

SHOULDN'T WE CONSERVE WHILE USING RENEWABLE SOURCES OF ENERGY

While preparing for one of the competitive exams related to Energy Conservation & Efficiency, I came across a multiple choice question which surprised me. The question said, 'Which of the following is a renewable source of energy? a) bitumen, b) wood, c) nuclear fuels, d) lignite'.

It was obvious that out of the given options, wood was the answer that would fetch me 1 mark. But, it made me to think that if we consider wood as a renewable source of energy, then so is crude oil & coal. That is another matter, that formation of crude oil & coal takes millions of years as against wood, which may crop up in a matter of weeks/months. And recommended use of more & more of renewable stuff would mean deforestation is acceptable. However, that is the not the point of discussion of this article, as we all know that afforestation & reforestation are the needs of the day. And so is a conservative & efficient approach towards the consumption of crude oil & coal, which are definitely non-renewable.

The real point of discussion is, how conservative & efficient an approach do we take while consuming energy generated from renewable sources of energy.

I have come across different kinds of people with respect to their energy consumption patterns. The most conventional ones are those who do not think twice before guzzling up loads & loads of energy in every form possible. While totally opposite to them are the most non-conventional ones who try to save every joule of energy in every form possible. And the hybrid of two are these selective consumers who would consume a lot of energy in one form but try to save every joule of it in another. But lately I have come across a new set of consumers. They tend to be among the non-conventional consumers when consuming energy in general, but as soon as they are in a zone powered by renewable source(s) of energy (say energy neutral buildings as one of the examples), they tend to convert themselves into the conventional consumers.

So, let me reframe the question. Shouldn't we conserve & save energy even though it is from a renewable source. Let's look at some facts.

Type of Energy Source	Dependence	Average Utilization / Capacity factor
Wind	Availability of continuous suitable wind speeds	20 – 30 %
Solar PV	Availability of sufficient solar radiation	10 – 20 %
Solar Thermal	Availability of sufficient solar radiation	20 – 25 %
Hydroelectric	Availability of suitable water bodies	40 – 50 %
Coal	No Specific dependence	50 – 60 %
Nuclear	Subject to public acceptance	65 – 75 %

The figures mentioned in the above table are average values. Moreover, they are approximate and the accuracy of these figures is not guaranteed. It is as per the data available on various forums online.

As is evident from the table above, the average utilization / capacity factor of wind and solar energy are relatively lower than other known sources of energy. This is primarily because of the dependence on suitable solar radiation and wind speeds. So, we are anyway not using the entire capital deployed to produce renewable energy, 24x7. And importantly, most of the times, renewable sources of energy divert their supply to the central grid & the final electric supply that we get can be said to be a mixture of both non-renewable & renewable sources of energy. So, even a small blip in our efforts towards saving energy will defeat the very idea of energy conservation – 'reducing or delaying the need for installing new power generation capacity' which could be either non-renewable or renewable. Therefore, it is equally important (if not more) to be energy conscious irrespective of what zone we are in. And by saying this I am not trying to propagate the purchase of energy efficient equipments (though I am not against them either). But, there is a lot that each of us can do much before we go shopping.

I do not want to reiterate the ways & means of saving energy. We all know what to do. All I intend to say is let's first become those non-conventional kinds of energy consumers & select not to be selective consumers, irrespective of the source or form of energy. After all, **energy spent is energy lost.**

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