TASMANIA

Startup Accelerators - Background Information
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- IoT including Smart Cities 🏙 ....................................................................................................................................... 7
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TASMANIAN ACCELERATOR PROGRAM – KEY INFORMATION FOR SOME POTENTIAL VERTICALS

Tasmania - An Overview

Tasmania is the island State of Australia. It lies 240 kilometres south of the Australian mainland and has a distance from north to south of 296 km and 315 km from east to west. At 42° south, Tasmania has a mild and temperate maritime climate and hosts a population of over 520,000 (and growing fast).

Tasmania has built a reputation over recent decades as Australia's premium gourmet island. Tasmania has spectacular natural attributes including laying claim to some of the most pristine air in the world - Cape Grim in Tasmania was identified by the Australian Government's Scientific & Research Organisation as having the cleanest air on Earth.

Tasmania is the place to live in Australia, attracting lifestyle refugees from big cities across Australia and further abroad. Tasmania has a reputation for being clean, green, highly liveable and safe. With quality food products available to restaurants and cafes around the state within hours of harvest, the state attracts chefs who want to work with the best fresh produce available building a world-class small scale restaurant scene.

Launceston is the first city in Australia with city-wide LoRa WAN coverage as well as other Internet of things (IoT) networks. The LoRa network extends 25km up the Tamar River to George Town providing coverage for industry along the Tamar, and west through the Meander Valley to support agriculture in the valley.

Launceston is the first city in Australia with city-wide LoRa WAN coverage as well as other Internet of things (IoT) networks. The LoRa network extends 25km up the Tamar River to George Town providing coverage for industry along the Tamar, and west through the Meander Valley to support agriculture in the valley.

Tasmania’s natural advantages make it an ideal laboratory for research and development. The island’s relative geographic isolation, productive lands, rich ecological diversity and relatively small population mean the state is ideal for running pilots and trials.

Tasmania’s demographic profile makes it an excellent microcosm of Australia, in which to observe the effects of pilots and other interventions.

Furthermore, Tasmania’s temperate maritime climate, isolated landmass, fertile soils, abundant water availability, strict quarantine regulations and relative disease-free status all provide attractive natural advantages for agriculture, aquaculture and associated research. Such research has laid the ground work for many of the world-renowned, high-quality niche products for which the island is well known.

Accelerator Program Overview

To build on the momentum of the Innovation Hubs, the Tasmanian Government is providing support to attract world-leading accelerator programs to the State to deliver mentor-based programs that will help Tasmania develop a regional unfair advantage in its areas of significant flagship industry base and technical strength: areas (verticals) such as AgriTech, IoT, MarineTech and Renewable Energy. We are seeking a three year delivery period, with the first program commencing in late 2019.

Tasmania is looking for a well-established accelerator program delivery partner(s) who can also bring key corporate partners who, together, will attract top outside talent to Tasmania to develop their startups and thereby also help accelerate the development of the local ecosystem and support our focal points of excellence. We envision around three programs, lasting approximately three months each, to be run each year, with at least one a year focussing on AgriTech.

Each program would include an exceptional group of startups chosen from across the globe to participate for around three months. At least two programs would be based in Launceston, Tasmania and could be based from the purpose-fitted out central building, Macquarie House. Startups recruited would likely be technology enabled or based startups looking to operate in the relevant vertical, which have the potential to disrupt markets and have the potential to grow into significant businesses. Interest in Tasmanian Industry focused Accelerators is high – Telstra, Australia’s largest technology and solutions provider, has already signed to be an initiating corporate partner in the Agtech area and there is currently strong interest from other global companies.

We can help with
- Purpose-fitted office accommodation to host the program
- High-speed fibre to the premises national broadband internet connection
- Providing strong links to business, research institutions, State and Local Government agencies and local startup community networks.

Is there anything else you would need help with to deliver a world leading program in Tasmania? Contact our program team to discuss further: +61 3 6166 3219 or cg@cq.tas.gov.au
SOME EXAMPLES OF SUCCESSFUL TASMANIAN STARTUPS

Tasmania has a wealth of talent, particularly in technology and, with a history of pilot programs, it is great for product and market testing prior to scaling up.

Examples of great Tasmanian startups include:

<table>
<thead>
<tr>
<th>Savage Interactive</th>
<th>Biteable</th>
<th>Secret Lab</th>
<th>The Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>The lure of Silicon Valley was not enough to keep James Cuda, founder and CEO of Savage Interactive, away from Tassie’s tech hub. Developing iPad’s leading painting app, Procreate, James and wife Alanna, both believed their business would flourish in more of a creative space. “The geographical location of Tasmania provides the company with a disconnect from Silicon Valley – we’re not entrenched in the political and often toxic cultures of the Valley. Instead, we’re able to walk amongst nature, research new and interesting ideas and focus inward instead of competing with industry trends”. They chose the name Savage because they’re extremely hungry and driven to make the most compelling software in the world for creative professionals. Also chosen because Tasmania has a pretty brutal history. James and Alanna say it’s a lot nicer now. In fact, it’s an amazing part of Australia.</td>
<td>Biteable found a way to make video production more accessible with a simple, innovative online tool. Providing tutorials, examples and templates to make your own videos online, co-founders James MacGregor, Simon Westlake and Tommy Fotak, saw the value in starting (and growing) their business in Tasmania. Biteable is looking to grow their current team from 25 to 75 in 2019. The team will build out a film studio to produce content for their platform, and continue to develop Biteable before launching into a new market. The team credit the Tasmanian lifestyle for much of their success. “It’s just an amazing place to live and we’ve all been working in the industry long enough now to understand that a global success can really be launched anywhere if you have the time, resources and inspiration to give it a proper crack.”</td>
<td>Secret Lab has been nominated for and won numerous local, national and international awards, including BAFTA awards, Independent Games Festival awards, iAwards and TasICT awards. Secret Lab is a mobile consulting and product development company based in Hobart, Tasmania, Australia. Focusing on native iOS and Android apps and games for phones and tablets, as well as Unity games for a wide range of platforms. In 2012, business partners Paris Butfield-Addison and Jon Manning made the move from Silicon Valley to Tasmania, in a bid to grow their mobile consulting and product development company, Secret Lab. They also offer world-class developer training throughout Australia and New Zealand for both iOS and Unity. Jon and Paris have authored more than 20 books on app and game development, published worldwide through O’Reilly Media and Wiley.</td>
<td>Ros Harvey is an experienced entrepreneur and executive in the field of technology – particularly the Internet of Things (IoT) and user-centric design. Ros is committed to creating public good through the innovative use of technology, which is reflected throughout her career. Having founded The Yield in 2014, Ros heads up a team of leading engineers, data scientists, agriculturists and technologists, who work together to ensure that The Yield solutions offer long-term value to growers and industry. The company is backed by several global giants including Bosch, KPMG and Microsoft. The Yield is on a mission to transform the agriculture and food industries using technology. Today, and 50 years from now. It’s their aim to help achieve sustainable food production, and increase global readiness for future challenges.</td>
</tr>
</tbody>
</table>

