Will solar power get the backing it requires?

IN a country battling to meet its burgeoning demands for electricity and one that boasts more than 2,500 hours of sunshine every year, one may well ask why the uptake of supplementary solar power (also known as photovoltaic energy or PV) has been so slow.

One of the answers to this conundrum is, of course, the cost of the initial investment. The infrastructure required is significant and the savings you make on your home or business's electricity bill can take between five and ten years to cancel out the capital expenditure. Coupled to this is the fact that, unlike the rebates Eskom offer on solar water heating geysers, there is currently no capital rebate programme being offered on expenditure for other solar power generation projects. On top of this, Government and Eskom have not yet established legislation or a mechanism that will enable private or business energy generators to feed their surplus electricity back into the grid and be paid for it.

But according to industry reports, alternative energy generation from renewable sources such as solar and wind has become significantly cheaper over the last couple of years, and its expected to continue to fall in price. And if one takes the forecasts of international business consultants, Frost & Sullivan, into account then solar power is set to become the most economical method of power generation by 2020. Their findings predict solar energy will cost around R1/kWh by then whereas Eskom generated electricity is expected to rise to R1.69/kWh by the same time — a saving of 69% for those using solar power by 2020.

A company that claims it can remove a lot of the uncertainty about whether installing solar power will be expedient for your home or business is Cape Town-based, RED Engineering. Owner, Clemens Brandt, has designed a free, web-based evaluation tool that is able to perform an online analysis of the projected costs and savings of a solar power installation. Once a potential customer has entered the required details, this custom-designed system then makes a recommendation as to the size, technical specifications and projected costs of the solar power installation most suitable for the home or business specified.

Brandt has successfully used this evaluation tool for a number of installations. And his recently completed 450kWp (kilowatt peak) rooftop solar photovoltaic (PV) system for fruit packing and cold storage facility, Arbeidsvreugd in Villiersdorp, was one of these. Citing the fruit industry's very specific and seasonal demands, Brandt says the tool helped him design a bespoke solar power system integrated with the Eskom supply.

"We're currently saving about 55% a month on our electricity bill, which equates to around R65,000," says Danie Jacobs, owner of Arbeidsvreugd. Brandt is quick to point out that while he's also "very satisfied with the system's performance to-date" the winter months lack of sunshine will reduce the overall annual saving to about 27%. Added to these savings is the fact that businesses can now offset up to 10% of their electricity related carbon costs when submitting their annual tax returns.

"What is becoming increasingly important for exporters, like Arbeidsvreugd, as well" says Brandt, "is that foreign consumers, like those in the EU, are demanding goods with as low a carbon emission burden as possible. So, businesses like fruit exporters require renewable energy programmes, not only as a point of competitive advantage, but also to ensure that they're able to stay in business going forward."

With every kilowatt hour (kWh) Eskom generates producing around 1kg of CO_2 emissions, being solely dependent on this source of power could become a rod for the back of certain businesses reliant on export trade. RED Engineering's installation at Arbeidsvreugd will effectively avoid CO_2 emissions of a staggering 733 tons per annum; something which Brandt believes will still make a positive impact on their order book this year.

But whatever the business expediency of integrating solar power into your home or business is, it will be incumbent on government to ensure that the correct incentives, legislation and mechanisms are put in place to encourage the growth of renewable power sources such as solar — especially when reduced CO_2 emissions have become a business imperative in sectors such as the labour intensive export fruit industry.

On top of this, plans to compensate already cash-strapped municipalities — they will lose important electricity revenue as embedded generation systems proliferate, meaning household rates and taxes could increase dramatically — will need to be finalised and implemented fast.

Clemens Brandt of RED Engineering admires the nearly 3,000m² extent of the 1876 solar panel installation at Arbeidsvreugd in Villiersdorp.

Technical specifications: Arbeidsvreugd installation — Villiersdorp, Western Cape.

System size: 450kWp (kilowatt peak.)

Electricity generated: ± 743,000kWh per year.

CO_2 emissions avoided: ± 733 tons per year.

Savings: ± R600,000 per year.

Total savings over 25 years: ± R38m.

Payback period: ± six years.

Energy audits at 29 facilities have indicated that solar energy can, on average, save about 27% of a pack house or cold store's electricity bill.