



## **GROWING THE ANTARCTIC & SOUTHERN OCEAN SECTOR**

### **BUY-IN FOR TASMANIA AND THE NATION**

The Tasmanian Polar Network is the peak Antarctic and Southern Ocean sector industry body. This paper has been prepared for use by policy-makers and stakeholders to facilitate growth and sustainability in Australia's Antarctic and Southern Ocean sector and strengthen Australia's position as an Antarctic Treaty leader.

#### **Essential Points**

- Significant international standing is created by Australia's political, economic, social, scientific and environmental investment in Antarctic and Southern Ocean activities, harnessing international partnerships, building on current infrastructure and investment and bolstering our leadership status within the Antarctic Treaty System;
- The national, State and Hobart economies accrue significant benefits from Australia's Antarctic presence through private/public sector investment in equipment, logistics, research, education, tourism and resource management. Additionally, oceanographic and environmental surveys also attract international investment and expertise;
- The Antarctic and Southern Ocean sector is a sound investment delivering \$5.50 of total economic return for every dollar invested in the sector.
- In Tasmania the Antarctic and Southern Ocean sector directly employs more than 1100 people. In 2011/12 it directly contributed \$187 million (or 0.7%) to the Tasmanian GSP. Average wages in the sector are significantly higher than the Tasmanian average, standing at \$118,400 per full-time employee in 2011/12 compared to a state average of \$63,590. This provides a significant flow-on effect to the Tasmanian economy, where spending by sector employees generated a further 1606 jobs and an additional contribution of \$256.9 million to the Tasmanian GSP, for a total contribution of 2791 jobs and \$444.2 million;
- Working with Federal, State and Local governments, the Tasmanian Polar Network envisages a future where the sector will continue to grow and stimulate economic and social benefits for Tasmania through Tasmania's status as an internationally acclaimed Antarctic Gateway.

- The advent of Australia's Airlink and our ability to share some shipping capability has brought many Chinese, Korean, US and Italian expeditioners through Hobart. With growing pressure on the AAD operating budget, the first thing that must necessarily be cut will be the surplus capacity which we are able to share with other nations in exchange for their surplus capability.
- Disinvestment will greatly reduce the amount of high-quality scientific research in Antarctica and the Southern Ocean reducing the value of other investments in IMAS and the CRC.
- The sector is at a crossroads. With disinvestment in place for the Australian Antarctic program, the potential for Australia to lead collaboration with other nations will diminish.
- The sector's economic window presently stands open for Australia. There are pending decisions in the very near future by nations such as China, the United States, and the Republic of Korea on where they will stage and support their Antarctic programs. For example, enhanced fuel procurement, storage and refuelling capability in Hobart would attract a number of northern hemisphere nations to bring their Antarctic vessels through Hobart: possibly including the lucrative United States.
- If Australia, through Tasmania, does not plan, commit and prepare now, it will find itself unable to offer these nations the necessary infrastructure and support, or collaboration opportunities for science and research.
- Alternatively, expanded investment, led by Government and supported by the private sector, will reinforce Australia's role, standing and international commitment to Antarctic and Southern Ocean governance, management, science and education. This will attract expertise and foster a positive climate on which to expand Tasmania's unique Antarctic Gateway, one built on a century of Australian Antarctic exploration, research and management.

**To optimise Australia and Tasmania's opportunities as the international centre for integrated Antarctic and Southern Ocean research facilities and logistic capability, as well as the supply of relevant goods and services, investment is required now.**

## Background

The Tasmanian Polar Network (TPN) comprises research, science, logistics and other commercial suppliers, and for the past 20 years has actively engaged and worked with all levels of government to build a very vibrant and successful sector.

**VISION:** *Tasmania - the world's leading hub of excellence serving the Antarctic and Southern Ocean Sector*

**MISSION:** *To promote and maintain Tasmania's business, education and research roles in the Antarctic and Southern Ocean sector*

The sector has built and maintains a reputable profile. It enjoys tripartite political support. The very subject of Antarctica and Southern Ocean, and all things associated with it, captures the Australian community's imagination. Hosting the bulk of this supporting infrastructure, Tasmania's capacity is recognised as world-class for Antarctic, marine and climate science, research, logistics and education.