Savage Interactive

Biteable

Secret Lab

The Yield
About Launceston

A Vision for Launceston

Our vision is to keep Launceston at the leading edge and attract startups to come and to trial new ideas, using its implemented different technologies – for example different IoT networks that are operational across the City and region, capitalising on the significant digital infrastructure (eg FTTP NBN) and building new business and ecosystems from Northern Tasmania.

LAUNCESTON’S ADVANTAGES

<table>
<thead>
<tr>
<th>Corporate Partner: Telstra</th>
<th>National Broadband Network Advantage</th>
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<tbody>
<tr>
<td>Telstra is Australia’s largest and leading telecommunications and technology company, offering a full range of communications services and competing in all telecommunications markets. Telstra believes the more connected people are, the more opportunities they have. Telstra has already signed to be an initiating corporate partner to a Tasmanian Accelerator program. The Greater Launceston Transformation project (GLTP) is a multi-million dollar partnership between Telstra, the University of Tasmania and Federal, State and Local governments, where the City of Launceston has been chosen as the vanguard in Australia’s move into a smarter and connected future. To achieve its vision, greater Launceston is currently implementing leading tools and conducting trials which will define the future of city planning, healthcare, education and emergency management. Launceston’s gigabit potential NBN, Telstra’s 5G technologies and NarrowBand Internet of Things (NB-IoT) network and other communications network infrastructure will connect every day and specialist devices in business, government and the home for uses including managing urban development and decision making, parking, vehicle tracking and agricultural farms and equipment. Telstra’s new Technology and Innovation Centre of Excellence in Launceston will showcase outputs and link with Telstra’s flagship Customer Insight Centres across the world and is a further demonstration of Launceston’s capacity to service high technology and data intensive activities.</td>
<td>Launceston is well placed to exceed expectations for fast, reliable, low latency and high capacity communications for data-intensive needs. As one of the first locations in the country to be fully connected to the NBN, Launceston has access to the best ‘fibre to the premises’ (FTTP) technology. At least one ISP offers fibre to the premises at nation-leading speeds of up to 1 Gbps (1,000 Mbps) download and 400 Mbps upload, or ten times faster than the 100Mbps maximum speeds typically offered nationally. Launceston’s potential for gigabit speeds can allow businesses to perform very high speed data intensive activities joining elite world cities that boast the fastest Internet speeds such as Amsterdam, Singapore, Toronto and Barcelona. Tasmania currently has three fibre optic cables connecting the state to the Australian mainland. Two are owned by Telstra and the third by Keppel Corporation (through Basslink Pty Ltd), providing multiple fibre optic connectivity and service bundle options through national and international points of interconnection.</td>
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The Importance of the Startup Community in Tasmania

The Tasmanian Government is committed to supporting pathways in the commercialisation of new ideas and products and has allocated considerable multi-year funding to support Tasmania’s Innovation Hubs. Enterprize Tasmania Ltd, launched in September 2016, is a small network of innovation hubs based in Hobart and Launceston, established to support Tasmanian entrepreneurs turn their ideas into successful scalable businesses. Providing support across sectors, the hubs particularly support technology-enabled startups and scaleups.
Launceston has a rich and vibrant heritage, and, ever the early-adopters. We can lay claim to many Australian ‘firsts’. The first anaesthetic in the Southern Hemisphere was used here, Launceston was the first Australian city to have underground sewers and to be lit by hydro-electricity.

Through the GLTP, Launceston is becoming Australia’s most innovative and connected regional city. Telstra has been testing, trialling, releasing and launching new technologies and equipment (e.g. NB-IoT and 5G) in Launceston among the first across Australia, helping to further establish Launceston as an innovators “sand-pit” for IoT and Smart Cities.

The GLTP is Australia’s leading Smart Cities partnership implementing nation-leading tools and conducting trials which will define the future of city planning, healthcare, education and emergency management.

More recently, Launceston was the first city in Australia with city-wide LoRaWAN coverage. The pilot network provides a test platform for Tasmanian developers and businesses to create, trial and commercialise new technology solutions for a range of purposes aligned to IoT. This IoT initiative significantly raised the awareness of the technology within the state and inspired and stimulated a wide range of LoRa related activities. Enterprize Tasmania Ltd’s hubs provide programs, linkages and networks to assist Tasmanian entrepreneurs to develop, test and accelerate from concept to sustainable start-ups. As the ecosystem grows, greater corporate collaboration is also expected beyond the tech industry links currently established.

The area around Launceston is a diverse productive agricultural region where there is activity using sensors and IoT technology. Farmers and processors are getting valuable information in real time to help make vital decisions. There are numerous examples across the sector. For example, in Viticulture, applications include using sensors to identify evaporation, to pick up the early signs of frost and to improve quality and yield.

