

Solar Sees Green

Fossil fuels, largely blamed for causing climate change, provide 80% of the world's energy needs. Breaking that reliance is going to be neither swift nor simple. Yet it must be done – and not only to stop the build-up of greenhouse gases emitted into the atmosphere. Fossil fuel reserves are going to run dry, probably in less than 100 years. It is therefore imperative that we explore new, renewable energy sources in order to ensure that our future energy needs will be met. Solar energy in particular stands at the crossroads of these challenges. Solar photovoltaic technology (solar PV) has the possibility of producing four times more power than the current global demand – and can do so cleanly. In addition, the solar industry, growing at a rate of approximately 40%, offers tremendous economic and employment opportunities.

Moreover, solar PV is a source of power that is not only clean but also versatile. It can serve power providers' grids and can currently supply energy to an estimated two billion people, most of whom live in rural areas where access to electricity is limited. In these areas people rely on expensive, "dirty" sources of energy – and millions inhale toxic fumes generated from burning fuels like kerosene.

Much of the recent boom in the solar-energy sector can be attributed to the extraordinary jump in oil prices last year: the cost per barrel reached USD 140 around the middle of 2008. This, combined with the increasingly obvious disruptive effects of climate change, is leading many governments around the world to actively invest in the development of solar-power infrastructures. Technological changes are making successive generations of photovoltaic (PV) cells more efficient and less expensive. The prospect of selling solar-produced electric power through the normal grid, through feed-in tariffs, is one of the biggest incentives now driving this sector's expansion. But off-grid too, it has tremendous potential to change the quality of life for billions of people who live on the borderline of poverty. Their education, health and livelihood stand to change dramatically with the provision of decentralised sources of solar power. It would also significantly slow the current devastation of the globe's forests by reducing the dependence of poorer communities on wood fuel.

One of the biggest contributions to be made by the solar sector may be its ability to provide a solution to the ongoing North-South squabble (between industrialised and developing countries) over how to share the burden of fighting climate change.

The International Energy Agency (IEA) has estimated that in order to meet our increasing global energy demands by 2030, an investment of USD 16 trillion

(or about USD 600 billion per year) will be required. This figure does not take into account the tremendous health and environmental costs associated with continued reliance on polluting sources of energy. Therefore, it is imperative that most of that investment be earmarked for clean, renewable sources. In India for example – given that country's average of 300 days a year of sunshine – by bringing only half a percent of its land area under solar PV power (some 16,500 square kilometres), all the electricity needs of the country could be met by the year 2030. Thus, encouraging developing countries to go the solar path should actually form the basis of the "clean-tech" agenda, and should be recognised as a powerful tool at the Copenhagen Climate Conference at the end of this year, in the attempt to forge an agreement post-Kyoto.

A committed investment in solar technology today will ensure a competitive, secure, clean and non-depleting energy source tomorrow. But at the same time, the massive subsidies being used to bolster the unsustainable fossil fuel industry need to be shifted to promoting the renewable sectors. The latest IEA estimates show that renewable sources of energy account for only USD 10 billion of the USD 250-300 billion allocated to annual energy subsidies worldwide.

The Global Solar Report Card for 2008 (the first of its kind), brought out by the Geneva-based Green Cross International, provides benchmark snapshots exploring several countries' solar efforts to date, as well as their commitments to fostering the future growth of their solar markets. The state of California in the United States is also included because of its importance in the global solar and economic context. The resulting ranking is based on a 100-point system that allocates a maximum of 30 points to each country's progress to date in terms of its capacity for solar production. The remaining 70 points are awarded to drivers for future growth: 56 points for financial incentives, 12 points for regulatory incentives and two points for educational and advocacy efforts.

The study's focus is on solar power policies in place at the national level. For countries such as Australia, Canada and the United States, where the policy on electricity is the purview of states or provinces, attention is also paid to state policies. However, scoring emphasizes federal-level policies, as federal governments have an important role to play in co-ordinating action at the national level. While a country's grades are a function of solar-specific indicators only, the full report (www.globalgreen.org/solarreportcard) also examines the general context surrounding solar support measures, such as energy efficiency measures, fuel sources used for electricity generation and renewable energy targets.

The purpose of this report is to raise awareness about solar energy by tracking countries' progress periodically. Final grades are based on the latest available data common to all countries. The most recent data is noted when available, including important policy changes that took place in the first months of 2009. Current grades reveal that all countries are still in the early phases of solar deployment – even Germany – which has set the pace for the rest.

