

Some thoughts about power and energy issues by Stuart Sexton

It is worth reminding ourselves about the three key focus areas in our efforts to live a sustainable lifestyle: **waste, water, energy**. Everyone can help in some way to minimise their use of these three in their household, their business, and their lifestyle. In doing so, we help our environment directly. Little things count for a lot if enough people do them:

- a little less heating in winter, a little less cooling in summer and energy-efficient lighting go some way towards reducing energy consumption;
- using fewer plastic bags and using a compost bin for scraps helps reduce waste; and
- saving water for reuse in laundry or garden lowers household water use.

The three Rs of sustainability – **reduce, reuse, recycle** – act as guideposts to help us manage our waste, water and energy in our own little spheres of influence. But we must also acknowledge some major issues need to be tackled at corporate and government level to make a real lasting difference to Australia's and the world's overuse of resources and consequent effect on climate.

In Australia, we have become accustomed to cheap power from coal, and having our income from iron ore, coal, and other minerals support our way of life. We are starting to realise all these resources are non-renewable; when they are used up there will be no more of them. Coal particularly is a major source of pollution and greenhouse gases. Yet we continue to use power from coal-fired power stations to sustain us and think little or nothing of it.

There have been discussions about other energy sources and some moves towards testing them out. Australia has an abundance of gas, which is less polluting than coal although it still releases greenhouse gases into the atmosphere when burned. Australia also has a large proportion of the world's

known uranium, but nuclear power is always a controversial topic, for safety and environmental considerations at least. Wind energy is starting to be exploited locally on a commercial scale and we as consumers can opt to support it by paying for "greenpower". However while the cost to us of coal power remains low by world standards, other energy sources inevitably cost us more. Geothermal power, from the earth's hot core, is so far untried and the technical difficulties enormous.

So what of solar power? Heat from the sun is freely available in Australia, non-polluting and renewable as long as the sun lasts. Can it be collected, stored and distributed on a nationwide scale? At street level some of us have invested in photovoltaic (PVC) solar collection, in which the panels on house roofs feed solar energy into the national power grid for which we receive a "feed-in tariff." But domestic PVC systems cannot store solar energy overnight to power a house or support the power grid. For large-scale solar energy takeup, the issue of storing the power for later use must first be solved.

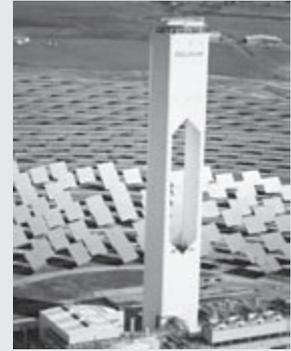
One of Willoughby City Council's latest forums on solar thermal power featured speakers Matthew Wright, Beyond Zero Emissions executive director, and David Mills, until 2005, principal research fellow at University of Sydney and recently retired chairman of Austra, a company specialising in solar thermal technologies. Those who attended received a wealth of facts, figures, concepts and plans for solar thermal energy.

Beyond Zero Emissions prepared an ambitious plan for Australia to achieve carbon-free power generation by 2020, and presented it to the Australian Government.

The concept is based on the use of commonly available salts being heated during the daytime from solar power collectors, and releasing this heat during night hours to provide a constant source of power. While commercial viability has yet to be proven in Australia, a solar thermal

power plant has been operating successfully in California for nearly 30 years and some European nations are now planning solar thermal installations. So is this the bright future of Australian power generation? The forum thought

so, and endorsed an approach to Council to promote solar thermal power to the State Government (which is considering suitable sites for a pilot station). It would be most encouraging to see this go forward, as NSW urgently needs additional sources of power – particularly carbon-free power! NSW's and Australia's carbon debt is very large per head of population.



PS10 solar thermal tower near Seville, Spain. (Abengoa Solar, 2008, "Solutions to Global Climate Change - Power Tower Plants")

SUSTAINABILITY ST. IT'S A VILLAGE OUT THERE

The Artarmon Sustainability Street Group has suspended its regular Thursday monthly meetings. However the group is continuing to work on the Sustainable Garden outside the Artarmon Library on the fourth Sunday of each month. There will be plenty of time for sustainable discussion as we work! Please join us if you would like to help with gardening or with watering (a roster is in operation). You can contact me by email at stuartsexton@gmail.com about the Garden or for any sustainability issues and questions you have, and I will respond accordingly.