This is all just the early stages of a decade long urban development vision. The greatest potential lies ahead further leveraging all the investments, commitments and agreements to continue to provide nation-leading infrastructure, partners and projects.

Enterprize Tasmania Ltd played a key role in the development of the pilot Low Energy, Long Range, and Wide Area Network (LoRaWAN) rollout in Launceston which initiated the LoRaWAN to underpin Internet of Things (IoT) growth by developers and businesses for smart technologies. The project was a joint effort from a range of stakeholders including Definium Technologies, UTAS, Sense T, CSIRO, State Government and others. Together with other parts of the ecosystem including the demonstrated capability of local stakeholders significant barriers have been removed for Tasmanian developers who are can pursue the technology to build new cutting-edge solutions for existing problems.

GLTP

Advanced platforms and 3D models of the whole Greater Launceston region are now available, and by combining these models with a range of data overlays and de-identified mobile data, it is possible to see uses and trends and to design pilot solutions for the city and region. This technology can provide great benefits when piloted in Tasmania and used to determine ways to improve services and can then be rolled out to much larger markets.

Assisted by the Office of the Coordinator-General, Enterprize Tasmania is galvanising the Tasmanian startup ecosystem providing Tasmanian startups with access to a suite of products, services and training along with access to international communities. Telstra has also committed to sponsoring an Internet of Things (IoT) mini-lab in Launceston in order to support the emerging technology cluster developing in the city and to encourage more local entrepreneurs to work on new devices and business models.

Tasmania is fortunate to have a company like Definium Technologies. Definium Technologies designs and manufactures intelligent sensors and control systems for a wide range of applications. Earlier this year Definium signed a $1.5 million contract to supply hi-tech electronic components to a large-scale mining project with international reach.

Definium Technologies regularly works internationally with companies, and its collaboration with UTAS underscores its future-focus. This partnership has paved the way for an advanced manufacturing facility in Launceston producing state-of-the-art digital sensors. UTAS is actively supporting innovation, research and development across the State as well as encouraging entrepreneurship from its students of all disciplines and this partnership is one of the ways UTAS achieves that.
Tasmania – An Agriculture Overview

Tasmania offers a number of advantages to agribusiness including:

- lowest land cost in Australia;
- rich soils ideal for agriculture; Tasmania has the highest proportion of ferrosols soils of any Australian state (some of the most productive soils for cropping);
- an abundant water supply – 27% of Australia’s total fresh water storage (yet less than 1% of Australia’s total land area);
- rigorous biosecurity – potatoes, for instance cannot be imported into Tasmania;
- ground-breaking irrigation development projects that provide water surety for key agricultural areas and enable production innovation;
- easy access to the Australian market and niche export markets;
- the ability to supply out-of-season fresh produce to northern hemisphere markets;
- best industrial relations record in Australia in terms of days lost to disputes;
- one of the lowest business taxation ratios in Australia;
- independent and transparent environmental regulatory regime;
- low sovereign risk;
- relatively free from natural disasters; and
- Peace and safety.

Importance of the Agriculture Industry to Tasmania

Tasmania has built a reputation over recent decades as Australia’s clean, green, safe, premium gourmet island. Outstanding seafood, a range of more than 100 specialty cheeses, world-famous honey (including organic leatherwood honey from rainforests), premium meat and crisp fresh vegetables, attract key buyers and repeat loyal consumers. The state is well connected to markets via sea and air freight, helping to support our food and beverage industry, where at least three quarters of Tasmania’s food and beverages are sold off-island to other Australian states or exported to countries around the world.

Tasmania has spectacular natural attributes including laying claim to some of the most pristine air in the world. Cape Grim in Tasmania is identified by the Australian Government’s Scientific and Research Organisation as having the cleanest air on Earth.

The island is home to many of the world’s leading food and beverage manufacturing companies as well as skilled farmers and researchers who help to ensure Tasmanian science research contributes significantly to the agriculture industry’s productivity. Diverse agriculture within approximate distances, advanced research and knowledge, relatively high levels of on-farm innovation, as well as expertise to produce the high-quality products are already a feature of the state’s agriculture industry making Tasmania an excellent location for developing and testing agricultural technology.