The achievements and advantages that Tasmania offers for Antarctic and Southern Ocean science, research and logistics include:

- the world's largest single concentration of Antarctic and Southern Ocean research scientists as well as co-located logistics operations
- the home base for the Australian Antarctic Division (AAD) including its logistics which serve four Antarctic stations
- a naturally-advantageous geographic location for sea and air access to and from East Antarctica
- a dedicated logistics hub and Antarctic and Southern Ocean wharf precinct in the port of Hobart
- a unique government-business alliance which enables the sector to be fluid, unified and proactive to opportunities
- long term home port for the French Antarctic program
- AAD, CSIRO, University of Tasmania research expertise, education
- host to three international secretariats, the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR); the Agreement on the Conservation of Albatrosses and Petrels (ACAP); and the Southern Ocean Observing System.

The TPN believes that, with the correct policy support and investment, Tasmania and the sector can benefit from the interest being shown by other nations in East Antarctica. The next growth opportunity for Tasmania will undoubtedly arise from the recent focus of international Antarctic programs to increase their collaboration, science and logistics. This trend is being driven by a number of factors including reduced operating budgets and the willingness of other nations to leverage and share resources.

We cannot be complacent. Tasmania is not the only option for international programs to stage their operations or obtain logistical support into East Antarctica. Both South Africa and New Zealand compete for this business and in many respects are both better equipped

with infrastructure to support sea and air logistics. Tasmania's success is also dependent on the future Government budget allocation for the AAD. The AAD is the keystone on which Tasmania has developed its excellent reputation.

Government policy and investment in the Antarctic and Southern Ocean sector is a sound option for driving the Tasmanian economy to a stronger long term economic outlook. The sector neatly fits with the change that Tasmania arguably needs to make to adopt innovative, smart and low impact business as well as career path development.

The sector delivers strong direct and indirect economic outcomes. It provides an impetus for private sector investment and growth through developments such as specialised equipment and retro fitting, specialised trade development, cold climate/remote medicine services for both Australian and other programs, a research hub for Antarctic and Southern Ocean expertise, specialised Antarctic and marine science education programs, and tourism.

### **Where are the benefits?**

In 2011/12 the sector:

- directly employed 1185 Tasmanians and indirectly another 1606
- directly contributed \$187.4 million (or 0.8%) to Tasmanian GSP and indirectly another \$256.9 million and
- Including flow-on effects, generated 4,663 jobs and contributed \$687.4 million to Australian GDP (ref Blacklow Economic Consulting 2013)
- The sector generates a total economic benefit of \$5.50 for every dollar invested to both the Tasmanian and Australian economies.

### **What is needed for Growth**

There are six interrelated areas that require development and investment to maintain, and then grow, the Antarctic and Southern Ocean sector to be the hub for East Antarctica.

#### **1. The Australian Antarctic Division**

The AAD requires realistic investment for current and future operating expenses and for capital works. It is understandable that given current economic circumstances, budget cutbacks are considered as necessary. However, the flow-on effects for the Tasmanian economy, not to mention Australia maintaining its lead amongst Antarctic Treaty nations, are real and should be not undermined by disinvestment.

If Australia does not maintain its leadership role with science and logistics how can it possibly attract other partnering nations? A wind-back for the AAD means a wind-back for the sector and consequently Tasmania's leading role in the sector. Now is the time to invest.

#### **2. Modernisation of the Australian Antarctic program to better support Australia and other national programs in East Antarctic**

Key areas of modernisation include the life cycle replacement of the *Aurora Australis*, redeveloped aviation logistics program, modernisation of stations and support equipment to underpin traverse science and related projects, including clean up of waste and contaminants that we as a nation are responsible for.

