

ANNUAL REPORT 2019-2020



Australian Government
Department of Industry, Science,
Energy and Resources

Business
Cooperative Research
Centres Program

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About the Blue Economy CRC

The purpose of the Blue Economy CRC is to undertake world class, collaborative, industry focused research and training to underpin the growth of Australia's Blue Economy through increased offshore sustainable seafood and renewable energy production.

The Blue Economy CRC-Co Ltd (ABN 64 634 684 549) is an independent not-for-profit company limited by guarantee and is a Cooperative Research Centre under the Australian Government's CRC Program.



KEY FACTS Year in review

40 
PARTICIPANTS FROM 10 COUNTRIES


10 YEARS FUNDING

 **4 STAFF EMPLOYED**

5 RESEARCH PROGRAMS

9 PROJECTS UNDER REVIEW 

5 MILESTONES ACHIEVED 

18 PROJECTS UNDERWAY 



Blue Economy CRC's Participants



Chair's Report

Greg Johannes - Chair, Blue Economy CRC



In hindsight, our work in 2019/2020 really proceeded in two phases.

The first phase was the administrative establishment phase, when the Board and our interim management team focused on getting our core corporate, governance and administrative processes in place.

Agreements were developed and signed, recruitment was completed, committees were formed and policies were written. Along the way we faced the challenge of turning the Blue Economy CRC bid, its original participants and their expectations into a funded well-governed organisation with a clear focus on delivering on our commitments.

The Blue Economy CRC invested a great deal of time and effort in doing this first phase well, accepting that it wouldn't translate immediately into research outcomes. We understood this was essential to set the company up properly for long-term success.

The second phase was the research initiation phase. The Blue Economy CRC kicked off a series of scoping projects, secured access to important research infrastructure and engaged deeply with its participants to understand their objectives and priorities.

This phase continues and has been made particularly challenging by the advent of COVID-19. The pandemic impacted hugely on our participants and on our ability to conduct research the 'traditional' way. It has forced us to be innovative very early in our life.

I've had the privilege of chairing the Board in its first year, a group of directors with a clear focus on good outcomes and good governance. As we've worked with the interim and now permanent management teams, our collective efforts have concentrated on ensuring our work is industry focused, responsive to our participants' needs, characterised by transparency and underpinned by a commitment to achieving excellence within a supportive work environment.

To help ensure we remain directly engaged with our participants, each Board member has taken responsibility for a different group, reaching out to them to both learn from them and open up a line of direct communication. We will continue to do this.

As we head into the new financial year, I want to acknowledge the amazing work and focus of my fellow directors and our interim and permanent management teams. They have all put their shoulders to the wheel with both good humour and enthusiasm, discussing and resolving challenging issues while never losing sight of the opportunity at hand.

I also want to thank the University of Tasmania for providing so much support to us through our establishment phase with staff and other resources, and the Australian Government for its ongoing investment in our research program.

This CRC's focus remains clear. Our role is to perform world class, collaborative, industry focussed research that underpins the growth of Australia's Blue Economy through increased offshore sustainable seafood production and renewable energy. We will do that for and with our partners in an environment of change, making a direct contribution to Australia's sustainable economic future.

Chief Executive Officer's Report

Dr John Whittington - CEO, Blue Economy CRC



Following the announcement of Australian Government support, the Blue Economy CRC officially commenced operations in July 2019.

Establishing the Blue Economy CRC as a new organisation with 40 industry, government, and research participants from ten countries with expertise in maritime engineering, aquaculture, renewable energy, environmental management and policy and planning has been a major achievement.

Despite the complications and restrictions resulting from COVID-19, the Blue Economy CRC has experienced an exciting first year of operation. We have executed a CRC Grant Agreement with the Australian Government and a Participants Agreement with our 40 Participants, established sound governance arrangements through the Board and its committees, held a successful Participant's workshop, recruited a small team to support the administrative aspects of the Blue Economy CRC and developed Connect to communicate with our Participants and our website for stakeholders more generally.

Most importantly we have commenced our research operations with the establishment of five research programs: Offshore Engineering and Technology, Seafood and Marine Products, Offshore Renewable Energy Systems, Environment & Ecosystems, and Sustainable Offshore Developments. Under the direction of the Blue Economy CRC's Research Director Professor Irene Penesis we have a dedicated Research Executive to lead these programs. We have developed a multi-site access agreement to enable the Blue Economy CRC to undertake research on offshore marine farming leases.

We have commissioned 17 Scoping Projects, due for completion in late 2020, which will be developed into an electronic, publicly available, knowledge platform. All our Participants have been engaged with these Projects and with travel and meetings impacted by COVID-19, the project teams have made extensive use of digital platforms to collaborate. The knowledge platform will bring together industry practice and research knowledge and will be used to drive the direction of the Blue Economy CRC's research investment. We have also approved for commissioning a range of strategic industry focused research projects on renewable energy, fish pen infrastructure, environmental monitoring and economic policy and regulatory governance. The first of these is underway.

The Blue Economy CRC's Board, chaired by Greg Johannes and comprised of 5 independent Directors, has been instrumental in ensuring a successful first 12 months and in developing a strong governance and strategic foundation for the decade ahead. I would like to thank them for their guidance and tireless work. I would also like to thank Dr Darren Cundy, the Interim Chief Executive and Jon Brown, Business Manager, for their important contribution in establishing the company and developing its policies and procedures; Professor Irene Penesis, Research Director for providing leadership and guidance to the research program and research executive team; and the University of Tasmania for providing accommodation and support services to the Blue Economy CRC.

I sincerely thank our Participants for their support and patience through this 'start up' phase, particularly with the added complication of navigating COVID-19. I look forward to working with you in the years ahead.

I commend this inaugural Annual Report to you as a formal record of the Blue Economy CRC's establishment year and as a platform for the decade ahead as we grow the capacity of the aquaculture and renewable energy industries to move offshore.

