

**THE BATTLE IN THE GREENHOUSE:  
CAN A SMALL NGO MATCH A HUGE MULTINATIONAL?**

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Yes, in terms of reducing greenhouse gas emissions a small local NGO can achieve as much as a huge multinational energy company. Take the following example.

In Laos, woodfuel is widely used for cooking. However, most households use open fires because proper stoves are still lacking. A local NGO, the Participatory Development Training Center (PADEC), is now introducing improved wood and charcoal stoves at a rate of 15,000 units per year. The improved stove saves at least 30% of the woodfuel as compared to an open fire. In addition to the advantages for the users, fuel saving implies reduced emission of greenhouse gases for the planet earth.

As a comparison, consider the case of solar energy. Photo-voltaics is being promoted worldwide as an alternative to fossil fuels. In Europe, a new production facility for solar panels is being established by one of the world's biggest oil companies. The production capacity will be 10 MW per year, which is considered large. The use of solar energy implies avoiding emission of greenhouse gases, which is widely advertised and recognised.

Let's make a quick estimate to compare the credit of the two greenhouse players.

An open fire for cooking has a power of about 3 kW. Saving one third of the fuel means saving 1 kW. Hence, 15,000 stoves save 15,000 kW, which is 15 MW. The open fires are normally kept live for about 8 hours a day, which means the 'plant factor' of such facility is 1/3. Therefore, the actual saving in terms of greenhouse gas emissions is equivalent to 1/3 times 15 MW, which is 5 MW. As regards the solar panels, when they are indeed used to substitute for electricity from fossil fuels, their 'plant factor' is at most 1/2. That means the saving of greenhouse gases is equivalent to 1/2 times 10 MW, which also is 5 MW.

The quick estimate shows that both the small NGO and the big multinational save the equivalence of 5 MW in terms of greenhouse gas emission. Anyone can try to make more accurate estimates, specify which greenhouse gases are actually being saved or substituted, or point to the different side benefits, or evaluate the needs of the beneficiaries, etc., for the two cases. But that's not the point. The point here is that the tiny NGO plays in the same league as the huge multinational!

The choice is not wood or solar. The choice is both. Woodfuel use is still growing on a sustainable basis. Photovoltaics is growing faster, but with present growth rates it will take another 30 years before pv matches wood in terms of energy quantity in the world. For the time being, cooking on solar electricity is 1000 times more expensive than cooking on wood.

There are about 3 billion woodfuel users in the world. Not even half of them avail of proper stoves. They are generally poor. Assisting them means applying cost-effective greenhouse measures at the same time.