According to the report, Germany (with an A- grade), having the largest number of PV installations in place and promising “drivers for future growth” still obtained only 70 out of a 100 possible points. The State of California (with a B grade), also scored well (second place), having implemented a 10-year USD 3 billion rebate program for solar initiatives. Spain (C+), which has seen tremendous growth since 2007, overtook the USA in 2008 as the third country with the most PV power installed.

The United States (C+), with the extension of its only federal-level financial support for solar technology, showed a much needed long-term commitment to the sector. Additional support has since been allocated. Still, much more could be done in a country with such great solar, financial and technological resources.

Countries such as Italy (C+), France (C+) and Greece (C-) fare moderately because their markets are still young, but all earn points for setting up substantial drivers for growth. Recent efforts have

focused on lifting bureaucratic constraints, which have in all three cases acted as significant barriers to market take-up. Solar markets are expected to grow in these countries relatively quickly.

With recent policy changes, Australia (C) missed an opportunity to put in place a federal-level policy to capitalise on its tremendous solar resources and spur significant investment in the country's solar sector. Similarly to the US, this country could do much more to reach its solar potential. Japan (C), once the leading country in terms of both production and installed capacity, scored low after ending its flagship program in 2005. However, in the hope of regaining its solar panel makers' competitive edge in the world market, Japan recently made the first step in a new residential PV program.

China (D-), which seems committed to developing a clean energy infrastructure, has set ambitious targets and put in place a comprehensive renewable energy policy framework. It has just released the details of a PV rebate program. The country stands to gain a lot from supporting the deployment of solar power, given its isolation and its tremendous energy needs – as well as its position as one of the three largest PV-producers in the world.

Finally, countries that rate poorly in the study are Russia (F) and Poland (F), with no solar markets and no mechanisms to capitalise on their solar potential – and to a lesser extent, the United Kingdom (D-) – with a very small market and no

significant support for solar growth at this time. While the UK is in the process of designing a solar support programme, any impact will not be seen until the end of 2010.

The next Green Cross Solar Report Cards will include more developing countries, which, as noted above, receive more sunshine round the year – and where two billion people still go without any form of electricity in their lives. One thing is certain: in the years to come, the use of photovoltaic power is bound to emerge as a dominant force. From less than 1% of global electric power consumption, some estimates expect it could rise to between 6% and 9% by 2030 – and even to between 20% and 28% by 2040. As governments around the world are committed to providing over USD 3.0 trillion in the next two years to reviving the economy, a substantial portion of this new spending could well go towards creating the critical mass of infrastructure needed for a new environmentally sustainable economy.

According to an analysis of 15 nations' approved and pending stimulus plans conducted by HSBC Global Research in January 2009, the average green investment was about 14% of total monetary commitment.

About Green Cross International
Based in Geneva, Green Cross International works through its 31 national offices. It seeks to ensure a just, sustainable and secure future for all. It is engaged in fostering a value shift to cultivate a new sense of global interdependence and shared responsibility in humanity's relationship with nature. From advocacy programmes to training individuals on how to construct rainwater-harvesting systems, the Green Cross constantly encourages co-operation among all stakeholders.

Website: www.gci.ch

FEED-IN TARIFFS FOR RENEWABLE ENERGY IN SWITZERLAND

In May 2008, the Swiss federal government launched a system of feed-in tariffs for solar photovoltaic, wind, hydro, geothermal and biomass technologies. The Swiss system, like those in Germany, France and Spain, was established to pay renewable energy generators for every kWh (kilowatt-hour) of electricity produced for a predetermined period of time. In Switzerland, for the photovoltaic industry the contract period was set at 25 years – the longest in Europe outside of Spain. Funds to pay for the tariffs come from a systems benefits charge of 0.006 CHF/kWh on all electricity consumption. However, by early 2009 there had been so many registrations for the compensatory feed-in remuneration that the total cost ceiling for the project was reached much earlier than expected. In fact, the 2008 annual add-on quota for new photovoltaic plants had already been filled by the first day of registration. Therefore, in February 2009 the Swiss Federal Office of Energy (SFOE) declared a moratorium on photovoltaic power. This meant that the national grid company Swissgrid S.A., which handled the registration process on behalf of the SFOE, was required to place 3,000 registered photovoltaic plants on a waiting list.