Primary Production in Tasmania

Diversity in agriculture (farm gate or beach value) - $ millions

<table>
<thead>
<tr>
<th>Commodities</th>
<th>Salmonoids</th>
<th>Dairy</th>
<th>Beef</th>
<th>Potatoes</th>
<th>Rock Lobster</th>
<th>Lamb &amp; Mutton</th>
<th>Abalone</th>
<th>Other Fruit &amp; Veg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value (millions)</td>
<td>$704</td>
<td>$386</td>
<td>$309</td>
<td>$106</td>
<td>$95</td>
<td>$88</td>
<td>$83</td>
<td>$68</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Other Livestock</th>
<th>Berries</th>
<th>Cherries</th>
<th>Apples &amp; Pears</th>
<th>Onions</th>
<th>Other Seafood</th>
<th>Wine Grapes</th>
<th>Field Crops</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value (millions)</td>
<td>$57</td>
<td>$64</td>
<td>$64</td>
<td>$46</td>
<td>$39</td>
<td>$29</td>
<td>$29</td>
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<tr>
<td><strong>Tasmania’s Top Fruit Production</strong></td>
<td><strong>Tasmania’s Top Vegetable Production</strong></td>
<td><strong>Other Crops</strong></td>
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<tr>
<td><strong>1st - Cherries</strong></td>
<td><strong>1st - Potatoes</strong></td>
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<tr>
<td>→ $64 million – gross farm gate value annually</td>
<td>→ $106 million gross farm gate value</td>
<td>→ Stone fruit (apricots, nectarines, peaches, plums)</td>
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<td></td>
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<tr>
<td>→ Over 65 businesses</td>
<td>→ Over 260 businesses</td>
<td>$700,000</td>
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<tr>
<td>→ 5.2 million kg annually</td>
<td>→ Over 5,000 hectares in total with a majority dedicated to the processing market</td>
<td>Pears $1 million</td>
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<tr>
<td>→ Over 500,000 trees of bearing age</td>
<td>→ Over 230,000 tonnes per year for processing with around 19,000 tonnes for the fresh market</td>
<td>Grapes for wine production $29 million</td>
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<tr>
<td>→ Over 100,000 trees not yet of bearing age</td>
<td>→ About 52 tonnes per hectare for processing potatoes and 50 tonnes per hectare for fresh market potatoes</td>
<td>Beans $6 million</td>
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<tr>
<td>→ Yield of 10.3 kg per tree</td>
<td>→ $275 million in net interstate sales (less than $1 million in international exports)</td>
<td>Brussel sprouts and cabbages $1.8 million</td>
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<tr>
<td>→ Around $50 million in international exports</td>
<td></td>
<td>Capsicums $4.8 million</td>
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<td><strong>2nd – Berries</strong></td>
<td><strong>2nd - Onions</strong></td>
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<tr>
<td>→ $64 million – gross farm gate value annually</td>
<td>→ $39 million gross farm gate value</td>
<td>Mushrooms $5.4 million</td>
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<tr>
<td>→ Raspberries &amp; blackberries account for around 48.2% of farm gate value</td>
<td>→ 75 businesses</td>
<td>Peas $8.5 million</td>
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<tr>
<td>→ Over 45 businesses</td>
<td>→ Over 1,000 hectares</td>
<td>Pumpkins $845,000</td>
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<tr>
<td>→ 500 or more hectares</td>
<td>→ Around 59,000 tonnes produced each year</td>
<td>Tomatoes $1.6 million</td>
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<tr>
<td>→ 145 hectares not yet of bearing age</td>
<td>→ Approximately 56 tonnes produced per hectares</td>
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<tr>
<td>→ Yields vary per fruit (6,500 kg/ha for blueberries and 35,480 kg/ha for strawberries)</td>
<td>→ Around $18 million in international exports</td>
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<tr>
<td><strong>3rd – Apples</strong></td>
<td><strong>3rd - Salads</strong></td>
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<tr>
<td>→ $46 million – gross farm gate value annually</td>
<td>→ $28 million gross farm gate value</td>
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<tr>
<td>→ Over 60 businesses</td>
<td>→ 6 businesses</td>
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<tr>
<td>→ 31.2 million kg per year</td>
<td>→ Approximately 150 hectares outdoor and 10,000 square meters undercover</td>
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<tr>
<td>→ 1.4 million trees</td>
<td>→ Over 1 million kg produced per annum</td>
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<tr>
<td>→ 177,000 trees not yet of bearing age</td>
<td>→ Over 6,700 kg produced per hectare</td>
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<tr>
<td>→ 26.1 kg per tree</td>
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<td>→ $5 million – gross farm gate value annually</td>
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<td>→ 10 businesses</td>
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<tr>
<td>→ Walnuts account for most of the value and hazelnuts the remainder</td>
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<tr>
<td>→ 162,800 trees with a majority of bearing age</td>
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<td><strong>4th – Nuts</strong></td>
<td><strong>4th - Carrots</strong></td>
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<td>→ $5 million – gross farm gate value annually</td>
<td>→ $19 million gross farm gate value</td>
<td>Wheat for grain $14.6 million</td>
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<tr>
<td>→ Over 60 businesses</td>
<td>→ 75 businesses</td>
<td>Oats for grain $1.5 million</td>
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<td></td>
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<tr>
<td>→ 31.2 million kg per year</td>
<td>→ Approximately 830 hectares</td>
<td>Barley for grain $5 million</td>
<td></td>
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<tr>
<td>→ 1.4 million trees</td>
<td>→ Over 56,700 tonnes produced per year</td>
<td>Canola $1 million</td>
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<tr>
<td>→ 177,000 trees not yet of bearing age</td>
<td>→ Over 68 tonnes per hectare</td>
<td>Crops for hay $42 million</td>
<td></td>
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<tr>
<td>→ $5 million – gross farm gate value annually</td>
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<tr>
<td>→ 10 businesses</td>
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<tr>
<td>→ Walnuts account for most of the value and hazelnuts the remainder</td>
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<tr>
<td>→ 162,800 trees with a majority of bearing age</td>
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</tbody>
</table>

**Other Crops**

- Avocados
- Maize for grain
- Faba Beans
- Opiates – poppies
- Pyrethrum
- Wasabi
- Crops for essential oil production
- Seeds (food, flower, pasture, hemp)
- Olives
- Garlic
<table>
<thead>
<tr>
<th>Crop</th>
<th>Tonnes 2016/17</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apples &amp; Pears</td>
<td>28,772</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Beans</td>
<td>5,955</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Blueberries</td>
<td>621</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Carrots</td>
<td>52,150</td>
<td></td>
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<tr>
<td>Cauliflowers</td>
<td>6,282</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Cherries</td>
<td>2,764</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Wine Grapes</td>
<td>13,197</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Hops</td>
<td>NA</td>
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<tr>
<td>Leafy salad vegetables</td>
<td>5,014</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Olives</td>
<td>169</td>
<td></td>
<td></td>
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<tr>
<td>Onions</td>
<td>52,928</td>
<td></td>
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<td></td>
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<tr>
<td>Peas</td>
<td>29,865</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Potatoes</td>
<td>322,214</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Raspberries</td>
<td>1,707</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strawberries</td>
<td>3,643</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walnuts</td>
<td>2,860</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Availability</td>
<td></td>
<td>Low</td>
<td>Med</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>High</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Crop Seasonality**