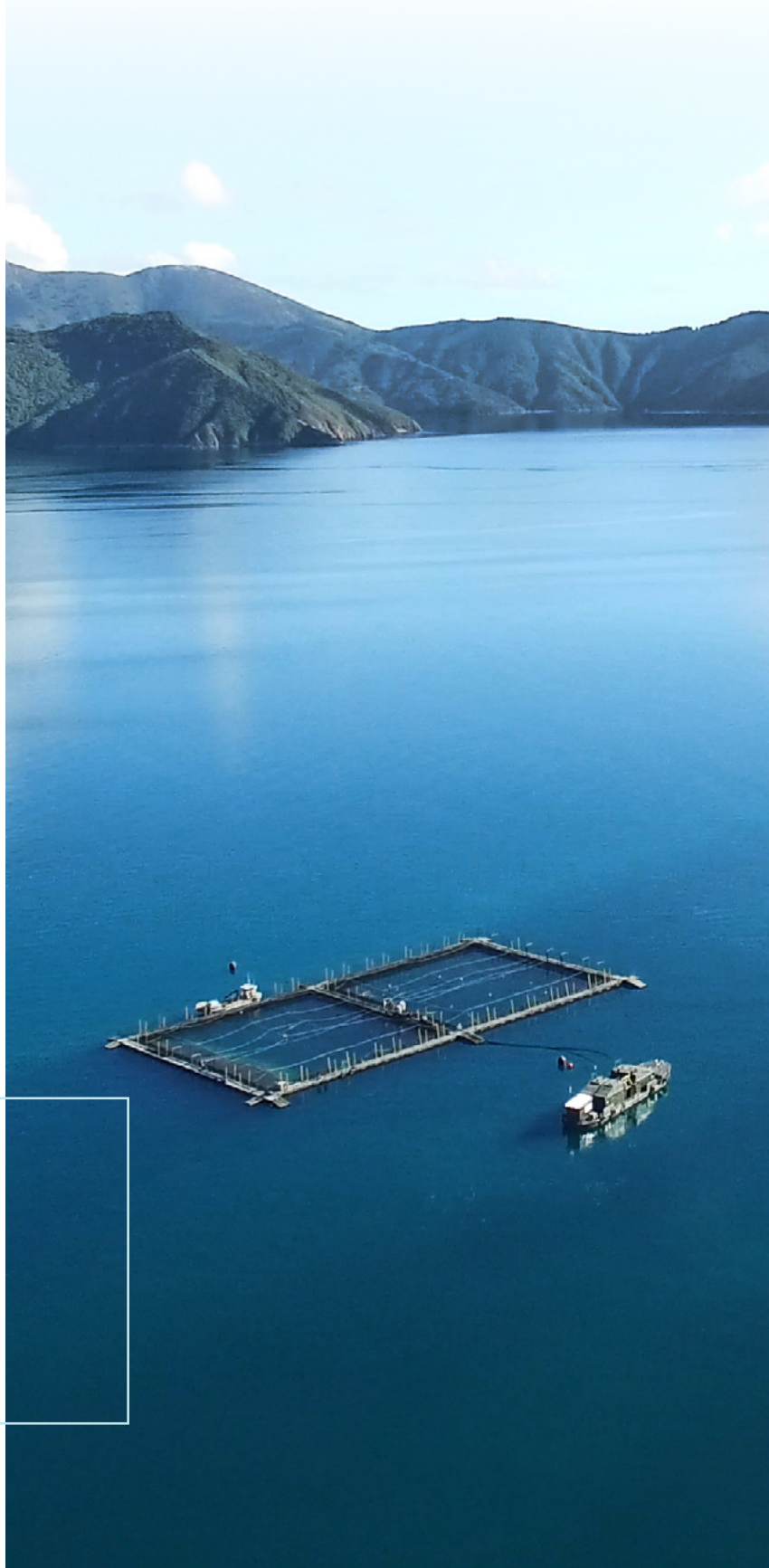
Executive Summary

The opportunities to grow the blue economy are vast. Australia, with the World's third largest Exclusive Economic Zone and New Zealand, have enormous potential to use their oceans sustainably to increase seafood and renewable energy production. Realising this potential requires moving offshore into new and more exposed high-energy operating environments requiring new production systems that can withstand both regular and extreme weather events, while being safely and economically managed. It requires new planning, regulatory and monitoring systems to encourage and support sustainable capital-intensive operations. The Blue Economy CRC has established its research programs to address these challenges in an integrated way.

This first year has seen the establishment of the company, entering into a formal agreement with 40 of the organisations that were part of the Blue Economy CRC funding bid, establishing the Blue Economy's governance and organisational structures and developing the first round of research projects.

The first year's achievements of the Blue Economy CRC are outlined below, as well as a summary of the risks and impediments that emerged and are being addressed.

The opportunities to grow the blue economy are vast.





ACHIEVEMENTS

The Blue Economy CRC achievements during FY20 include:

- △ Company registered as a not-for-profit and granted charitable status by the Charities and Not-for-Profit Commission.
- △ Board appointed with 5 independent Directors and three core committees established: Participants Advisory Committee; Scientific Advisory Committee; and Finance, Audit and Risk Management Committee.
- △ 10 Board meetings held in either Hobart or Launceston in Tasmania and following the onset of COVID-19 restrictions, via videoconference.
- △ Executive team appointed including CEO, Research Director, and Business Manager/ Company Secretary.
- △ Implemented core systems and processes to operationalise the Blue Economy CRC, including Turnkey CRC.
- △ Developed key policies and procedures, including Blue Economy CRC Data Management Framework; Blue Economy CRC Intellectual Property Framework; and Privacy Policy.
- △ Developed corporate policies, including Delegations of Authority, Financial Delegations Policy, Declaration of Interests Policy, Travel Policy, Code of Conduct, COVID-19 Safe Working Plan and Blue Economy CRC Brand Guidelines.
- △ Developed and applied a rigorous process for developing and commissioning research projects.
- △ The Blue Economy CRC held its official launch at its headquarters on the University of Tasmania Launceston campus on 28 January 2020. Opened by Senator Duniam, the launch was attended by approximately 80 people including many of the Blue Economy CRC's domestic and international Participants.
- △ Following on from the launch, the Blue Economy CRC held its inaugural Participant workshop from 29-31 January 2020 in Hobart Tasmania. The workshop was attended by over 170 people from our participating organisations. The workshop was followed by industry site visits, including to aquaculture farms near and off-shore, remote feeding aquaculture centres and specialist research facilities.
- △ Established five research programs: Offshore Engineering and Technology, Seafood and Marine Products, Offshore Renewable Energy Systems, Environment & Ecosystems, and Sustainable Offshore Developments.
- △ Appointed a Research Executive comprised of five Program Leaders and seven Deputies to oversee the Research program.
- △ Executed 17 Scoping Project Agreements April/May 2020 (see media release <https://blueeconomycrc.com.au/crc-announce-commissioning-of-17-scoping-projects/>). These scoping projects are valued at \$2.3M with the BECRC cash contribution of \$858k. See link to active projects <https://blueeconomycrc.com.au/projects/>. Final reports from these scoping projects are due 30 Nov 2020, and synthesis of these will follow. These reports will be made openly available via the Blue Economy CRC Project website.
- △ Approved 9 General (investment) Projects and an additional Scoping Study in June 2020. These projects are valued at \$14.6M with the BECRC cash contribution of \$6M. The first General Project is fully executed and underway (see media release <https://blueeconomycrc.com.au/uq-tassal-project/>).
- △ Implemented a Multi-Site Access Agreement to enable research on offshore marine farming leases for aquaculture and renewable energy research.
- △ Developed a Blue Economy CRC website.
- △ Developed the online collaborative platform 'Connect', for creation and sharing of key documentation and for ongoing communications amongst Participants.
- △ Commenced regular communication with our Partners and broader stakeholders through Connect, the website, regular newsletters and frequent emails.

Risks and Impediments

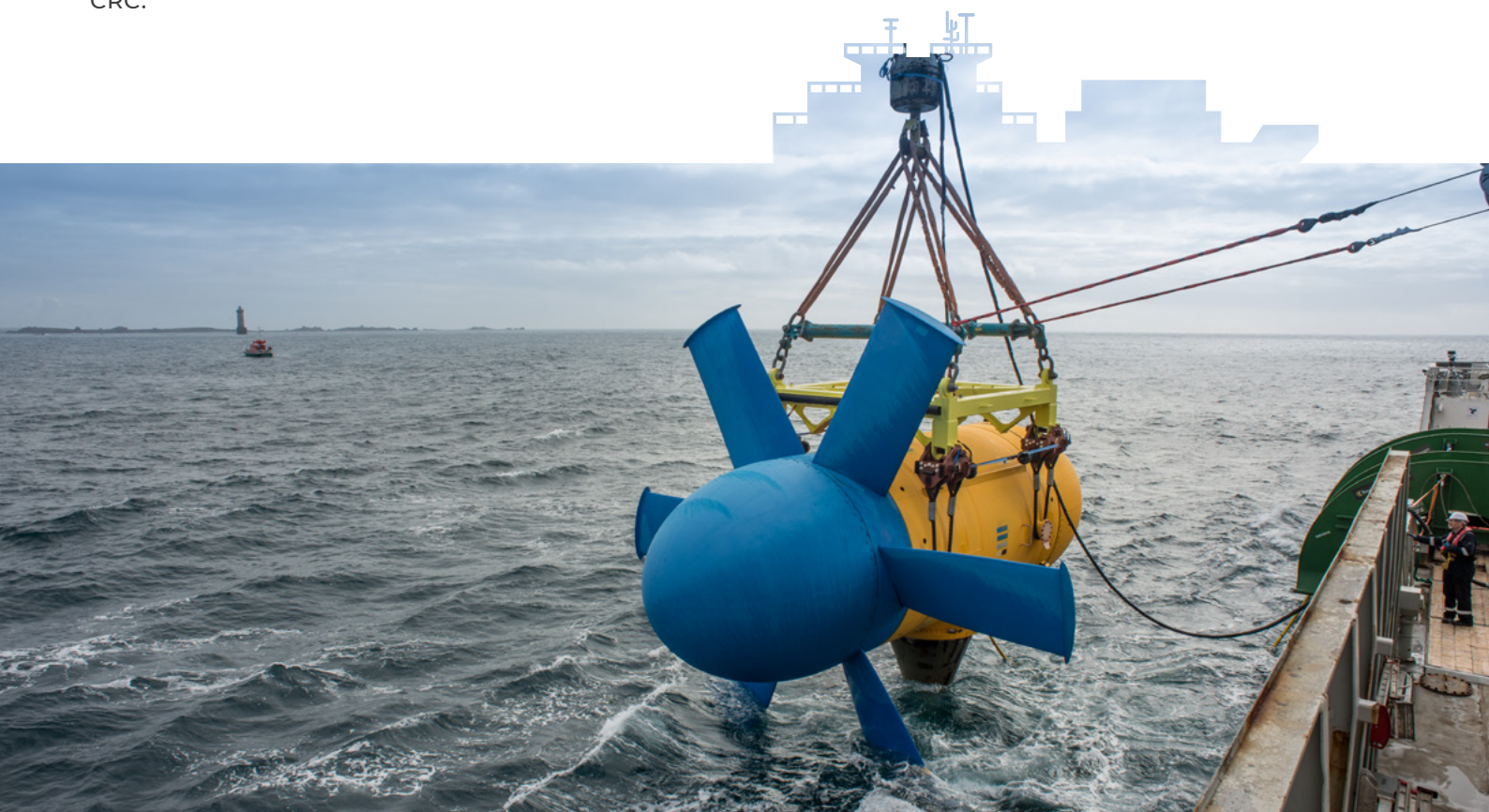
The Finance Audit and Risk Management Committee (FARM) has been established to provide advice to the Board on matters related to financial management and performance, risk management and audit. The FARM is comprised of two Directors (one of whom is the Chair) and an independent member with expertise in risk and audit.

