

Issues Paper 4 correctly suggests that the Australian Government should avoid picking winners. Instead a portfolio approach is preferable. This is correct. However the Issues Paper fails to outline how specific R&D policies will assist in achieving a diversified approach. Some relevant aspects of a portfolio approach are as follows -

One of the key aspects of this portfolio approach is identifying the potential impact and maturation date of these different technologies. There is a clear need to understand the S curve of technology innovation and the potential impact of low emission technologies given our existing infrastructure basis. Strategic analysis of the potential delivery times of different technologies and their impacts needs to be a clear criteria in publicly funded R&D. Mapping these potential impacts on to emissions targets is critical. For example, aggressive funding nuclear fusion cannot be justified, if its possible commercialisation date is 50 year hence and more immediate carbon reduction is needed.

A low emissions technology Roadmap is needed that examines the potential impact of different technologies over the next 10, 20, 40 year timescales. This Roadmap is critical for establishing research priorities, without picking winners. The level of uncertainty in the Roadmap would need to be acknowledged. Also the assessment of the hyperbole of technology proponents would need to be independent and rigorous. Not everything can take over the world instantly!

The Roadmap would also need to establish Australian research comparative advantage (and disadvantage) and how the disadvantage may be overcome by international strategic alliance. For example, large scale hydrogen turbine development is far better left to Alstom and GE, or thorium reactors. However commercial testing of such technology (e.g. retrofitting turbines for hydrogen fuel) could be done in alliance with these companies.

Publicly funded R&D into low emissions should not pick winners, but it must be allowed to pick losers after initial investigations and progress reports from overseas. There is a need to continually benchmark low emission technologies against alternative and evolving technologies overseas. For example, if Alstom's chilled ammonia proves successful in pilot trials, and alternative solvent processes under development in Australia are not as effective, there shouldn't be ongoing public funding for the inferior approach. Importantly determination of losers should only occur after some investigation and assessment.