*Crop Availability: Low, Med, High*
Growing and operating conditions

<table>
<thead>
<tr>
<th>Soil Chemistry</th>
<th>Water Availability</th>
<th>Irrigation Schemes</th>
<th>Freight Equalisation Scheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tasmania contains a diverse range of soils due to variations in climate, landscape and geology. There are thirteen major types of soil in Tasmania: being, Calcarosols, Chromosols, Dermosols, Ferrosols, Hydrosols, Kandosols, Kurosols, Organosols, Podosols, Sodosols, Tenosols and Vertosols.</td>
<td>Tasmania is 0.9 per cent of Australia’s total land area and as at November 2018 had 29.08 per cent of Australia’s fresh water storage and 27 per cent of Australia’s freshwater storage capacity:</td>
<td>Tasmanian Irrigation Pty Ltd (“Tasmanian Irrigation”) was established on 1 July 2011 as a State-owned Company responsible for developing and operating a suite of irrigation schemes.</td>
<td>The <strong>Tasmanian Freight Equalisation Scheme</strong> provides financial assistance to shippers of eligible freight destined for both Australian and International markets. The amount of assistance is based on the difference between the freight costs of moving the goods by sea and the notional freight costs of moving them by road over an equivalent distance.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Volume (GL)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tasmania</td>
<td>13,411</td>
<td>29.08%</td>
</tr>
<tr>
<td>Western Australia</td>
<td>7,448</td>
<td>16.15%</td>
</tr>
<tr>
<td>New South Wales</td>
<td>7,915</td>
<td>17.18%</td>
</tr>
<tr>
<td>Victoria</td>
<td>8,010</td>
<td>17.37%</td>
</tr>
<tr>
<td>Queensland</td>
<td>6,852</td>
<td>14.86%</td>
</tr>
<tr>
<td>South Australia</td>
<td>2,147</td>
<td>4.66%</td>
</tr>
<tr>
<td>Northern Territory</td>
<td>233</td>
<td>0.51%</td>
</tr>
<tr>
<td><strong>Australian Capital Territory</strong></td>
<td><strong>102</strong></td>
<td><strong>0.22%</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>46,118</strong></td>
<td><strong>100.00%</strong></td>
</tr>
</tbody>
</table>

Dermosols are the dominant soil order in Tasmania (24%) with a wide geographic occurrence except in the southwest of the State.

Tasmania has a greater proportion of Ferrosols (8.4%) than the whole of Australia (0.8%) and these soils are some of the most productive with over 25,000 ha used for cropping.

The Cradle Coast Region contains over half of Tasmania’s Ferrosols and the combination of good soils and a temperate moist climate makes the Cradle Coast Region the most agriculturally productive in Tasmania.

The highly productive Ferrosols are a critical asset for sustainable agriculture and forestry, both in the Cradle Coast Region, and in the State, and help explain the Tasmanian operations of leading food and beverage manufacturers from around the world.

With a temperate climate, high rainfall, tremendous fresh water storage and excellent irrigation, Tasmania is a natural agricultural leader.

The **Tasmanian Freight Equalisation Scheme** provides financial assistance to shippers of eligible freight destined for both Australian and International markets. The amount of assistance is based on the difference between the freight costs of moving the goods by sea and the notional freight costs of moving them by road over an equivalent distance.

The objective of the Scheme is to provide Tasmanian industries with equal opportunities to compete in other markets, recognising that, unlike their mainland counterparts, Tasmanian shippers do not have the option of transporting goods interstate by road or rail.

Under the TFES, eligible shipments receive assistance at a flat rate of $700 per 20 foot equivalent unit (TEU), with 40 foot containers receiving assistance of $1,400. Indicative shipping costs from wharf to wharf between northern Tasmania and Victoria are approximately $1,130 per full TEU. Larger shipments can achieve additional cost effectiveness through the utilisation of 40 foot containers.
## Innovation in Agriculture

### Supporting the Agri-business eco-system

Tasmania is continuing to build on its culture of innovation and companies, research institutions and the Tasmanian Government are committed to supporting entrepreneurial pathways and the commercialisation of new ideas and products.

**Enterprize Tasmania**

Enterprize Tasmania Ltd is a network of innovation hubs based in Hobart and Launceston, established to support Tasmanian entrepreneurs turn their ideas into successful scalable businesses and to develop the Tasmanian startup ecosystem more broadly. Although working across all sectors, particular focus is channelled towards technology enabled start-ups, including agri-tech.

**AgriTech Accelerator**

Tasmania is the perfect location for a leading AgriTech accelerator for reasons such as:

- Its strong agricultural pedigree
- Disproportionate representation of industry-leading corporates
- IoT and technology production capability
- Leading connectivity: NBN, LoRa, NBLoT, Sigfox
- Research excellence: UTAS and CSIRO
- International interest from global and local corporates
- Strong brand, known globally for premium quality
- Existing successful startup and scale up trailblazers
- Government and key player support

With Tasmania’s diversity in agriculture and appetite for innovation, the state offers exceptional counter-seasonal opportunities to develop, test, and market AgriTech innovations.

### Collaborative Research

Tasmanian producers and manufacturers are increasingly seeking automated and technology solutions to grow or transform their businesses and improve profitability. Whether it be pivot irrigators, drones, or sensing technologies, Tasmanian producers have a strong appetite for trialling and deploying smarter technology.

A key strength in the Tasmania's agri-business value proposition is the collaboration across sectors. Research institutions such as TIA, work directly with farmers and their industry bodies, the University of Tasmania, and government departments (such as the Department of Primary Industries, Parks, Water, and Environment ‘DPIPWE’), to ensure that research and development is informed by practical on farm and supplier needs and extension services.

**Tasmanian Institute of Agriculture (TIA)**

An innovative joint venture between UTAS and DPIPWE, the Tasmanian Institute of Agriculture’s focus is on developing prosperous, innovative and sustainable rural industries and communities. The Institute’s capability covers the entire agriculture and food value chain from production to consumption. TIA has six research centres that give it the agility to adapt to industry’s strategic goals: Dairy, Extensive Agriculture, Food Systems, Perennial Horticulture, Vegetables, and Irrigation.

**The Commonwealth Scientific and Industrial Research Organisation (CSIRO)**

The CSIRO has a national focus to help Australian Farmers and industry to improve productivity and sustainability. The Tasmanian sites for this organisation focus on both marine and agricultural research.

