



Post-2005 assistance arrangements for the automotive manufacturing sector

Submission to the Productivity Commission

This submission is based on the experience and expertise of the Australian Automotive Technology Centre (AATC), which is a subsidiary of CSIRO, based in the CSIRO Division of Manufacturing Science and Technology. The purpose of AATC is to match CSIRO's research and development capabilities with the needs of the carmakers and component manufacturers in Australia or overseas with the aim of helping Australian industry to maintain its technological, and therefore its commercial competitiveness.

The value of CSIRO R&D related to automotive technology is more than \$14 million per year. The substantial majority of services provided by CSIRO to the industry are classified as Development rather than Research, addressing issues of refinement of current technologies rather than researching new ones. Since the introduction of Automotive Competitiveness and Investment Scheme, the profile of services requested by industry has not changed. Industry participants have confirmed that the profile of R&D within companies has changed very little since the introduction of ACIS.

This lack of change is an indicator that deserves attention. AATC believes that insufficient research and development is being carried out in Australia to sustain the long-term future of local vehicle and component manufacture.

There is universal agreement that hydrogen (fuel cell) technology will replace fossil-fuel technologies in motor vehicles. Most global carmakers – and several of the truck makers – have very substantial investments in the manufacture of fuel cells and application of fuel cell technology. There is debate over the length of time it will take for the technologies to impact on the general market, but companies such as Honda and Ford have announced that fuel-cell cars will be available on the U.S. market by 2004. General Motors Corporation has stated the majority of its cars will be fuel-cell cars by 2010. Toyota, already the leader in hybrid-electric car production, is well placed to convert its model range to the new technology as soon as the infrastructure for hydrogen manufacture and distribution is in place. EEC countries have agreed on the framework for hydrogen distribution, and numbers of hydrogen-powered cars will appear on their roads within the next five years.

However, Australia is not yet preparing for the coming sea change. For example, when Holden brought a General Motors fuel cell car to Australia in 2000, it could not be operated until CSIRO provided hydrogen from one of its laboratories. The situation has not changed.

Australia's automotive export success will increasingly depend on its technological currency and competitiveness. If the world is changing to a significantly different group of automotive technologies, Australian products will need to be at the leading edge.

It is not suggested that Australia needs to duplicate or compete with U.S., European or Japanese companies in fuel cell research (current activities overseas involve many billions of US Dollars). However, the downstream effects of the adoption of fuel cell cars means that most of the functional componentry in cars will change.

The biggest change is likely to be that all of a car's controls will become electrical instead of mechanical.

If the component manufacturing industry does not prepare for this change it will not be able to support local manufacture, let alone export markets. If local carmakers merely assemble components from import sources, they would not be likely to survive, either on the basis of cost or competitiveness with import product.

Australia has a fine record of innovation and development of niche opportunities. For example, Australia has the highest uptake of Liquid Petroleum Gas (LPG) technology in private motorcars. One carmaker now offers an LPG-only car in its model range. LPG componentry is now being made in sufficient volume to justify mass-production techniques, and in turn this creates a new export opportunity as other countries take up LPG technology. LPG technology is a useful lead-in to Compressed Natural Gas (CNG) technologies, and natural gas is a convenient source of hydrogen gas. Australia has abundant resources of natural gas and it is widely distributed throughout Australian cities and country towns. Eventually, Australian hydrogen-powered cars and trucks will derive their hydrogen from natural gas, even though more densely populated countries may adopt direct distribution of hydrogen gas.

For the future, Australia's automotive industry will need to address how to be technologically competitive with the overseas technology that is evolving now, or it will not survive. If industry does not reach further than step-by-step improvements to its current practices, it is not likely to remain competitive into the long term.

Research needs to be encouraged by incentives and creation of an appropriate, long-term regulatory and investment policy environment. Research has greater potential than development to create competitive edge, even though the risks may be higher. In view of the major technological challenges the industry is going to face, we consider that research needs to be recognised as more in need of incentive than Development. AATC recommends that, if ACIS is to be continued beyond 2005, it should contain more robust support/incentives for R&D and recognise the greater cost and risk of Research.

CSIRO is in the process of restructuring its offer of R&D services to the automotive industry, recognising the inherent inefficiencies of performing many small investigations as opposed to more challenging, longer-term research projects. AATC suggests that the automotive industry would benefit greatly from establishment of an automotive R&D facility. CSIRO's existing R&D assistance represents a substantial foundation on which an Australian Centre for Automotive Research could be built. Previous attempts to form an automotive industry research centre have been fragmented and unable to overcome State rivalries. Two proposals for a Cooperative Research Centre for automotive technology (1996, 2000) have foundered in part because of a lack of commitment by the industry. CSIRO is now well organised to support a cooperative arrangement under the auspices of ACIS that would encourage industry to participate strongly.

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6th May 2002