

(Em)Power to the people

South Africa needs electricity. Access to energy is a pre-requisite for development. Whether at the macro-level of our country, or at the micro-scale of households, economic activity can only be sustained with access to energy. While the potential of Nega-watts (electricity conserved) holds some potential for addressing the current electricity crisis, we should acknowledge that we cannot conserve our way to having enough energy available.

Hence the debate shifts to future sources of energy. Let's look at some of our options, and then focus on an element of the debate which is often disregarded.

South Africa has enough coal to fuel our economy for a number of future generations. However, owing to mounting international pressure on countries to limit their carbon emissions into the atmosphere, this option is considered as a last resort.

Nuclear energy has gained international acceptance over the past number of years, mainly because of the absence of a visible carbon footprint and an impressive safety record of late. The threat of nuclear waste or potential nuclear disasters has paled against the threat of global warming. So in the pageant of ugly girls, nuclear waste has emerged as the least ugly.

While many studies show nuclear energy to be one of the cheapest alternatives to coal, numerous reputable sources would point to its hidden carbon footprint and the fact that it remains a non-renewable and expensive source of power. Generally, the different conclusions in these reports can be traced back to their underlying assumptions, making such studies dangerous to quote.

Renewable energy is often regarded as an outside hope in the quest for a clean and growing African economy. (Renewable energy includes solar, wind and hydro energy, while

some also regard biomass – wood, bio-ethanol and bio-diesel – as renewable).

One feature of renewable energy that is not so often spoken of is the potential for job creation, a very important aspect in the (South) African context. Given the major disagreement that exists around the price of electricity from different sources, it is uplifting to see the lack of disagreement about this issue. Depending on the renewable

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technology one refers to, it can create up to 100 times as many direct jobs as coal, without being more expensive than nuclear energy. By contrast, there is consensus that nuclear energy creates about six times fewer jobs per kWh than coal.

Additional characteristics of renewable-energy employment are that such jobs are created at the entrepreneurial level, are not only limited to big metropolitan areas (i.e. are

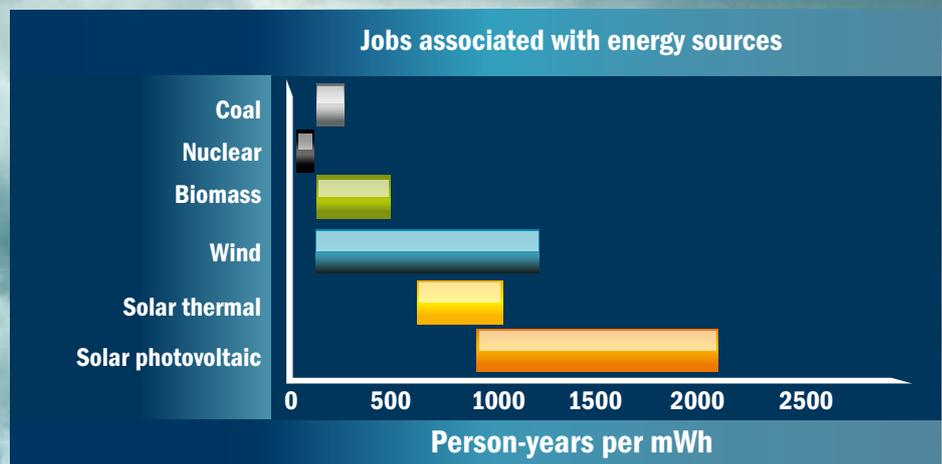
decentralised), and require skills at all levels on a permanent basis.

But price may still overshadow this argument in some instances. Generating electricity from the sun is far more expensive than doing so from nuclear energy, but Moore's law is alive and well in the photovoltaic (PV) industry. This law states that capacity doubles every two years, or that the price per kWh halves every two years. At this rate, solar PV will be competitive in the next ten years.

So what do we do in the meantime?

Solar thermal energy, as used in solar geysers, is one of the cheapest options available to us. While the job creation potential of solar thermal is less per unit of energy, the sheer size of the market can supply half a million jobs on a constant basis. In actual fact this industry is currently held back by a lack of suppliers.

If we were to source fifteen per cent of our energy needs from renewable sources in the near future, we can create in excess of a million jobs. And we can do so with little or no cost to the South African economy and the environment. □



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