In a March meeting, Parliament announced an additional CHF 20 million in support to be delivered in the form of investment grants. This money is to be put toward the realisation of new photovoltaic plants. However, they will be paid exclusively to establishments which were registered with Swissgrid as of 31 December 2008 for compensatory feed-in remuneration. According to Parliament's orders Swissgrid should have delivered grant applications to all eligible project engineers by 10 April. Grants are worth between CHF 2,500 and CHF 3,500 francs per kilowatt of installed capacity. There is a ceiling of CHF 35,000 and engineers have until 30 June to apply.



I n t e r n a t i o n a l

The Greener Garden

By Hester Mac Donald

BIG STOCK

It's spring, and after a few months of thought over the winter, you've decided you want to have some work done in the garden. Where do you start?

Well, first of all, what kind of work do you want to have done? It helps you and your potential gardener if you are clear on exactly what you want him/her to do. Don't expect the gardener to guess what needs to be done; this is a recipe for both a dissatisfied client and a gardener who feels unappreciated.

DO YOU NEED A SPECIALIST?

TREE WORK

L'Association Suisse de Soins aux Arbres (the Swiss Association of Tree Specialists, or ASSA) is an excellent source of tree surgeons in Switzerland. They are hugely experienced and have signed up to a charter of quality. This charter includes such things as refusing all drastic pruning, following current scientific thinking and treating the environment of the tree as a whole – always considering the needs of the tree first.

L'Association Suisse de Soins aux Arbres www.assa.ch

Don't forget that within the Canton of Geneva, you always need permission from the Direction Générale de la Nature et du Paysage to take down a tree. For any listed trees, you need permission to trim them as well. Check out the website for permission forms: www.etat.geneve.ch/dt/nature

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PRUNING

Most shrubs and plants have an optimum time of year to be pruned. If you know what plant it is, there are plenty of online resources (www.rhs.org.uk is a superb one), or books like the excellent Pruner's Bible by Stephen Bradley. If you don't know what the plant is, most flowering shrubs are best

pruned after flowering. Pruning at the wrong time rarely kills the plant, but it might lose you a year of flowers or fruit! Pruning against disease or die-back can be done at almost any time.

Many shrubs locally are pruned into a sort of oval blob, which is easy to do with hedge clippers, but not brilliant for the plant. It tends to create a large amount of dead or very spindly wood at the centre of the plant. If you don't want your flowering shrubs to be butchered, then insist on a light trim or an "English trim" (also a light trim).

GENERAL MAINTENANCE

If you are clear on what you want your gardener to do, then almost anyone can manage general maintenance.

PLANTING

For smaller plants and shrubs, anyone can do the job. For any larger shrubs, and particularly trees, I would recommend asking a *paysagiste* or at least an experienced gardener. Most trees will need an extra-large planting hole and a stake for support. An additional reason is – particularly if the tree is expensive – that you should request a guarantee of at least a year for the tree. This means that if it dies, you can call the gardener back to replace it. It is also quite common for the gardener to come back for yearly maintenance (to check the stake and ties and to prune it if necessary).

How much should you pay?

Let's start at the lower end of the scale: mowing lawns. Many gardening firms calculate the rate based on how many cuts per season. Altitude plays a significant part in this. You can expect about 18 cuts per season in Arzier, but 22 cuts in Founex. I asked a range of different firms for likely costs for a small garden in Tannay. This garden is 200 square metres, recently created (three years ago) and in good condition. The access is easy, through a wide gate, with almost no additional planting apart from a laurel hedge. This type of garden is about as easy as it could be for a gardener!

A simple *jardinier* should charge you about CHF 40 an hour for mowing your lawn. This can vary depending on whether he/she uses your lawnmower (which should be cheaper, as the wear and tear and cost of petrol are yours), on whether they take away the lawn clippings, and whether it's a team or a single person. A medium-sized gardening firm would charge about CHF 65 an hour for this garden, including the use of their machines and removing the clippings. The price can vary significantly, up to CHF 80 an hour. Some companies will charge you a set rate per month for the entire season, and some will guarantee a certain number of cuts, or an average number of visits per month.

So how do you compare?

Well, the first thing is to decide what exactly you want them to do: do you want them to treat the lawn with weed killer, or scarify it, or remove the moss? If not, don't be persuaded that these are essential, but at the same time, you can't ask them to add the treatment "just this time" – as it is expensive and time-consuming.

Make a list, and if possible, make it in French. For a list of useful terms in French, see below. It may seem overly complicated, but many gardeners and gardening firms see several gardens per day, and after a while they cease to be distinguishable. If you want a specific and personal quote,