### Capability and Innovation in Education

The University of Tasmania (UTAS) provides a creative and stimulating academic environment. While maintaining a distinctive Tasmanian identity, the University of Tasmania offers a truly international curriculum and broad access to a diverse range of degrees, student exchanges and learning experiences to shape future global leaders.

The QS World University Rankings by Subject (2018) has placed the University amongst the best in the world (the top 100) in the disciplines of ‘Agriculture and Forestry’, ‘Earth and Marine Science’ and ‘Environmental Sciences’. In 2015, the Excellence in Research for Australia (ERA) Report awarded UTAS (through TIA) its highest possible rankings in two areas: Horticultural Production and Agriculture; and Land and Farm Management.

The University is continuing to expand its agricultural education options and has recently introduced an Associate Degree in Agribusiness. The program combines business and technical studies through a unique blend of online learning, face-to-face classes, practical workshops and industry placements. In addition the University now offers an Associate Degree in Applied Technologies which builds skill bases in robotics, automation, information security and data analysis.

**Competitions**

A ‘Big Ideas Competition’ by UTAS encourages new ideas across sectors including innovative ideas in IoT.

U-hack, GovHack, Pitchfest and other competitions including the LoRa Schools challenge encourage innovation across all ages and areas, particularly around IoT.
With 3,200 km of unpolluted coastline, aquaculture production comes naturally to Tasmania. The cool and pristine Southern Ocean waters that surround the state provide ideal temperatures and one of the world’s healthiest environments for the raising of premium aquaculture products.

As the southern-most island state of Australia, marine-vessel design and manufacture enjoys a long and esteemed history, for example Tasmania supplies world-leading catamaran ferries around the globe.

The Australian Maritime College (AMC) supports both merchant and military maritime in training, education, research, design, engineering and testing.

Even though it is widely known for its advanced manufacturing capabilities in the field of maritime, particularly shipbuilding and related maritime products and components, Tasmania is strongly represented in Maritime Research through the AMC. Integrated Marine Observation System (IMOS) and Institute of Marine and Antarctic Studies (IMAS).

Aquaculture is among the fastest-growing food production sectors in the world and is expected to be an increasingly important source of the global fish supply.

Tasmania is internationally recognised for its top quality aquaculture and wild fisheries products. Species that are commercially farmed in Tasmania include abalone, Atlantic salmon, blue mussels, ocean trout, Pacific oysters and seahorses.

Importance of Innovation in the Maritime Industry

Tasmania manufactures the world’s leading life-raft system for large vessels including British aircraft carriers, builds wave piercing catamarans, marine science infrastructure, aquaculture farming products, aviation and marine defence buoyancy systems, and world-class simulation technology. A purpose-built TasTAFE College of Metal Fabrication is situated adjacent to the Incat boatyard in Hobart. This facility ensures the training of welders, development of appropriate welding procedures, and advanced testing techniques are offered in the world’s best practice aluminium shipbuilding.

Tasmanian businesses which exhibit world-leading innovation in maritime products and services include Incat, Taylor Marine, PivotMarine, Liferaft Systems, CBG Systems, FioMarine, AMC Search, Sense-T, Tassal, Huon Aquaculture, AQ1 Systems and many more. Between them they provide a wide range of innovative solutions in the maritime and aquaculture industries.

MarineTech Accelerator

Tasmania is the perfect location for a leading MarineTech accelerator for reasons such as:

- Australia’s largest aquaculture industry
- Significant research and development partnerships between industry, university and government
- Robust advanced manufacturing history
- A strong base of maritime manufacturing and engineering organisations
- Links to Antarctic and the Southern Ocean operational and research agencies
- Strong brand, known globally for specialist maritime products
- Existing successful startup and scale up trailblazers
- AMC and University of Tasmania commitment to innovation in MarineTech
- Continual product innovations by industry which are backed by scientific research

World-leading Maritime Products from Tasmania

- **High speed catamaran for ferries and defence**
  - Global

- **Plastic sea cages**
  - New Zealand, Asia, Europe, Scandinavia

- **Marine evacuation systems**
  - Global

- **Hydrophone based fish feeders for farming**
  - Asia Pacific, Scandinavia, Europe
Innovation in MarineTech

The Tasmanian aquaculture and maritime industries are highly innovative. They develop and utilise leading technology, processing and manufacturing systems combined with the best conditions to achieve outstanding products. Tasmania has world-class aquaculture handling methods, sophisticated quality assurance and transport systems, and excellent research support. Tasmania also provides a premium location for product development and testing. Continued industry expansion relies on research that fosters the development of quality products from healthy, genetically superior animals raised on efficient, sustainable feeds.

Sense-T

Sense-T was a first mover in the internet of things and big data in Tasmania. It is using data sensing technologies and data analytics to help see alignments and opportunities, to improve decision making and create real impact. Sense-T is helping farmers improve yields, helping the wine industry better understand disease, transforming Tasmanian food value chains and is well-known in helping the salmon industry improve environmental practices. It is also tracking tourist’s movements that provide industry insights and enhance visitor experience. Based at the University of Tasmania, Sense-T is a partnership between the University, CSIRO and the Tasmanian Government, and is also funded by the Australian Government.

AQ1 Systems

Tasmanian-based aquaculture engineering company AQ1 Systems has developed an intelligent process for feeding shrimp and fish through sound detection. At the heart of the system is a hydrophone, or underwater microphone, that monitors the sound of feeding. The passive acoustic sensing technology has embedded algorithms that measure hunger levels of the shrimp or fish and dispense a precise amount of food to match their appetite. These algorithms feed shrimp and fish by measuring the sound of feeding intensity, then using the information to match feed delivery with appetite. Because prawns eat frequently throughout the day and night, any system that aligns food delivery with their appetite saves money. In addition, eliminating the amount of uneaten feed in a pond keeps water quality as high as possible, optimising the prawns’ average daily growth rate.