In establishing the organisation the Board and FARM have prioritised the development of policies and procedures relating to data management, IP, finances, delegations, and travel. These policies now inform the everyday management of the Blue Economy CRC.

A significant risk emerged during the establishment of the Blue Economy CRC when the Participants Agreement was being finalised. Several potential Participants chose to not participate in the Blue Economy CRC and several other Participants chose to reduce their level of contribution from that committed during the bid process. The net effect of these withdrawals and lowered contributions was to reduce the total aggregate contributions, inclusive of the Australian Government grant, from \$329 million to \$227 million over the 10-year life of the Blue Economy CRC.

The Blue Economy CRC immediately sought to mitigate this risk by communicating openly with the CRC Program Office and other Participants and recasting Blue Economy CRC expenditure to meet new forecast revenue. The Blue Economy CRC is committed to attracting additional investment to meet the shortfall over the life of the Blue Economy CRC in order to obtain the Commonwealth's full funding. The Blue Economy CRC has worked with the CRC Program office to reprofile the timing of revenue to match this commitment and the intention is that this will be reflected in an amended CRC Grant Agreement.

An additional risk emerged during March 2020, when the first Participant contributions coincided with the start of the COVID-19 pandemic, severely impacting some Participants ability to meet their financial obligations. The Blue Economy CRC has worked with these Participants to defer their contributions for up to a year and then review their payment schedule. The total of Participant contributions deferred is \$653,750, which represents less than 10% of the Blue Economy CRC budgeted revenue.



Performance Against Activities

Professor Irene Penesis - Research Director,
Blue Economy CRC



RESEARCH

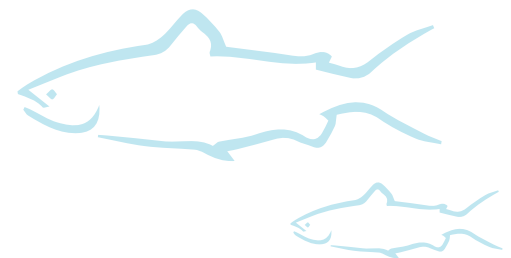
To achieve its purpose the Blue Economy CRC's activities are focused around five interconnected Research Programs developed through iterative dialogue with industry and other Participants.

Given the interdisciplinary nature of the Blue Economy CRC, five Program Leaders and seven Deputy Program Leaders were appointed. Together with the Research Director they form the Research Executive. The Program Leaders engage regularly with our Participants, and are responsible for development, monitoring and reporting on projects within their Research Program through all phases of the project lifecycle. They also establish and manage engagement with external stakeholders, key Government departments and other international experts working in blue economy related areas, to guide future research directions and promote the Blue Economy CRC's activities at an international level. The Deputy Program Leaders act as Liaison Officers for their research programs, to support the development of research linkages and cross program engagement and awareness. The Research Executive is supported by the appointment of the Research Executive Officer.

We have developed and implemented the Blue Economy CRC's Collaborative Platform 'Connect' – a portal for proposal submissions, help files, policies and guidelines for participants – undertaken with the developers of TurnKeyCRC. By end of 2019-2020, the Blue Economy CRC had 350 active Users (members) from participant organisations. The 'Connect' platform supports open cooperation and collaboration amongst our Participants.

In the first year, we have made progress towards reaching our research objectives. The first call for project submissions, together with the assessment criteria to be applied to these, was released. With the undertaking of two industry-focus participant workshops in November 2019 and January 2020, seventeen Scoping Projects and one General Project were commenced by the end of the reporting period, with a further nine General Projects considered by the Blue Economy CRC's Scientific Advisory Committee for funding. These were expertly guided and developed collaboratively with Participants by the Research Executive.

The six-month duration Scoping Projects were initiated to help the Blue Economy CRC develop a clear understanding of current technologies, solutions, knowledge and trends, and identify the major challenges and opportunities that need to be addressed by the Blue Economy CRC's research agenda. These projects have helped solidify collaborative relationships between and across researchers and end users within the CRC, to ensure that our industry partner's needs and challenges have been captured.



The 17 short-term Scoping Projects will address knowledge gaps in areas such as:

- △ Key challenges for offshore high-energy salmon and kelp aquaculture production.
- △ Integrated offshore aquaculture and renewable energy infrastructure, mooring and vessel designs.
- △ Marine energy conversion technologies suited to offshore conditions that support energy export (such as hydrogen) and storage, as well as aquaculture applications.
- △ Understanding the operational and energy requirements of offshore aquaculture systems.
- △ Robust site selection procedures, and environmental and operational monitoring strategies including the application of remote and autonomous monitoring technologies.
- △ Decision support tools for identifying trade-offs and synergies among emerging industries in the blue economy and other ocean users.
- △ Economic assessment frameworks for the blue economy.
- △ Ethical, policy and regulatory frameworks for Australia’s emerging blue economy and systems for their integration.

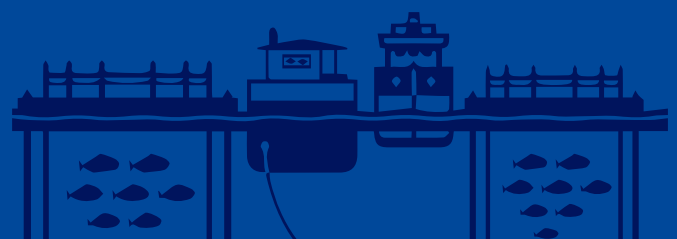
The Scoping Projects will be completed in late 2020 and form part of the CRC’s foundational knowledge platform. The knowledge platform’s contemporary information will be used to drive the direction of the Blue Economy CRC’s ongoing research investment and inform the delivery of our milestones, across the five integrated research programs.

Due to the challenges with COVID-19, the deadline for the final reports for Scoping Projects was extended to accommodate changing work environments. In addition, advice and mechanisms of support have been provided to Participants regarding hosting stakeholder engagement activities.

The Blue Economy CRC’s first General Project commenced involving Tassal Group and the University of Queensland. The 36-month duration project will develop a new, robust collar tie to improve the mechanism for attaching fish farming nets to floating cages. The prototype will be tested at Tassal Group’s high-energy and exposed field site in Tasmania (where it currently farms salmon) and then refined to develop a commercially viable product ready for manufacture. This research is facilitated by the development of the Multi-Site Access Agreement with Tassal Group.

The ratio of participant in-kind contributions to Blue Economy CRC cash committed to the seventeen Scoping Projects and one General averaged at 4.0. Several third parties are also engaging with the Blue Economy CRC’s Scoping Projects contributing in-kind resources, including Australian Abalone Growers Association, Australian Seaweed Institute, BOC Australia, Marinova Pty Ltd, and the Universidad de los Lagos (Chile). This is a testament to the leadership and direction provided by the Research Executive and the high levels of engagement between our industry, Government, and research Participants.

With its Participants, the Blue Economy CRC is developing a hydrogen microgrid to kick-start its ‘green hydrogen’ projects from offshore renewable generation sources, potentially leasing a commercial scale hydrogen electrolyser, capstone turbine and microgrid, to be operational in mid-2021. This infrastructure will lead to the development of a marinised energy carrier and the reduction of diesel usage and emissions from offshore operations including maritime transportation, and offtake agreements for the hydrogen produced.



In addition, the Blue Economy CRC has provided two written submissions in response to the Australian Government’s proposed Offshore Clean Energy Infrastructure Regulatory Framework (Jan 2020) and Technology Investment Roadmap Discussion Paper: A framework to accelerate low emissions technologies (May 2020).

The proposed Offshore Clean Energy Infrastructure Regulatory Framework will enable the exploration, construction, operation and decommissioning of offshore wind and other clean energy technologies and associated infrastructure in Commonwealth waters (beyond three nautical miles from the coast).

The Blue Economy CRC’s research agenda centres on the development of integrated assessments of offshore renewable energy in relation to aquaculture production, and hence will be directed, and help inform, the ongoing development of the Framework.

The Blue Economy CRC is well placed to support the focus of Australia’s Technology Investment Roadmap to drive investment in low emission technologies to strengthen the economy and support jobs and businesses.

The Blue Economy CRC’s research program has been developed through an iterative dialogue with industry and government to ensure it is focused on the challenges faced by industries in achieving scale and commercial success in the offshore environment. Key activities are focused around five integrated user-defined research programs developed through iterative dialogue with industry:



Program 1: Offshore Engineering and Technology	Program 2: Seafood and Marine Products	Program 3: Offshore Renewable Energy Systems	Program 4: Environment and Ecosystems	Program 5: Sustainable Offshore Developments
Provides engineering solutions that create healthy aquaculture growing conditions that use the latest technologies for construction, installation, automation, monitoring and maintenance of offshore infrastructure.	Developing innovative aquaculture systems to provide solutions in animal and plant husbandry and feed design.	Developing and testing marine renewable devices suited to offshore conditions that support energy export and storage to support aquaculture and other sectors, remote islands and communities and on-grid generation.	Delivering innovative solutions for modelling and monitoring to understand the environmental impacts of new offshore developments.	Creating new ‘fit for purpose’ policies, regulatory instruments and sustainable business development and commercialisation models.

