# Solar power

The simplest approach is to design your buildings for passive heating, planning the size and orientation of windows and overhangs to allow winter sun to enter and excluding the summer sun. The next step might be as simple as coiling a black water hose on the roof on its way to the shower, and you’ll have hot water for washing in whenever the sun shines. Next step up in sophistication might be to make the collector a little more efficient by enclosing it in a glass fronted, insulated box with a black background and bringing the heated water up into an insulated tank for storage. Thermosyphoning it by utilising the water’s natural propensity for rising when heated by placing the tank above the collector. Warm water rises up into the tank, and stays there till you need it. Install a pump, expand the size of the collector, and you might circulate the hot water round your building through some radiators or even under the floor. Make sure the connections are tight, and that the pump fits the work, and that you don’t get undesirable side effects like the whole thing working in reverse at night, when the collector will cool down below the temperature of the house. Either you will have to turn the pump on and off yourself, or install some thermostats to do it for you.

Clearly, solar energy is coming in as heat, so it makes most sense to use it just like that, to heat our buildings and water. But it can be turned into electricity by installing a variety of different collectors. Electricity is a fine way to have energy transported, utilised in a wide variety of ways to do work, and it can even be stored in batteries. Combine wind, water and solar, and you’ve got really a great system with some good backups. It would be quite a complex system, needing good engineering and sound maintenance, but at a village level it might supply all your needs, with storage being the water in a high level dam, and the water turbine giving regular even electricity day and night, winter and summer.

The easiest way to make electricity from the sun is a photo voltaic (PV) collector. Just buy it set it up facing the sun and plug in. Of course the supply varies with the amount of sunlight, so you’ll have to run it through batteries or some other storage. There are some problems with PV collectors. The industry which produces them uses a lot of energy and has some dubious pollutants. They are relatively expensive, but on the other hand seem to last a long time. They don’t seem to wear out or be destroyed easily.

There are many models on the market now, and the technology is not yet old enough to be able to give an appraisal of how long the panels will last.

Upgrade this idea to the global level, factor in large wave generators stationed off the coast, a few tidal generators where the geography allows it, and couple the whole show together in super grids. The technology for this is all here, except for the last link up of the super grids. Had we put the money that we have wasted on nuclear power into developing this, we could be enjoying it today!