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Tasmanian Science and Technology Research Audit

Phase 1 Report
Public Sector Research

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Executive summary

Science and technology play a vital role in our society. They provide us with powerful tools for improving our social, economic and environmental well-being. Science and technology research is undertaken to increase our stock of knowledge and to devise new ways of doing things.

Tasmania is a base for a wide range of science and technology research. The knowledge generated through this research furthers the State's social, economic and environmental development and creates knowledge that can be applied globally. The research activity involves many hundreds of research and support staff and is an important economic activity in its own right.

The Tasmanian Government has recognised the importance of the State's science and technology research sector. It has established a key industry advisory body, the Tasmanian Science and Technology Council, which released an industry plan in 2004. An important part of that plan was the conduct of an audit of the science and technology research undertaken in Tasmania. That audit commenced in 2005 and this report is the first output.

In the first phase of the audit, qualitative and quantitative information was collected from 19 publicly funded organisations in Tasmania that undertook significant science and technology research. The audit identified that these organisations invest approximately $170 million per annum in science and technology research in Tasmania. Approximately one half of this research is undertaken by the State's higher education sector, primarily at the University of Tasmania. This is a similar proportion to other Australian states and territories.

Over one-third of the public sector research is undertaken by Tasmanian-based science agencies of the Australian Government. This is a much higher proportion than is found in other parts of Australia. State Government organisations account for around 13 per cent.

The profile of the research undertaken in Tasmania is different to the rest of Australia, with over 40 per cent of all research being undertaken to address environmental management issues. Much of the research includes studies that directly relate to Tasmania's natural environment and resources:

- Oceans
- Marine living resources
- Climate and atmosphere
- Native plants, animals and ecosystems
- Rivers
- Forests
- Mineral resources
- Agricultural resources.

Many other areas of research are indirectly related to Tasmania's geography and natural resources:

- Marine engineering
- Renewable energies
- Population health
- Aquaculture

- Mining
- Forestry production.

The organisations that undertake the research use the results in different ways. Much of the research is undertaken for the public good and the results are publicly released, often through publication in scientific journals. In a few cases, the knowledge created is commercialised.

A broad range of research facilities and infrastructure is available within the State. The higher education sector manages many of the facilities but there is considerable sharing of these facilities between organisations, typically through partnerships that develop between organisations and between individual researchers.

Tasmania offers many advantages as a base for science and technology research, including:

- Critical mass of researchers in various natural science fields
- Proximity to the Southern Ocean and Antarctica
- Comparatively undisturbed environment
- Diverse natural environment and resources
- Biosecurity and disease-free status
- Island status
- Compact nature
- Population characteristics, including unique genealogy and stability
- Prior investment in research, institutions and data-gathering
- Networks of scientists and other specialists.

While it has many advantages, Tasmania's small population and isolation can also present impediments to research.

Over the next five years, the current research profile is unlikely to change markedly. The most significant areas of research in the near future are likely to be:

- Antarctic and marine studies
- Climate
- Environment
- Frontier technologies
- Population and health
- Sustainable primary production
- Marine transport and engineering
- Renewable energy
- Food manufacturing
- ICT products.