RESEARCH PROGRAM 1

Offshore Engineering and Technology

The Offshore Engineering and Technology program will generate the infrastructure that supports the development of offshore systems. It brings together industrial engineering expertise to collaborate with the aquaculture and offshore renewable energy sectors to build the required infrastructure for integrated offshore operations. Intellectual Property will emerge in the design of sea-pen infrastructure, support systems for operating (e.g. anchoring devices), innovative maintenance technologies (e.g. anti-corrosive or antifouling devices), and monitoring (e.g. advanced materials for longevity and structural reliability; in-built sensors in composite materials to detect fatigue in offshore platforms). Commercial prototypes will be developed for monitoring and maintenance using robotics, artificial intelligence, integrated sensors and real-time visualisation.

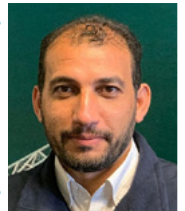
PROGRAM LEADER

Professor Chien Ming Wang
University of Queensland



DEPUTY PROGRAM LEADER

Dr Nagi Abdussamie
Australian Maritime College,
University of Tasmania



OFFSHORE ENGINEERING & TECHNOLOGY



Key focus on the delivery of innovative engineered solutions that facilitate offshore development in the blue economy.

THE FACTS
LIMITED CAPACITY
TO SUSTAINABLY INCREASE WILD CAPTURE FISHERIES

AQUACULTURE WILL BE AN INCREASINGLY IMPORTANT SUPPLIER OF SUSTAINABLY PRODUCED HIGH QUALITY PROTEIN FOR THE WORLD

OFFSHORE MARINE AQUACULTURE OFFERS GREAT POTENTIAL FOR GROWTH

AQUACULTURE CAN EXPAND WITH A MINIMAL ENVIRONMENTAL FOOTPRINT IN OFFSHORE WATERS

THERE ARE **COMMUNITY CONCERNS** OVER THE GROWTH OF AQUACULTURE IN **NEARSHORE COASTAL WATERS**

LARGE FISH FARM OPERATORS PLAN TO FARM AT OFFSHORE SITES TO IMPROVE BIOSECURITY AND FISH HEALTH AND **FOR ACCESS TO GREATER SEA SPACE**

MOVING FURTHER OFFSHORE WILL REQUIRE ROBUST FISH PENS THAT CAN SURVIVE AND BE OPERATED REMOTELY DURING ROUGH CONDITIONS

MARKET OPPORTUNITIES

Coastal aquaculture is a \$1.4 billion dollar industry in Australia, predominantly salmon and tuna farms in Tasmania and South Australia.

Almost 90% of Australia's tuna production is exported, mostly to the Japanese sashimi market and the United States of America.

Offshore aquaculture has a low environmental impact compared with other forms of protein production.

AREAS OF RESEARCH FOCUS

- » Develop the next generation in offshore aquaculture systems.
- » Development of modular system of floating platforms.
- » A multi-use platform that combines renewable energy systems, aquaculture, remote technologies and maritime industries.
- » Remote Operation in a high energy environment.

EXPECTED OUTCOMES

Engineered solutions that use the latest technologies for construction, installation, automation, monitoring and maintenance of offshore infrastructure.

- 1 Designs for new cost-effective and environmentally sensitive pens and station keeping systems that minimise environmental footprint.
- 2 Configurable platform designs for optimal production suited to all Australian conditions.
- 3 An installed offshore co-located aquaculture farm and renewable energy generation system.
- 4 Autonomous air, surface and underwater systems to reduce high risk practices in offshore aquaculture.

RESEARCH PROGRAM 2

Seafood and Marine Products

The Seafood and Marine Products program will develop offshore aquaculture systems that provide viable and sustainable growth opportunities for this sector. Commercialisation opportunities include novel aquaculture system designs for emerging species in collaboration with offshore engineering program, and new seafood products, as well as the development of supply chain aquaculture activities (e.g. platform-based hatcheries and processing). Identification and development of premium export products and new export markets will ensure the expectations of consumers are met.

PROGRAM LEADER

Professor Chris Carter

Institute of Marine and Antarctic Studies,
University of Tasmania



DEPUTY PROGRAM LEADER

Professor Lindsey White

Auckland University
of Technology



SEAFOOD & MARINE PRODUCTS

AUSTRALIA can be a major producer of high-quality seafood and marine products



THE FACTS
AUSTRALIA'S EXCLUSIVE ECONOMIC ZONE (EEZ)
3RD LARGEST IN THE WORLD

TROPICAL AND SUBTROPICAL WATERS
=
POTENTIAL TO GROW A WIDE VARIETY OF MARINE SPECIES



AUSTRALIA IS ADJACENT TO THE WORLD'S LARGEST SEAFOOD MARKET WHERE DEMAND FOR HIGH QUALITY SEAFOOD IS RAPIDLY GROWING
AUSTRALIA IS RECOGNISED AS A PRODUCER OF HIGH QUALITY, SAFE AND SUSTAINABLE SEAFOOD



AUSTRALIA IMPORTS **72%** OF SEAFOOD PRODUCT
AUSTRALIA'S GROSS VALUE OF AQUACULTURE PRODUCTION IN 2018 WAS \$1.42 BILLION

SEAFOOD IS A FAST GROWING FOOD SECTOR, WITH AQUACULTURE RESPONSIBLE FOR THIS NEW GROWTH
PROJECTED GROSS VALUE OF AUSTRALIAN AQUACULTURE PRODUCTION TO BE \$2 BILLION A YEAR BY 2027



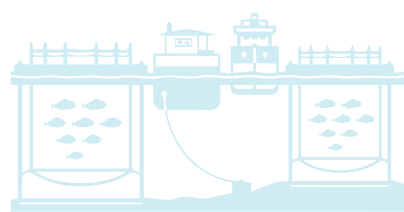
OFFSHORE AQUACULTURE



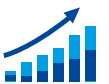
- Expansion is limited in coastal areas due to limited space and community concerns.
- Offers the opportunity to develop industries and jobs to meet the demand for high quality domestic and export seafood.
- Requires innovation in engineering, technology, production techniques, supply chain logistics and farm management.

AREAS OF RESEARCH FOCUS

- » Healthy, safe and sustainable seafood
- » Innovative and integrated offshore culture systems
- » Diversification of seafood and marine products and markets



EXPECTED OUTCOMES



- Innovative aquaculture systems to provide solutions in animal and plant husbandry, as well as feed design and delivery.
- » Develop offshore aquaculture systems that provide viable and sustainable growth opportunities.
- » Commercialisation opportunities include novel aquaculture system designs for emerging species, new seafood products, and the development of supply chain aquaculture activities.
- » Identification and development of premium export products and new export markets will ensure the expectations of high end-users are met.



RESEARCH PROGRAM 3

Offshore Renewable Energy Systems

The Offshore Renewable Energy Systems (ORES) program will support offshore aquaculture through supplies of lower cost energy and ancillary products (oxygen and freshwater) and through the development of exportable energy carriers (e.g. hydrogen). Commercialisation opportunities include the design and development of renewable energy conversion devices; optimal offshore storage solutions and export products; and micro-grid architecture solutions and control systems for intelligent management of integrated end-user demands. The ORES program will also focus on the production of essential resources such as freshwater (via desalination) and oxygen (for hatchery and fish culture).

PROGRAM LEADER

Dr Mark Hemer
CSIRO



DEPUTY PROGRAM LEADER

Professor Evan Gray
Griffith University



OFFSHORE RENEWABLE ENERGY SYSTEMS



Australia possesses the strong supply chain of industry and research providers to play a key role in development of the emerging global offshore renewable energy industry.

THE FACTS
AUSTRALIA
IS SURROUNDED BY
OCEAN
THE LARGEST
UNTAPPED
RENEWABLE
ENERGY RESOURCE
ON THE PLANET

CONVERTING THE ENERGY OF THE OCEAN WILL UNLOCK UNPRECEDENTED OPPORTUNITY TO EXPAND THE BLUE ECONOMY, FOR AUSTRALIA AND THE WORLD.

AUSTRALIA'S OFFSHORE RENEWABLE ENERGY RESOURCES (SOLAR, WIND, WAVE, TIDAL) FAR EXCEED AUSTRALIA'S TOTAL ENERGY DEMAND, AND ARE MORE CONSISTENT, AND PREDICTABLE THAN THEIR TERRESTRIAL EQUIVALENTS.

