8 – Sustainable energy

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Solar energy can replace fossil and nuclear fuels over the next 50 years, thus creating a truly sustainable energy supply system. Diversity of solar energy sources is the key to a stable energy supply. Solar thermal, photovoltaics and wind energy are likely to dominate the solar energy mix. Unfortunately, Australian Government energy policy is not nearly so sympathetic to solar energy as is energy policy in Europe and Japan.

Reliable, economical energy supply underlies modern technological society. Now it must be made sustainable.

There are five available energy sources: solar energy (in its various forms), fossil energy, nuclear energy, geothermal energy and tidal energy. Of these, only solar energy can provide really large-scale energy in a sustainable and environmentally acceptable manner. The other energy sources can supplement solar energy to increase the diversity (and hence stability) of energy supply.

Fossil fuels are subject to resource depletion and there is a consensus among climate scientists that the burning of fossil fuels is causing an enhanced greenhouse effect (IPCC 2001; CSIRO 2001). Consequences over the next 50 years could include:

- significant temperature rises (particularly at high latitudes)
- rising sea temperatures and levels (causing flooding, coastal erosion, damage to coral reefs)
- more frequent extreme weather events (such as floods, storms and drought)
- the need to move agricultural activities and infrastructure to different locations
- an expanded range for tropical diseases and disease vectors