Modernisation of the AAD to expand logistics operations could result in significant gains, including attracting other nations' Antarctic programs, additional benefits such as shared operational programs with other countries. But if we choose to operate run-down equipment and stations, how can we be attractive to other nations such as China, which is rapidly investing in new stations, new shipping and modern stations?

Tasmanian businesses will benefit by supplying goods and services for the modernisation process, thereby directly and indirectly stimulating the Tasmanian economy. Science and research stand to gain through collaboration in Tasmania and in Antarctic and Southern Ocean fieldwork, thus strengthening our ability to become a hub of scientific excellence.

The operating and capital budget for the Australian Antarctic Division must be maintained and grown, because the future of the whole sector and the benefits to Tasmania hinge upon this critical point.

### **3. Logistics**

Offering infrastructure and serviced logistic options for other nations through East Antarctica could provide significant economic return for Tasmania and Australia. For example; the US program fly-in/fly-out operation, based in Christchurch, contributes around \$150 million annually to the New Zealand economy.

There is a base need for fit-for-purpose, modern operational logistic infrastructure for Hobart so that it can to become a true international Antarctic Hub.

There are two key infrastructure areas requiring further support for Antarctic and Southern Ocean logistics growth in Tasmania.

#### **3.1 Shipping**

The recent investment by Tasports to upgrade the Macquarie Wharf 2 facility as a dedicated Antarctic shipping logistics centre highlights the type of investment Tasmania needs to embrace so that the sector can attract international partners.

Should another nation locate its Antarctic shipping program in Hobart, additional port facilities will be required to address their quarantine and gate-check cargo requirements. These facilities will require planning and commercial backing.

Hobart has two operational wharves with wharf load specifications that suit commercial shipping. As Antarctic shipping grows, these wharves will be more in demand, albeit only during the summer season, which runs from September to April each year. Hobart is currently experiencing an unprecedented growth in demand for cruise ship visits which may lead to seasonal constraints on berthing availability for additional Antarctic vessels. While some of these constraints can be addressed through changes in berth booking systems and drawing on the 24-hour availability of the port, an additional operational berth may emerge as a future requirement. Should additional lay-up berths be required

for Antarctic vessels, such as now occurs with the *Astrolabe*, this need may also constrain the growth of the Antarctic sector.

A well-equipped port that offers appropriate Antarctic cargo storage and shipping facilities will be very attractive to nations looking for a logistics facility. The port operator should therefore continue to be closely involved in discussions leading to the need for additional infrastructure investment,

### **3.2 Aviation**

Aviation logistics is seen by many nations as an important even essential operational element of their Antarctic operations.

Facilitating the development of strong air logistics programs to the Antarctic from Hobart increases local employment opportunities through the creation of a diverse fly-in/fly-out (FIFO) workforce for Australian and other international Antarctic programs. Such a change would support a foundation for new businesses and growth in existing companies specialising in Antarctic station support, including equipment, maintenance, medical, construction, and research.

A decision on Australia's own Antarctic aviation operations and/or the ability for Australia to be able to support and/or seek foreign nation's aviation programs is pressing. China, India, France, Italy and Russia are known to be actively seeking options for aviation logistics, particularly opportunities to collaborate. China has been approached by other nations to secure their operational presence. The United States is reassessing how it services its bases in the future and is seeking collaboration. Australia needs to put itself in a position to capture these opportunities ahead of competitors such as South Africa and New Zealand that already have infrastructure to support desired operations.

The estimated economic return for a medium sized aviation focused Antarctic program based out of Hobart could be up to \$75m per annum (based on a proportion of the US program contribution to the NZ economy). To facilitate the attraction of international operations and growth of the Australian program infrastructure expansion is required at Hobart Airport. Such infrastructure investment would have flow on benefits to the broader community, for example the ability for direct charter tourism flights to operate to key tourism markets including China.

Extensions to Hobart Airport runway and taxiway systems would be required to enable larger and longer range aircraft to operation from Hobart to Antarctica and Asian destinations such as Shanghai.