GLOBAL INSTALLED OFFSHORE RENEWABLE ENERGY CAPACITY IS FORECAST TO REACH 1337GW BY 2050 (1000GW OFFSHORE WIND, IRENA 2019; 236GW WAVE, IEA-OES; 101GW TIDAL, IEA-OES).

OFFSHORE RENEWABLE GENERATION, INTEGRATED ENERGY STORAGE, AND SMART-GRID TECHNOLOGIES CAN MEET OFFSHORE INDUSTRY ENERGY DEMANDS.

INTEGRATED HYDROGEN WITHIN OFFSHORE MICRO-GRID ENABLES MANAGEMENT OF VARIABLE GENERATION AND DEMAND. EXCESS PRODUCTION OFFERS EXPORT OPPORTUNITY.

CO-PRODUCTS OXYGEN AND FRESHWATER HAVE OFFSHORE INDUSTRY APPLICATION.



MARKET OPPORTUNITIES



Australia is well positioned to deliver growth in offshore renewable energy systems in targeted global 'blue economy' markets through Asia and the Pacific.

Development of offshore renewable energy systems can contribute to necessary decarbonisation of Australia's offshore industry sector.

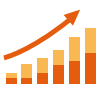
Construction, operations and maintenance requirements of an offshore renewable energy industry will create jobs and transition opportunity for other declining offshore industries.

AREAS OF RESEARCH FOCUS

- » Offshore energy availability and demand assessments
- » Optimising design, performance, survivability and cost of offshore renewable energy generation technologies
- » Development of energy management strategies for the offshore environment (storage solutions, grid management, intelligent and integrated application)



EXPECTED OUTCOMES



- Development and testing of marine energy conversion devices suited to offshore conditions that support energy export and storage, and that support aquaculture.
- » Support offshore aquaculture through supplies of lower cost energy and ancillary products.
- » Contribute to the cost of offshore infrastructure through the development of exportable energy carriers.
- » Design and development of renewable energy conversion devices; optimal offshore storage solutions and export products and micro-grid architecture solutions and control systems for intelligent management of integrated end-user demands.

RESEARCH PROGRAM 4

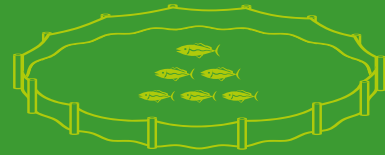
Environment and Ecosystems

The Environment and Ecosystems program will evaluate the environmental footprint of the infrastructure, culture systems and energy generating devices used by offshore industries. The program connects with the Sustainable Offshore Developments program to develop management systems to monitor environmental impact and interactions with other sectors, and with Offshore Engineering, Seafood and Renewable Energy programs to monitor the impacts of the offshore environment on the health, maintenance and performance of species, infrastructure and devices respectively. Novel monitoring systems will be developed, including models and user interfaces to deliver real time data and information for use by government, industry and the public.

<p>PROGRAM LEADER Dr Beth Fulton CSIRO</p>		<p>DEPUTY PROGRAM LEADER Professor Chris Frid Griffith University</p>		<p>DEPUTY PROGRAM LEADER Dr Remo Cossu University of Queensland</p>	
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ENVIRONMENT & ECOSYSTEMS



Developing ecologically friendly food and energy production systems that have minimal environmental footprints and provide ecosystem benefits.

THE FACTS WITH A RAPIDLY GROWING GLOBAL POPULATION **NEW LARGE PRODUCTION SYSTEMS ARE NEEDED**

THE OCEAN COVERS OVER **70%** OF THE EARTH'S SURFACE
INCREASED FOCUS ON DEVELOPING OCEANS BEYOND COASTAL ZONES TO MEET FOOD & RENEWABLE ENERGY NEEDS.

IT IS IMPERATIVE WE PLAN, UNDERSTAND & INVESTIGATE IMPACTS FROM CONCEPTION.

OFFSHORE DEVELOPMENT HAS THE POTENTIAL TO DEVELOP WITH **MINIMAL ENVIRONMENTAL IMPACTS AND COMBAT COASTAL DEGRADATION** AND CLIMATE CHANGE CHALLENGES.



THE GROWTH OF **AQUACULTURE AS A FOOD SECTOR** HOWEVER FACES **BARRIERS OF SUITABLE AVAILABLE SPACE**



OFFSHORE PLATFORMS WILL BE A **SIGNIFICANT INVESTMENT WITH CHALLENGES**. MULTIPLE INDUSTRIES WILL BENEFIT FROM SHARING PLATFORMS.

INFORMATION PLATFORMS WILL BE NEEDED TO **SYNTHESISE AND REPORT FROM MANY DATA STREAMS**.

WHEN PLACING ANY ITEM IN THE ENVIRONMENT THERE ARE **BIOSECURITY ISSUES**.



MARKET OPPORTUNITIES




-  Develop the knowledge and understanding of environmental impacts from offshore development.
-  Develop the tools to ensure offshore developments meet environmental guidelines including transparency and certification.
-  Become a market leader in sustainable and environmentally accredited production systems.
-  Identify opportunities in ecosystem service and climate mitigation.

AREAS OF RESEARCH FOCUS

- » Develop tools to ensure environmental impacts are monitored and managed.
- » Develop tools to predict and manage ongoing environmental health around offshore production systems.
- » Develop systems that incorporate climate mitigation and demonstrate global marine custodianship.



GAPS IN UNDERSTANDING

- 1** Where is best to place offshore platforms? 
- 2** What other benefits exist with new offshore platforms and infrastructure?
- 3** What impacts or risks are there? 
- 4** How can we avoid these? 



RESEARCH PROGRAM 5

Sustainable Offshore Developments

The Sustainable Offshore Developments program will profile, and advocate for, the regulatory frameworks that will provide confidence for aquaculture and renewable energy industry to invest, while also giving the public confidence that offshore developments operate to the highest environmental standards for sustainability and ecosystem integrity.

Strong linkages with the Environment and Ecosystems program in the design of appropriate monitoring and evaluation performance metrics, will support ongoing environmental assessment and health monitoring.

Collaboratively with the Seafood and Marine Products and Ocean Renewable Energy Systems programs, this program will evaluate the performance of different aquaculture and offshore renewable energy systems as well as the financial, environmental and societal benefits of co-location and integration of activities across different users and different sectors.

PROGRAM LEADER
Professor Marcus Haward
 Institute of Marine and Antarctic Studies,
 University of Tasmania



DEPUTY PROGRAM LEADER
Dr Leo Dutra
 CSIRO



DEPUTY PROGRAM LEADER
Associate Professor Ki-Hoon Lee
 Griffith University



SUSTAINABLE OFFSHORE DEVELOPMENTS



Research and development of safe, sustainable and appropriate development options of offshore industries and the governance regulatory requirements that will foster future investment and social acceptability to support the growth of new food and energy clusters in the offshore environment.

THE FACTS

AUSTRALIA HAS THE
THIRD LARGEST
 EXCLUSIVE ECONOMIC
 ZONE IN THE WORLD

OUR AREA OF
 MARITIME
 JURISDICTION IS
2 X AS LARGE
 AS THE
 CONTINENTAL
 LAND MASS

AUSTRALIA HAS SIGNIFICANT
 RESPONSIBILITIES FOR
 ENSURING SUSTAINABLE USE
 OF ITS MARITIME DOMAIN.



MOVING OFFSHORE WILL REQUIRE
 IMPROVED AND SUPPORTIVE PROCESSES
 FOR REGULATION AND MANAGEMENT OF
 BLUE ECONOMY ACTIVITIES.

AUSTRALIA WILL
 EXPECT OFFSHORE
 BLUE ECONOMY
 ACTIVITIES TO BE
 CONDUCTED AT THE
HIGHEST
 STANDARDS

MARKET OPPORTUNITIES

- Improved understanding of the scope and benefit of offshore blue economy activities.
- Improved efficiency, enhanced environmental performance of operations leading to strong community support.
- Australia as world leader of integrated offshore blue economy activities.

AREAS OF RESEARCH FOCUS

- » Evaluate appropriate management systems for new and emergent uses, including performance metrics, which meet community expectations and are tangible and measurable.
- » Design of appropriate monitoring and evaluation performance metrics for ongoing environmental assessment and health monitoring.
- » Evaluate the benefits of co-location and integration of activities across different users and sectors.

EXPECTED OUTCOMES

- Creation of new 'fit for purpose' policies, regulatory instruments and sustainable business development and commercialisation models, including tools for communication and stakeholder engagement.
- » Profile and advocate for the regulatory frameworks that will provide confidence for aquaculture and renewable energy industry to invest.
- » For the public to be confident that offshore developments operate to the highest environmental standards for sustainability and ecosystem integrity.





