

EDUCATION, SCIENCE AND TRAINING

SENATE LEGISLATION COMMITTEE - QUESTIONS ON NOTICE 2006-2007 BUDGET ESTIMATES HEARING

Outcome: CSIRO
Output Group: CSIRO

DEST Question No. E195_07

Senator Siewert asked on 31 May 2006, EWRE Hansard page 45.

Question:

Senator Siewert—Is it possible to give me a time frame for when this research is likely to result in something that is viable as an energy source? For example, I read in the paper the other day that solar thermal technology could be available within seven years. Could I have some predictions from you as to when the various technologies might be available for use?

Dr Morton—Just to follow on from that, the time frame in which these technologies will become viable is clearly dependent upon various types of market signals, which depend upon certain policy settings. So you are presumably asking purely in technical terms when this work will be finished.

Senator Siewert—Yes, that would be useful.

Answer:

CSIRO has provided the following response.

Energy Sources

CSIRO can only make broad predictions based on current knowledge regarding when viable technologies may be available; although these predictions are likely to change as advances are made or, alternatively, unforeseen hurdles are encountered.

The following estimates have been made for a range of CSIRO research that is likely to result in something viable as an energy source (Note - this is distinct from available on the market which depends on non-technological factors):

- ⇒ Solar systems for electricity, heat and cooling (for small scale systems) – pre-commercial demonstration plants are operating now. Research is ongoing to improve efficiencies and reduce costs.
- ⇒ Solar Rankine cycles (for large scale electricity) – plants are currently operating in the USA. Research is ongoing to improve efficiencies and reduce costs.
- ⇒ SolarGas reforming technology (for electricity production and gas to liquid transport fuels) – a CSIRO demonstration of this technology is now operating. Industrial scale demonstrations are being pursued and could be up and running in 8 to 11 years.
- ⇒ Wind power – research to improved forecasting coupled with improved storage and management to allow optimal use of wind power is providing ongoing benefits.
- ⇒ Oil – technological advancements to improve the prospectivity from frontier basins to encourage greater exploration and reduce risks and uncertainties are continuous and ongoing.
- ⇒ Conventional gas – technological advancements to reduce the cost to access deep water and remote location resources are continuous and ongoing.

- ⇒ Tight gas and coal seam gas – technological advancements to increase recovery factors and lower production costs anticipated within the next three to five years, with further ongoing advancements.
- ⇒ Low grade energy recovery – research advancements to increase the efficiency in capture of and conversion of low grade heat sources and medium grade energy sources (e.g. conversion of waste and waste methane gas to electricity) are anticipated to occur over the next five years, with further ongoing advancements.
- ⇒ Converting hydrocarbons to liquid fuels – technological advancements to reduce greenhouse gas emissions from and the costs of production of these energy sources is anticipated within the next five years, with further ongoing advancements.
- ⇒ Biofuels – are currently available, however further research is required to assess environmental, and socio-economic impacts as well as ways to improve production volume and efficiency. Benefits from this research are continuous and ongoing.