Tasmania is home to a variety of innovative products:

### Advanced Manufacturing
- Internationally renowned shipbuilding; ranging from high speed catamarans to wooden boats
- World-class maritime engineering training and testing facilities
- Producers of maritime defence components and equipment
- Production of leading marine evacuation systems and large capacity life rafts
- Australia’s largest producer and supplier of plastic sea-cages, purpose built to prevailing weather conditions, currents, water depths and seabed characteristics
- Mooring systems and solutions
- Mort collection systems
- Polyethylene workboats
- Purpose built feeding vessels and barges that carry the most feed volumes and have the most feed points of their kind in Australia
- Farm boundary marking and solutions with optional solar powered lighting
- The world’s largest live fish pump with a purpose-built grader and electronic counter

### Software
- World-class maritime training and simulation facilities
- World leading software for aquaculture producers to construct detailed, comprehensive, accurate, financially optimised and real-world plans about all significant aspects of their business.
- Innovative supplier sensor based feeding control technology.
- State-of-the art feed monitoring systems that use real-time technology, such as underwater cameras, to measure uneaten feed and adjust feed delivery to the appetite of the salmon.

### Logistics
- World-class maritime logistics training
- Purpose designed and built harvest fish transportation trailers
- Purpose designed and built live fish trailer sets to transport live fish from spawning ponds to farms.
Tasmania is home to a vibrant and internationally respected science and research community. The Tasmanian maritime and aquaculture industries have an exceptional reputation for strong and productive research and development partnerships between industry, university and government.

<table>
<thead>
<tr>
<th>Integrated Marine Observation System (Division of UTAS)</th>
<th>Australian Maritime College</th>
<th>Institute of Marine and Antarctic Studies (Division of UTAS)</th>
<th>CSIRO (Australian Government)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia’s Integrated Marine Observing System (IMOS) is a nationwide collaborative program that uses the latest technology to observe the coastal and deep-ocean waters around Australia. IMOS coordinates a multi-institutional ocean observing capability in the Southern Ocean. Data is collected through the deployment of instruments including Argo floats, satellite tags on marine mammals and deep-water moorings as far as the East Antarctic shelf. The Australian and international marine and climate science community can access the data via a web portal, which provides a scientific basis for informed decisions about Australia’s vast and valuable marine estate. IMOS observations are guided by science and undertaken across the Australian marine and climate science community with input from other stakeholders. The observations and data are collected via various technology platforms, including: - Autonomous floats, gliders and vehicles - Volunteer commercial and research vessels - National mooring network and deep water moorings - Radar, satellite and sensors. The Australian Maritime College (AMC) is the national institute for maritime training, design, education, research and consultancy located in northern Tasmania. A specialist institute of the University of Tasmania, AMC offers a wide range of industry-relevant maritime education from vocational training through to undergraduate degrees and higher degrees by research. Courses cover the major study areas of maritime business and international logistics, ocean seafaring, maritime engineering and coastal seafaring. AMC students and industry partners enjoy access to the Southern Hemisphere’s most advanced collection of maritime facilities including a fleet of training vessels and autonomous underwater vehicles, ship simulators, survival training centre, towing tank, model test basin and cavitation research laboratory. Truly global in nature, AMC has many staff who were born outside of Australia and around half of its student cohort are international from over 50 countries. AMC qualifications are internationally recognised and developed in collaboration with industry and government bodies, ensuring its skilled graduates are in high demand globally. The Institute of Marine and Antarctic Studies (IMAS) at UTAS is recognised for carrying out world-class research. Research at IMAS is linked by three themes; climate change, ocean-earth systems and oceans and Antarctic governance. In the 2017 CWUR world university rankings by subject, the University of Tasmania was ranked fourth in the world for Marine and Freshwater Biology, and seventh in the world for both Fisheries and Oceanography. Its aquaculture program is a leader in the development of alternative species for temperate aquaculture while also meeting the needs of established aquaculture industries. With over 20 scientists and technicians the program has a large portfolio of projects operating at a local, national and international level. The institute itself has received large infrastructure investments in recent years and has continued to grow in size and reputation since its establishment. IMAS have a number of aquaculture industry partnerships where they work closely with organisations to continuously improve sustainability, resilience and food and bio security capabilities. CSIRO (Commonwealth Scientific and Industrial Research Organisation) has a national focus providing scientific knowledge and tools to support commercial development of Australia’s marine resources and industry to improve productivity and sustainability. The Tasmanian sites for this organisation focus both on marine and agricultural research. Through its Marine and Atmospheric Research Division (CMAR) CSIRO aims to advance Australian climate, marine, and earth systems science. The division’s headquarters are located in Hobart, Tasmania. In the aquaculture field CMAR investigates genetics, nutrition and production. The research is undertaken with commercial partners and fosters the development of quality products from healthy, genetically-superior animals raised on efficient, sustainable feeds. There is a specific focus on atlantic salmon, pacific oysters, abalone, barramundi and prawns.</td>
<td></td>
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</tr>
</tbody>
</table>
Aquaculture

Aquaculture is among the fastest-growing food production sectors in the world and is expected to become an increasingly important source of the global fish supply.

Tasmania is internationally recognised for its top quality aquaculture and wild fisheries products. Species that are commercially farmed in Tasmania include abalone, atlantic salmon, blue mussels, ocean trout, pacific oysters and seahorses.

Wild fisheries include abalone, rock lobster, scallops, giant crab, a wide variety of scalefish, shellfish, seaweed, bull kelp, sea urchin and undaria.

The Tasmanian seafood sector is the most valuable seafood industry in Australia. Aquaculture, principally salmonids and edible oysters accounts for approximately 80 per cent of the value of Tasmanian seafood, which amounts to 56 per cent of Australia’s aquaculture industry.

Tasmania has the world’s largest sustainable wild abalone fishery, accounting for around 35 per cent of the annual global yield.

Consumers, especially those buying higher-value products, are increasingly focused on quality, provenance, environmental sustainability and ethical production practices.