BLUE ECONOMY CRC PROJECTS 2019 - 2020



PROGRAM 1:

Offshore and Engineering and Technology Program

1.20.001 *Aquaculture Vessel Requirement Scoping Study*

Lead Organisation: BMT

Project Leader: Chris Shearer

Blue Economy CRC Participant Organisations involved: BE CRC, BMT, DNV GL Australia Pty Limited, SINTEF OCEAN AS, University of Tasmania.

Project dates: 6 months



1.20.002 *Autonomous Marine Systems at Offshore Aquaculture and Energy Sites*

Lead Organisation: Australian Maritime College, University of Tasmania

Project Leader: Damien Guihen

Blue Economy CRC Participant Organisations involved: University of Tasmania, Auckland University of Technology, Cawthron Institute, CSIRO, Griffith University, Tasmania Department of Primary Industries, Parks, Water and Environment, Tassal Group Limited, The University of Queensland, Xylem Water Solutions Australia Limited.

Project Duration: 6 months



1.20.003 *Biofouling Challenges and Possible Solutions*

Lead Organisation: The University of Queensland

Project Leader: Martin Veidt

Blue Economy CRC Participant Organisations involved: The University of Queensland, Advanced Composite Structures Australia Pty Ltd, Auckland University of Technology, Carnegie Clean Energy Limited, CSIRO, East China Sea Fisheries Research Institute, Chinese Academy of Fishery Sciences, Ghent University, Huon Aquaculture Company Pty Ltd, SINTEF OCEAN AS, Tassal Group Limited, University of Tasmania, Xylem Water Solutions Australia Limited.

Project Duration: 6 months



BLUE ECONOMY CRC PROJECTS 2019 - 2020

PROGRAM 1:

Offshore and Engineering and Technology Program

1.20.004 *Multi-Purpose Offshore/High Energy Platforms: Concepts and Applications*

Lead Organisation: Australian Maritime College, University of Tasmania

Project Leader: Nagi Abdussamie

Blue Economy CRC Participant Organisations involved: University of Tasmania, BMT, Cawthron Institute; CSIRO, DNV GL Australia Pty Limited, Griffith University, Macquarie University, National University of Singapore, The New Zealand Institute for Plant and Food Research Limited, The University of Queensland, University of Western Australia.

Project Duration: 6 months



1.20.005 *Review on Fish Pen Designs and Mooring Systems*

Lead Organisation: The University of Queensland

Project Leader: Chien Ming Wang

Blue Economy CRC Participant Organisations involved: The University of Queensland, Advanced Composite Structures Australia Pty Ltd, BMT, CSIRO, East China Sea Fisheries Research Institute, Chinese Academy of Fishery Sciences, Griffith University, Huon Aquaculture Company Pty Ltd, SINTEF OCEAN AS, Tassal Group Limited, The New Zealand King Salmon Pty Limited, Universidad Austral de Chile, University of Tasmania.

Project Duration: 6 months



1.20.006 *Developing a Robust Collar Tie*

Lead Organisation: The University of Queensland

Project Leader: Michael Heitzmann

Blue Economy CRC Participant Organisations involved: The University of Queensland, Tassal Group Limited.

Project Duration: 36 Months



BLUE ECONOMY CRC PROJECTS 2019 - 2020



PROGRAM 2: Seafood and Marine Products Program

2.20.001 *Kelp Aquaculture Scoping Study*

Lead Organisation: Institute of Marine and Antarctic Studies, University of Tasmania

Project Leader: Jeff Wright

Blue Economy CRC Participant Organisations involved: University of Tasmania, Auckland University of Technology, Australian Abalone Growers Association, Australian Seaweed Institute, Marinova Pty Ltd, Southern Blue Reef Pty Ltd, Tasmanian Oyster Research Council Limited, The University of Queensland, Universidad de los Lagos.

Project Duration: 6 months



2.20.002 *Key Challenges for Offshore/High Energy Salmon Aquaculture Production*

Lead Organisation: Institute of Marine and Antarctic Studies, University of Tasmania

Project Leader: Chris Carter

Blue Economy CRC Participant Organisations involved: University of Tasmania, Auckland University of Technology, Blue Economy CRC, Cawthron Institute, CSIRO, Food Innovation Australia Ltd, Gibson's Limited trading as Skretting Australia, Huon Aquaculture Company Pty Ltd, Tasmania Oyster Research Council Limited, Tassal Group Limited, The New Zealand King Salmon Pty Limited.

Project Duration: 6 months



BLUE ECONOMY CRC PROJECTS 2019 - 2020



PROGRAM 3:

Offshore Renewable Energy Systems Program

3.20.001 Hydrogen Storage and Distribution

Lead Organisation: Griffith University

Project Leader: Evan Gray

Blue Economy CRC Participant Organisations involved: Griffith University, BOC Australia, CSIRO, Optimal Group Australia Pty Ltd.

Project Duration: 6 months



3.20.002 Offshore/High Energy Sustainable Hybrid Power Systems

Lead Organisation: Griffith University

Project Leader: Evan Gray

Blue Economy CRC Participant Organisations involved: Griffith University, Auckland University of Technology, BMT, Carnegie Clean Energy Limited, Climate-KIC Australia Ltd, CSIRO, ITM Power Pty Ltd, Optimal Group Australia Pty Ltd, Sabella SA, SAITEC SA, University of Tasmania, University of Western Australia.

Project Duration: 6 months



3.20.003 Offshore/High Energy Aquaculture Systems – Energy Demand Analysis

Lead Organisation: Commonwealth Scientific and Industrial Research Organisation (CSIRO)

Project Leader: Mark Hemer

Blue Economy CRC Participant Organisations involved: CSIRO, Blue Economy CRC, Energia Marina SpA, Huon Aquaculture Company Pty Ltd, Tasmanian Oyster Research Council Limited, Tassal Group Limited, The New Zealand King Salmon Pty Limited, Universidad Austral de Chile, University of Tasmania.

Project Duration: 6 months



BLUE ECONOMY CRC PROJECTS 2019 - 2020



PROGRAM 4: Environment and Ecosystems Program

4.20.001 *Monitoring and Assessing Offshore/High Energy Production Structures*

Lead Organisation: Griffith University

Project Leader: Chris Frid

Blue Economy CRC Participant Organisations involved: Griffith University, BMT, CSIRO, Sabella SA, Tassal Group Limited, The University of Queensland, University of Tasmania, University of Western Australia.

Project Duration: 6 months



4.20.002 *Operational Modelling for Offshore Aquaculture and Energy*

Lead Organisation: CSIRO

Project Leader: Emlyn Jones

Blue Economy CRC Participant Organisations involved: CSIRO, BMT, Carnegie Clean Energy Limited, Griffith University, Huon Aquaculture Company Pty Ltd, University of Western Australia.

Project Duration: 6 months



4.20.003 *Tools to Assess Cross-Sector Interactions*

Lead Organisation: Griffith University

Project Leader: Mischa Turschwell

Blue Economy CRC Participant Organisations involved: Griffith University, Blue Economy CRC, CSIRO, Tasmania Department of Primary Industries, Parks, Water and Environment, Ghent University, University of Tasmania.

Project Duration: 6 months



BLUE ECONOMY CRC PROJECTS 2019 - 2020



PROGRAM 5: Sustainable Offshore Developments Program

5.20.001 *Economic Assessment of Blue Economy*

Lead Organisation: Australian Maritime College, University of Tasmania

Project Leader: Oanh Nguyen

Blue Economy CRC Participant Organisations involved: University of Tasmania, Griffith University.

Project Duration: 6 months



5.20.002 *Integrating Blue Economy Governance Integrity Research*

Lead Organisation: Griffith University

Project Leader: Charles Sampford

Blue Economy CRC Participant Organisations involved: Griffith University, BMT, Carnegie Clean Energy Limited, University of Tasmania.

Project Duration: 6 months



5.20.003 *Logistics Challenges to Offshore/High Energy Co-Location of Aquaculture and Energy Industries*

Lead Organisation: Australian Maritime College, University of Tasmania

Project Leader: Peggy Chen

Blue Economy CRC Participant Organisations involved: University of Tasmania, BMT, Climate-KIC Australia Ltd, Tasmanian Department of Primary Industries, Parks, Water and Environment, Food Innovation Australia Ltd, Griffith University, Tasmania Oyster Research Council Limited, Tassal Group Limited.

Project Duration: 6 months



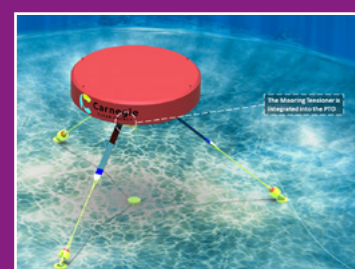
5.20.004 *Developing a Policy and Regulatory Research Plan for Australia's Emerging Blue Economy*

Lead Organisation: BMT

Project Leader: David Rissik

Blue Economy CRC Participant Organisations involved: BMT, Climate-KIC Australia Ltd, The University of Queensland, University of Tasmania.

