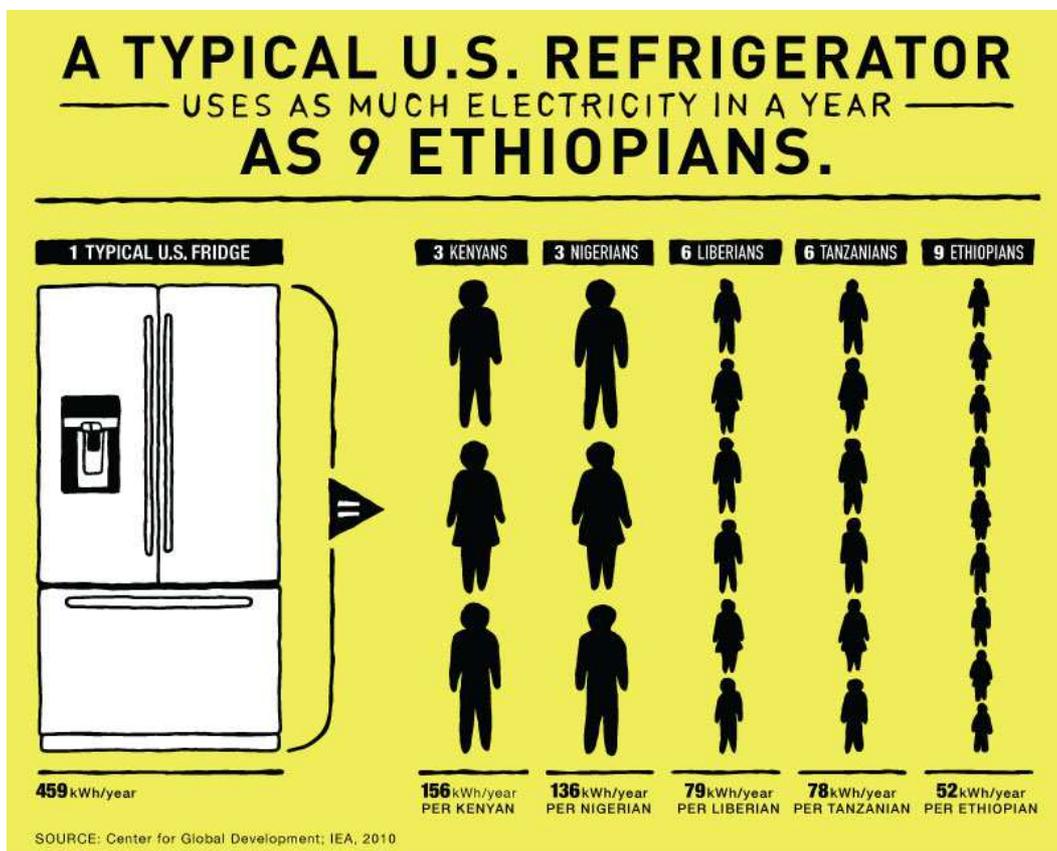
Powering the Fight Against Poverty

BY BILL GATES

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For years, I took energy for granted. There's no telling how many times I walked into my office, flipped a light switch, and powered up a PC without thinking at all about the magic of getting electricity any time I wanted it. But then I started traveling to poor and middle-income countries, and I had a very different experience.

I remember going to Buenos Aires and seeing where the government had run big wires to distribute electricity. But people couldn't afford it, so they tapped their own power cables into the government's and stole the electricity. This is a very common experience—[according to the United Nations](#), some 1.4 billion people have no access to electricity, and a billion more only have access to unreliable electricity networks. I've talked to women in rural Africa who spent hours every day hauling wood so they could cook food and light their homes. Others buy fuel to run a generator, which pumps out pollutants that cause asthma and lung cancer and, at 25 cents per kilowatt-hour, is more than twice as expensive as what the average American homeowner pays for electricity. Another example of the high cost of being poor.



Here is a picture of some students in Conakry, Guinea. They're studying under street lamps, because they don't have reliable lights at home. This is one of the most vivid examples of life without electricity at home that I've seen.



Think about what it has meant to America to have access to affordable, reliable energy. Electricity powers the streetlights that make our cities far safer than they were a century ago. The American construction industry never would have taken off if we didn't have lots of affordable energy for making cement and steel. Our farmers became much more productive when they replaced their plows and oxen with tractors—but only because they had fuel to run these new machines. The historian Vaclav Smil found that in the 20th century the average American's energy use **jumped roughly 60-fold**. At the same time, the price we pay for electricity fell by roughly 98 percent.

That's why I think any anti-poverty agenda has to look at giving more people access to affordable energy. For countries to lift themselves out of poverty, they need lights in schools so students can study when it's dark out. Refrigerators in health clinics to keep vaccines cold. Pumps to irrigate farmland and provide clean water.

In the rich world, we are right to worry about conserving energy, but in poor places, people need *more* energy.

There is also a demand side to this equation. As people get richer, they want more energy-consuming goods, like computers and refrigerators, and energy-hungry services like health care. We've seen it already in Brazil, India, China, and other countries, and it's a trend that will continue well into the future. The U.S. government **estimates** that the world's energy needs will increase by more than 50 percent by 2040, but I think it could go even higher as the global population grows and incomes continue to rise. We

want to provide this energy as efficiently as possible, but that's no reason to deny the poor access to the services that rich countries enjoy.

What about climate change?

It's a huge problem, one of the biggest we face today. The more energy we produce with today's technology, the more carbon dioxide we release into the atmosphere. While there is some uncertainty about the exact impact, there is nearly universal scientific agreement that these effects will be bad. And they will be worst for the poorest people on earth, who have done the least to cause the problem. Energy can't just be affordable—it also has to be clean.

That's why it's so important for the United States and other rich countries to invest more in [research into clean energy](#). A few years ago, I shared a few thoughts on this subject in a [TED talk](#) about developing energy sources that produce zero carbon. And I'm investing in a number of projects to develop cleaner, more affordable sources of energy. I hope to have more to share about them as they move through the R&D cycle.

These days, I don't take energy for granted. I know what a difference it can make in the lives of the poorest, and I'm committed to helping them get it.