

Energy 102

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The original articles were written in spanish. The ones at this section are being translated by the writer but might not capture all the original semantics.

In my previous article entitled: A Small Amount of Energy 101, I defined the concept of energy in the simplest way I understood possible, and I mentioned some suggestions for energy savings. Now, and more so with all the recent events in Puerto Rico and the world, I think it is prudent to suggest that everyone should adopt other sources of energy. I know that this has been mentioned a lot lately, but in my opinion, we must continue to analyze and inform on this core issue.

If we continue depending on fossil fuels, it is impossible to maintain the control of energy production costs and, consequently, it will not be possible to offer competitive and stable rates to consumers. Also, our environment will continue to be affected at an unnecessary and harmful level.

I recognize that, in most cases, if we evaluate the investment in these renewable technologies only with a financial view, they are not always cost-effective. But, when we broaden our view to other aspects, we understand that it is a type of profitable and necessary investment.

Here are some recommendations for when you begin to evaluate renewable energy investment possibilities for your home or business, mainly of the photovoltaic type:

1. Analyze your lifestyle in terms of energy use. Can you turn something OFF? What equipment can you use less frequently? What equipment can you use more efficiently? For example, here in the tropics, just increasing the desired temperature on your air conditioner by 2 degrees Fahrenheit, can reflect a considerable reduction in energy consumption.

2. Reduce your consumption. There are still high costs in renewable systems. Therefore, it is first recommended to invest in more efficient equipment and then design and select the ideal size of the system. Some examples are: changing the electric and tank water heater for a solar or line one; installing more efficient air conditioners or with “inverter” technology; changing incandescent or fluorescent light bulbs for “LED” type bulbs; insulating ceilings or walls; replacing some appliances with more efficient ones, among other initiatives. Mostly, for commercial or industrial buildings, I also recommend integrating automated control systems. You may not need to adopt all of the consumption reduction suggestions but evaluate which of these would be feasible for you, and implement them. Taking one or two will result in economic benefits when selecting your renewable system.

3. Measure your current actual consumption. Aside from the readings or estimates you can see on your electric bill, you could also measure your consumption using other types of local power meters. Research this task with an engineer, electrician, or the company of your choice, with whom you would be evaluating the installation of your system. If possible, do it at different times of the year and study the data from all the previous months, using your electric bills. You may wonder why I suggest measuring consumption anyway, if it should already be shown on the bill. But, at least here in Puerto Rico, I have seen many cases where having that second confirmation is definitely the way to go.

4. Think about and evaluate your current or future conditions. For example, there are children who move out of their parents' house and, in many cases, we can know this in advance. Having one less person in the home will probably result in lower energy consumption. Or, on the contrary, there are cases where the family will grow, where you want to expand the house or build a pool. With this information at hand, we could consider that future consumption status. Everything is calculated and can be estimated, and your selected professional should know how to do it.

5. Evaluate the impact of hurricanes and other types of natural events. You must decide what your priorities are. Here are some questions to ask yourself: do you want the house or business completely ON, or can you power only the loads you need as a priority? What is your budget? How long can you operate with batteries only, assuming no or very little sunlight?, among others that can be raised together with your selected professional. Due to Hurricane Fiona, many consumers experienced problems with their solar systems, as we received virtually no significant sunshine for about two days. There were also many problems with systems that were left without energy storage, and then could not turn ON automatically with sunlight, but instead required a manual process that was only known by experts. You should ask about all of this, and question possible scenarios and measures to limit such problems.

But if possible, and here we know that economic and geographic issues come into play, to name a few, be part of the energy transformation that your home, your business, and the country need. Your firm and effective steps in these matters will result in individual and collective benefit, both locally and globally. The planet has an urgent need to adopt better technologies for the production, management, and use of energy. I trust you...

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