Project Duration: 6 months



COMMONWEALTH MILESTONES ACHIEVED

The Blue Economy CRC has met or is on track to meet most of the Commonwealth milestones. However due to the later than anticipated commencement of research projects and complexities imposed by COVID-19, three milestones due on 30 June 2020 will now be completed by the end of 31 December 2020. Below are the Commonwealth Milestones achieved during the Reporting Period.

Milestone Number	Milestone Description
C1	Provision of Company Constitution and executed Participants Agreement
C2	Submission of Quarterly Report
C5	The CRC is to provide a detailed intellectual property framework that meets participant needs and includes a policy on the management and security of data of national importance.
C6	The CRC is to provide evidence that they have established an independent Board, as required under clause 5.4, with members skills and expertise aligned with the expected CRC outcomes.
CRC1.7	Five liaison officers (one per Research Program) will be appointed by 31 July 2020. Liaison officers to link across all other RPs to ensure cross program engagement / awareness). Written reports to Steering Committee meetings held quarterly.

COMMERCIALISATION

In the first year of operation the Blue Economy CRC has focussed on establishing structures, policies, and processes. Industry participation has been at the core of developing our research program and projects and all projects are designed to have at least one industry partner. Industry focus and participation is a critical attribute in considering projects for funding. IP attribution and protection is embedded in Project Agreements and Data Management Plans are required for all projects.

In this year, there has not been any significant commercialisation or utilisation activity.

A commercialisation strategy for the Blue Economy CRC will be developed in FY 2020-2021 and be detailed in the next Annual Report.

EDUCATION AND TRAINING

Training courses and workshops

Developing a workforce for the future Blue Economy is an integral part of the blue economy CRC. The Blue Economy CRC's education and training program provides an unprecedented scale of research opportunities, with fully and co-funded Higher Degree by Research (HDR) PhD scholarships across its five research programs. The Blue Economy CRC is an ideal work environment for talented graduates to conduct commercially viable research to tackle the technical challenges facing our blue economy industries, and with detailed cross-disciplinary knowledge.

PhD Scholars Program

Students will be part of a professional research team solving real industry problems, with access to world-class research facilities. The Blue Economy CRC aims to provide opportunities and funding for postgraduate students to enrich their research experience with short-term placements in relevant organisations, including government, private and university organisations, in both Australia and overseas. PhDs will be linked to industry-driven research topics and students will, as part of their candidacy, be embedded with partners to help ensure they are work ready and are connected to potential employers.

The Blue Economy CRC is aiming to deliver approximately 50 PhD graduates over its lifetime. PhD students will be sought through direct expressions of interest, via the Blue Economy CRC website and awarded in either General Projects, or stand-alone research scholarship projects.

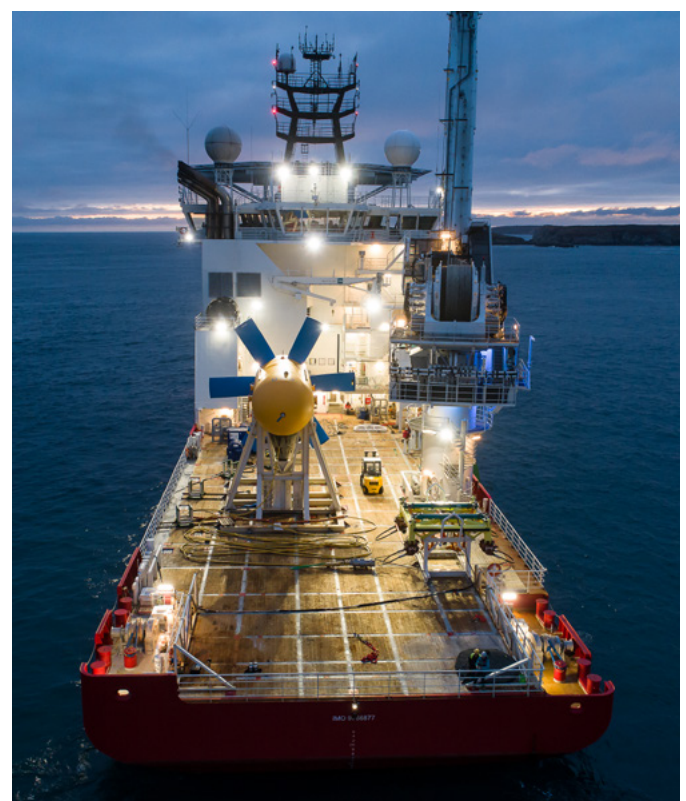
The PhD Scholars Program aims to develop and commercialise leading-edge research and produce graduates with hands-on industry experience to help create a highly skilled workforce. Hence our PhD Scholars will have opportunities to develop their industry knowledge and relevance, through additional training and international networking opportunities associated with the Blue Economy CRC.

The first call for projects was the first opportunity for project proposals containing PhD students to be submitted to the Blue Economy CRC for consideration. Through this call, 11 PhD scholarships were received with the first PhD student commenced in 2019-2020, within a General Project led by the University of Queensland.

The remaining PhDs awarded through the first round are due to commence their scholarships in 2020-2021.

From 2020-2021, a range of measures and programs will be built into the Blue Economy CRC's education and training program that are designed to add value to industry participants and researchers alike. This includes options for industry placement of early career researchers, international exchanges of staff and researchers, training opportunities, and an active program of events to provide opportunities for professional development, networking, public outreach and knowledge exchange.

With a focus on industry partner and end-user needs, the Blue Economy CRC will work with partners to deliver a range of targeted and appropriate short (summer) courses and Master Class programs that will inform industry and government of the latest developments and offer all industry Participants (as with postgraduates) access to undertaking a PhD, placements, field experience, and opportunities to present findings at national and international forums.



INTELLECTUAL PROPERTY MANAGEMENT

During its first year, the Blue Economy CRC has developed comprehensive intellectual property, data management and security policies and procedures that all Blue Economy CRC staff, the Board, Advisory committee members and students with a formal association with the Blue Economy CRC, are to follow. This obligation also encompasses project Participants, researchers, program leaders, Participant organisations, third parties and collaborators, and any custodians or managers of data involved on a project or collaborating with the Blue Economy CRC.

The Intellectual Property (IP) Framework has been prepared to provide guidance to the Blue Economy CRC including our research and commercial partners on how IP will be managed by the Company. The IP framework provides an overview of intellectual property, the definition of IP with regard to the Blue Economy CRC, and the inter-relationship between IP and data (that will be generated or collected by the Company). The Blue Economy CRC anticipates the creation of datasets which will have the potential to be of national interest / significance. The management and security of data is the subject of the (separate) Blue Economy's Data Management Framework. Our IP principles are consistent with the National Principles of Intellectual Property Management for Publicly Funded Research.

To achieve its Purpose the Company will licence the IP that it creates to its Participants on terms which allows those Participants to utilise the IP in ways that see the benefits reach the CRC's target end-users.

All Blue Economy CRC Project Leaders and Project Participants are required to identify and report all background, project and third party Intellectual Property (IP) to be used in the project, before commencement and execution of the Project Agreement, provide an update during the implementation of the project, and at the completion of the project.

In the first year of operation there was no commercialisation of IP generated from research, however, two versions of the Blue Economy CRC logo have been formally registered by the Blue Economy CRC. The IP generated through the Scoping Projects will be used to inform future research priorities and investments by the Blue Economy CRC and hence will be made available to Participants upon their agreement.



COLLABORATION

Collaboration is a critical aspect of the Blue Economy CRC and was an essential factor in the successful funding bid and subsequent execution of the Participants Agreement, that formalised the commitments of our 40 partners across industry, government and universities.

The Blue Economy CRC's 'Connect' platform has allowed Participants to collaborate in the development of ideas and future research projects. Connect has also allowed Participants to network and share relevant news and updates, a feature that has had good early adoption. The use of Connect represents a new model for research and development engagement and will be an essential part of the Blue Economy CRC's future operations.

The Blue Economy CRC held a 'Research Directions Workshop' in November 2019, designed to develop offshore aquaculture farming at Tassal Group's next generation salmon production site at West of Wedge Island (Storm Bay, Tasmania). There were 61 participants at the workshop including 15 Tassal Group staff, Blue Economy CRC Management and Research Leadership Team members, Chair of the Scientific Advisory Committee (and non-exec Board member) and researchers from Participant research organisations. Dedicated Tassal Group staff presented their experience and the challenges they will be facing with operations in exposed environments in regard to infrastructure (cages), environmental monitoring, fish production and fish health, and remote operated technologies (for feeding, cleaning nets, inspections). The first General Project was developed from this workshop, with several others identified for development.

The Blue Economy CRC held its inaugural Participant Workshop in late January 2020 in Hobart Tasmania, and was attended by 176 representatives from our Participant organisations. Thirty-two of our 40 Participants, representing 9 countries, were present. The event provided the first opportunity for CRC Directors and staff, partners, project leaders and end-users to work together, gain an insight into the research goals within the CRC, and commence the process of developing projects through collaboration.