Tasmania is highly regarded for its ability to provide high-quality products that meet all of these consumer requirements.

Aquaculture in Tasmania snapshot

<table>
<thead>
<tr>
<th>Product</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlantic Salmon</td>
<td>$739 Million</td>
</tr>
<tr>
<td>Rock Lobster</td>
<td>$85 Million</td>
</tr>
<tr>
<td>Abalone</td>
<td>$97 Million</td>
</tr>
<tr>
<td>Wild Fisheries</td>
<td>$176 Million</td>
</tr>
</tbody>
</table>

The seafood industry depends on reliable and accurate information for its longevity and sustainability. Researchers at the University of Tasmania’s Institute for Marine and Antarctic Studies (IMAS) strive to ensure sustainable and ethical practices in all aspects of the seafood industry. There are numerous key partnerships and projects that foster the links between IMAS and industry.

The ARC research hub for commercial development of rock lobster culture systems has worked for over 15 years developing cutting edge apparatus and breeding methods. ARC’s commitment and ground-breaking work is bringing commercial farming of rock lobsters to life.

In partnership with Huon Aquaculture, Skretting and the Tasmanian and Australian Governments, the Experimental Aquaculture Facility (EAF) was opened in October 2015. Located at IMAS’s Taroona fisheries and aquaculture research centre, the EAF is the first of its kind in the Southern Hemisphere. It features a number of recirculation aquaculture tanks and systems.

A modern EAF for directed, commercially-relevant research, is fundamental to ensure the economic and environmental sustainability of these important industries for Tasmania, Australia and internationally – now and into the future.
Renewable Energy

An Overview

Tasmania has been a forerunner in the development of renewable energy for more than 100 years, commencing with the opening of the Waddamana Hydro-electric power station in 1915. Tasmania’s hydro-electric power scheme was carved out of the state’s harsh interior, by ordinary people working in extraordinary conditions. Construction work in the early years was difficult and dangerous, requiring great resilience, innovation and a strong pioneering spirit.

That tenacity has seen Tasmania continue to remain Australia’s leader in renewable energy. Years of experience have helped Tasmania to develop an unmatched level of renewable energy skill and expertise among our engineers and technicians.

Over 92 per cent of Tasmania’s energy is derived on-island from clean, renewable sources such as hydro and wind energy and our economy is driven by the principles of sustainability and environmental responsibility. Tasmania will be completely self-sufficient in renewable energy by 2022.

Tasmania has the lowest per capita greenhouse gas emissions in Australia. Our sustainable energy network complements our natural environment. We also offer a secure energy supply with the Basslink connection to the Australian electricity market and a natural gas pipeline to the Australian gas market. Hydro Tasmania is arguably Australia’s leading renewable energy business.

Renewable Energy Generation in Tasmania

The potential for expansion in renewable energy is huge and we are striving to become a more significant exporter with an even greater focus on innovation. Tasmania has diverse and rich renewable energy assets that are still largely untapped. These assets include wind power, bio-energy, geothermal energy and marine energy. The Government is committed to further on-island renewable energy development to ensure our energy system is secure, reliable, affordable and has low emissions.

Looking to the future, Tasmania’s reliable, fast response and emissions-free hydro generation along with our emissions-free wind generation places Tasmania in an extraordinary position to take advantage of opportunities as the world transitions to a low-emissions future.

Abundant water and wind, as well as a long history of generating renewable power, also provide Tasmania with research advantages for studying renewable energy and its potential uses. Micro-grids, such as King Island’s electricity grid, are excellent test sites for integrating multiple electricity generation sources.

Tasmania has a number of state-owned energy businesses including; TasNetworks, Aurora and Hydro Tasmania. Working closely together along with the state government and the University of Tasmania they continue to drive innovation and maintain Tasmania’s position as the renewable energy leaders of the nation. Because of the opportunities - private investors are knocking on our door. Tasmania’s brand as the renewable energy powerhouse of Australia is well understood with natural wind and water resources ready for development. A key point of focus in the future of energy in Tasmania is innovation that has a positive influence on consumer usage.

Examples of such include the world-leading hybrid off-grid power systems on the Bass Strait Islands of King and Flinders. Recently, TasNetworks won the Clean Energy Council Award for Business Community Engagement and the Energy Networks Australia Innovation Award with their CONSORT Bruny Island Battery Trial. Bruny Island was chosen for the trial because of the nature of the electricity network on the island, the regular demand peaks that occur during holiday periods and because a deployment of batteries of this size can make a real and measurable difference. Bruny Island has presented a fantastic opportunity to ‘teach’ the rest of Australia (and beyond) how batteries could be put to their best use in future.
The Future of Energy

Tasmania, blessed with outstanding natural wind resources from the Roaring Forties – making our wind consistent, reliable and high quality, has some of the best low-cost wind resources in the nation.

Prime Minister Morrison recently noted, Tasmania can deliver plenty of reliable, dispatchable power with our ‘Battery of the Nation’ energy solutions. Our wind and hydro represent a formidable combination of low cost and reliability.

The Government and Hydro Tasmania’s proposed ‘Battery of the Nation’ initiative will further boost our hydropower, wind, pumped hydro energy storage and interconnection with the mainland to provide more clean, reliable and cost-competitive energy as Australia transitions to a reliable, efficient low-emissions future.

Cattle Hill wind farm in the Central Highlands, and the Granville Harbour wind farm on the West Coast are set to move Tasmania to 100% renewable energy. Combined these two wind farms will contribute approximately 260 additional megawatts (MW) of capacity – this will increase our wind generation capacity by over 80 per cent. These projects are set to become operational by 2020.

When you add in Tasmania’s 14 potential hydro storage developments and the plans to modernise existing hydro infrastructure - such as the $5 million joint federal and state government feasibility project into upgrading Tarraleah Power Station, (a $500 million initiative to double its capacity) – energy can create a massive wave in economic investment for the state.
For any additional information regarding the Expression of Interest please contact:

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