Chapter 13

Reducing the ecological footprint: the prospect for green energy

S. Telfer and T. Hundloe

In this chapter we ask the question: what scope is there for Gold Coast citizens, businesses and government agencies to play a proportionally appropriate role in replacing greenhouse gas-producing fossil fuels (in the generation of electricity and for transport) by environmentally friendly energy sources? We could expect that a sunny coastal city caressed by waves, subject to diurnal tidal flows and noted for its sea breezes would have more than average potential to play a leading role in this cause. This we will explore after putting the question into perspective.

The peaks and climate change combine

The need to seek alternatives to conventional fossil-fuel energy sources is two-fold. First, there is the build-up of greenhouse gases in the atmosphere and the global warming that results. The Gold Coast has enough extreme weather events carrying sand away and threatening dwellings perched on the foredunes to not need any increase in these due to climate change. Second, there is the fact that fossil fuels (e.g. coal and petrol, respectively the sources of electricity and transport on the Gold Coast) are finite resources. Take, for example, the concept of 'peak oil'. This represents the point in time when the maximum rate of oil extraction has been reached. From then on the production of oil is in decline. In other words, for each barrel of oil used in drilling for and extracting oil, less and less is produced. The day will come when one barrel of oil used in producing oil will produce less than one barrel! Despite ongoing debate to determine this point, most optimistic predictions suggest a decline commencing in 2020. Similar 'peak' concepts apply to all non-renewable resources, indicating a highly challenging reality for the future if we continue to rely so heavily on these declining resources. We face two challenges: the negative effects of global warming and the depletion of fossil fuels.

Economic and technological limitations as well as underfunding of renewable energy research have significantly restricted the uptake of environmentally friendly energy sources in Australia. Renewable energy policies, especially targets, can play a driving role in the community's switch to renewables. The price a household receives from the sale of excess energy (generated by solar panels) to the network (the grid) is another factor. Finally, there is the most important consideration of all – the pricing to consumers of fossil fuel-produced energy. At the time of writing, there is little certainty on any of these variables.