

SOME ADVANTAGES OF SOLAR PANELS

By Mary Lush

Towards the end of last year masses of solar panels found their way onto the roof of the Lorne hospital, courtesy of a trickle down from the \$13.5M Regional Health Solar Program.

Although we think of medical services as being on the side of angels, never more so than in this era of COVID-19, they are monsters in some other senses. Their 24 h demand for power makes them indirectly responsible for producing tonnes of greenhouse gases. In recognition of the financial and environmental costs of power in the health sector, including the health consequences of global warming, the Victorian Department of Health and Human Services set up their solar program in 2017.

Lorne hospital's system is 60 kW, which is about 10 times the size of an average house installation. Expectations were that on exceptionally sunny days the hospital would export power to the grid, but that most of the time it would use all the power it generated plus some (where 'some' is quite a lot). The economic modelling predicted an average saving of \$17500 for each of the next 10 years, which translates to a payback period of about five years or a return of 20% on investment. How has the system stacked up in fact?

In its sunny first months of operation at the end of 2019, actual performance was 94% of that predicted, but during January to March 2020 it has averaged about 65%. We can attribute at least part of the shortfall to the cloud and haze we experienced over those months when solar exposure was 81% of the average (Aireys Inlet data). Overall, the installations at sites throughout the Western District Health region have done better than us and generated about 94% of the power predicted.

It is worth noting, as Patrick Turnbull (Western District Health) does, that the Lorne hospital system is 'still a worthwhile investment'. Some of the money that the hospital previously allocated to power, can now be used for other things.

My interest in renewable energy comes less from the potential cost saving than from a feeling that Lorne probably contributes considerably more than its share to global warming. Whenever we expand or build a house, we eliminate trees and release the carbon stored by them. We pour tonnes of concrete imported in convoys of trucks, further populating the atmosphere with greenhouse gases. Pre-COVID-19, tourism itself accounted for nearly 10% of global greenhouse emissions. Can we improve on this sorry situation?

Rolling out more solar generation in Lorne, however, is not without problems. Lorne's tree canopy is an essential part of the town's character and one that saves us from becoming a heat island. But shading reduces the output of solar collectors. We also have salt spray to corrode metal fittings and obscure glass surfaces, and many overcast days. Not to be deterred, about 5% of Lorne houses have solar panels and there are other promising sites.



Above: A few of the many panels on the Lorne hospital. Image: Mary Lush

These include areas around the foreshore, such as the shopping strip, and the government precinct made up of the SES, police station and school.

What of other renewable sources of energy? I can imagine a wind turbine at Point Grey, methane captured from waste, tidal and wave power harnessed by something anchored offshore, hydroelectricity from the Allen Dam, and the sewage that is pumped up the hill to the treatment plant generating power on its way back down.

None of these options are readily realisable. Height restrictions along the Great Ocean Road, not to mention debate about Point Grey, apparently rule out a wind turbine (or could we locate some over Birregurra way?). Methane – I don't know. Hydroelectricity in its various forms is difficult. Tidal energy, much vaunted for its predictability, needs sites with particular characteristics that may not exist around Lorne. Deakin University, however, did collect data on wave/tidal energy from the Lorne Pier and it would be good to hear their findings. There is often no overflow from the Allen Dam and constructing new dams would destroy some of the paradise we want to preserve.

We could reduce Lorne's carbon footprint by reducing the amount of power we use. But that is a topic in itself and for another day. Some towns, including Apollo Bay, are installing solar systems that will be able to benefit from future developments in the grid. It would be nice to hear some discussion in Lorne. Contact me through the Editor if you have ideas. In an ideal world we would retain paradise and have a swinging hot spot.

*They paved paradise
And put up a parking lot
With a pink hotel, a boutique
And a swinging hot spot*

Joni Mitchell, Big Yellow Taxi