## **4. Research and Education**

In terms of research into Antarctica and the adjoining Southern Ocean, Hobart is extremely well served through the combined efforts of the University of Tasmania, CSIRO Marine and Atmospheric Research and the Australian Antarctic Division. In addition, the recently re-funded Antarctic Climate and Ecosystems Cooperative Research Centre (ACE CRC), which is a joint venture involving the three afore-mentioned organisations, as well as many others, enhances the internationally-recognised research capabilities in the city.

Australian research into the Antarctic and Southern Ocean is centred in Hobart. Here, the scientific community provides expertise in oceanography, glaciology, ecosystem research, climate science, as well as the political and legal frameworks which underpin these disciplines. Strong links exist to the Commission for the Conservation of Antarctic Marine Living Resources and the Agreement on the Conservation of Albatrosses and Petrels, taking advantage of the presence of these important secretariats on the doorstep.

Hobart is the home port for the 24-year-old RSV *Aurora Australis*, which conducts research voyages into the Southern Ocean and the Antarctic sea ice zone, as well as the future home port of the RV *Investigator*, which is currently under construction and will come into service as a CSIRO National Research Facility later in 2013.

It is vital that Hobart maintains its pre-eminent position in oceanographic, Antarctic and climate research both on the national scale and on the international scene. This requires that funding is maintained and preferably increased for the relevant organisations. The recent announcement of a further 5 years of funding for the ACE CRC was welcome, and removed the uncertainty regarding its future and the job security of the research and research support staff employed therein. However, the ACE CRC will be in the same position of uncertainty 5 years down the track.

The Institute for Marine and Antarctic Studies (IMAS) at the University of Tasmania is also the focus of educational activities drawing on the research expertise in Antarctic and Southern Ocean topics. Students attend IMAS for training from undergraduate degrees to research higher degrees (PhD). IMAS has established links to CSIRO, AAD, ACE CRC and other relevant agencies in Hobart, as well as to other international institutions who offer courses in polar topics.

The University of Tasmania already attracts students from interstate and overseas to study at IMAS, but these enrolments need to be maintained and preferably grown.

Students moving to Hobart to study at the University of Tasmania represent a considerable source of income to the region. Apart from direct fees paid to the university by international students, the participation of these students in the economy of Hobart is far from negligible. The relocation of IMAS into the port precinct of Hobart offers an opportunity to rebadge Hobart as a marine university town, and compare well with other such centres around the world (e.g., Southampton, Bremerhaven, San Diego, Woods Hole).

## **5. Private Sector innovation and Antarctic development support**

There are a number of businesses currently located in Tasmania and Australia that offer specialised products and intellectual property to the Australian and other national programs.

Many of these businesses are members of the TPN – a current list is available at [www.tasmanianpolarnetwork.com](http://www.tasmanianpolarnetwork.com) - and while some are highly specialised many also generate income from other non-Antarctic sources. The commercial sector, and especially those Tasmanian business which rely considerably on the Antarctic sector, can support innovation, training and career pathways for future Tasmanians.

Innovation funding to increase the breadth of Australian business and engineering expertise in this area will provide opportunities for private sector growth and embellish the Antarctic sector's full potential in Tasmania. A well-established innovation program would encourage specialised industries to locate or relocate to Tasmania.

## **6. Career Pathway and Training**

Tasmania continues to struggle with high unemployment and low retention of school children to Year 12. The Antarctic sector provides a wide cross-section of potential careers, but it is evident that there is no or little coordination at the school curriculum and industry level to market these career opportunities. A high proportion of the tradespeople and skilled workers that enter the Australian Antarctic program come from interstate. This is a lost opportunity for Tasmanians.

If Tasmanians can undertake appropriate training or retraining and grow and promote Antarctic career pathways at school level the sector could grow its significance for the State.

This can be achieved through improved co-ordination and driven through the education system in alignment and co-ordination with the sector.