The workshop was followed by full-day industry site visits, including to aquaculture farms near- and off-shore, and remote feeding aquaculture centres (operated by both Huon Aquaculture and Tassal Group), and specialist research facilities by University of Tasmania and CSIRO.

The focus of collaboration in the Blue Economy CRC's first year of operation has been the development of the initial research portfolio. As of 30 June 2020, 18 research projects had commenced. All 40 Participants in the Blue Economy CRC are collaborating extensively in the 17 Scoping Projects.

Strong collaborations have begun to develop between researchers, the aquaculture industry partners from Australia and New Zealand working towards the expansion of salmonoid production in offshore waters, and the emerging offshore renewable energy companies looking to provide cost-effective renewable energy technologies. The integration of the offshore aquaculture, renewable energy, and maritime engineering research sectors is deliberate; they are naturally synergistic and the Blue Economy CRC provides the opportunity for them to share critical knowledge and infrastructure, delivering productivity and operational cost benefits.

In terms of cross-sector collaboration, the Scoping Project that is identifying opportunities and priorities for seaweed aquaculture is particularly notable. This Project involves the largest number of non-Blue Economy CRC Participants, with third parties formally engaged including Australian Abalone Growers Association, Australian Seaweed Institute, BOC Australia, Marinova Pty Ltd, and the Universidad de los Lagos (Chile).

As the Blue Economy CRC moves into its second year, opportunities will be sought to collaborate with other CRCs, industry, government and research organisations, in order to add value to the activity of the Blue Economy CRC and maximise its impact to the emerging blue economy.

SME ENGAGEMENT

Small to Medium-sized Enterprises (SMEs), from both the profit and not-for-profit sectors, make up approximately 30% of the Blue Economy CRC's Participants. These SMEs represent advanced technology and manufacturing businesses, together with industry peak bodies. They were well represented at the inaugural Participants Workshop.

The strong industry focus of the Blue Economy CRC means that all Participants, including SMEs are encouraged and assisted to actively engage in project development and implementation. Any additional costs incurred from this activity (beyond existing in-kind contributions) are factored into the resultant Project Agreements.

The Blue Economy CRC has developed a series of webinars that are open to all Participants. SME representatives are invited as speakers, and these events provide an efficient means for SMEs to regularly engage with the Blue Economy CRC's larger industry and research organisations.

The Participants Advisory Committee (PAC) has representatives from SMEs, enabling the PAC to provide direct feedback to the Board on matters of particular concern and interest to the SMEs.

The SME sector is directly represented on the Board, via the role of Gunilla Burrowes as a Director. Gunilla has extensive experience with the SMEs.

COMMUNICATIONS

The internal and external communications goal of the Blue Economy CRC in its first year was to establish and build upon its brand presence and communicate the CRC's aims for the next ten years. Our communications activities were primarily focused on our Participants in the early stages, branching out to the wider community as projects and research activities commenced.

An important component of the Blue Economy CRC brand was to establish a corporate brand guidelines document, which included the Company logo and its required uses (including the Australian Government Cooperative Research Centre's Program application), a suite of stationery items including report, presentation and poster templates along with a suite of marketing materials. The brand identity guidelines were released mid-2020 and were made available to the Blue Economy CRC team for use in their communications activities.

A Blue Economy CRC partner badge was also created and sent to all Participants to display prominently on their website and advertising materials, to acknowledge their involvement with this CRC.

The Blue Economy CRC website is a key information portal for the wider community, partners and potential PhD students. Much focus has been spent in the past year, building upon the existing website (initially built pre-2019 at bid stage) and adding more comprehensive information about each research program, its objectives, current projects and staff. Each research program now has a comprehensive page on the website that is continually adapting as new projects and information comes to hand. There is a dedicated projects page highlighting all the current Blue Economy CRC projects underway, together with a downloadable project summary.

Regular communications within this CRC are essential – to both our Participants and the wider community. The Blue Economy CRC has built upon its communications database which currently sits at 1,833 subscribers, consisting of both internal and external parties. A mailing list for each individual research program has been created with the assistance of program leaders and integrated into the program website page. Community members or interested parties can elect to sign up to both the Blue Economy CRC-wide mailing list and/or the individual mailing list for programs of interest.

COMMUNICATIONS *cont.*

This enables us to direct targeted email campaigns to the right audience. Regular newsletters for each program are being developed and previous newsletter editions are available on the website at the relevant research program page.

The website 'News' page is updated regularly with the latest news and information from the CRC and is disseminated via Mailchimp and through our social media channels. These articles are also updated on the website homepage to maximise visibility.

The webinar series concept was also confirmed, with the first webinars due to commence in the first quarter of 2020-21.

The Blue Economy CRC is active on both LinkedIn and Twitter, with regular posts highlighting the key

CRC activities and research communications. We continue to build our audience on these platforms through the tagging of key Participants and encouragement of collaborative discussions.

This enables us to direct targeted email campaigns to the right audience. Regular newsletters for each program are being developed and previous newsletter editions are available on the website, at the relevant research program page.

Overall, we have seen a successful start to the Blue Economy CRC communications in its inaugural year.



PARTICIPANTS

The Blue Economy CRC has forty Participants as of 30 June 2020.

Participant Name	ABN/ACN	Organisation Type
Advanced Composite Structures Australia Pty Ltd	15 144 940 876	Individual SME
Auckland University of Technology	N/A	University
BMT Commercial Australia Pty Ltd	54 010 830 421	Individual SME
Carnegie Clean Energy Limited	69 009 237 736	Individual SME
Cawthron Institute	9429047263277	N/A
Climate-KIC Australia Ltd	95 616 047 744	Individual SME
CSIRO (CSIRO)	41 687 119 230	Australian Government
DNV GL Australia Pty Limited	14 154 635 319	Individual SME
Dredging N/A (Australia) Pty Limited (DEME)	44 001 088 197	Individual SME
East China Sea Fisheries Research Institute, Chinese Academy of Fishery Sciences	N/A	International
Energia Marina SpA (MERIC)	N/A	International
Food Innovation Australia Ltd	50 164 124 609	Individual SME
Ghent University	N/A	University
Gibson's Limited trading as Skretting Australia	23 009 476 064	Individual SME
Griffith University	78 106 094 461	University
Huon Aquaculture Company Pty Ltd	86 067 386 109	Large Industry
Macquarie University	90 952 801 237	University
National University of Singapore	N/A	University
OceanPixel Pte. Ltd.	N/A	International
Optimal Group Australia Pty Ltd	72 159 359 127	Individual SME
Pacific Engineering Systems N/A Pty Limited	49 002 776 276	Individual SME
Petuna Aquaculture Pty Ltd	62 009 485 581	Large Industry
Pitt & Sherry (Operations) Pty. Ltd.	67 140 184 309	Large Industry
Sabella SA	N/A	International
SAITEC, SA	42 611 590 017	Individual SME
SINTEF OCEAN AS	N/A	International
Southern Blue Reef Pty Ltd	65 166 483 861	Individual SME
Tasmanian Department of Primary Industries, Parks, Water and Environment	58 259 330 901	State Government
Tasmanian Oyster Research Council Limited	31 050 205 297	Industry Representative
Tassal Group Limited	15 106 067 270	Large Industry
Technology Centre for Offshore and Marine, Singapore Ltd.	N/A	University
The New Zealand Institute for Plant and Food Research Limited	N/A	International
The New Zealand King Salmon Pty Limited	54 063 201 856	Large Industry
The University of Queensland	63 942 912 684	University
Universidad Austral de Chile	N/A	University
University College Cork	N/A	University
University of Auckland	N/A	University
University of Tasmania	30 764 374 782	University
University of Western Australia	37 882 817 280	University
Xylem Water Solutions Australia Limited	28 000 832 922	Large Industry



THIRD PARTIES

The Blue Economy CRC has five third party participants involved in projects as of 30 June 2020.

Participant Name	ABN/ACN	Organisation Type
Australian Abalone Growers Association	98 225 665 336	Individual SME
Australian Seaweed Institute	78 628 082 664	Individual SME
Marinova Pty Ltd	17 103 342 801	Individual SME
Universidad de los Lagos	N/A	University
BOC Australia	88 003 183 417	Large Industry





Governance

Board, Committees and Key Staff

The Blue Economy CRC-Co Ltd (ABN 64 634 684 549) is an independent organisation that manages the Blue Economy CRC and is a Company Limited by Guarantee, incorporated in July 2019.

Participants in the CRC are eligible to become company members. At the end of the reporting period the Blue Economy CRC-Co Ltd had a sole member. The Blue Economy CRC is registered with the Australian Charities and Not-for-Profit Commission (ACNC) and is income tax exempt. The key legal agreements establishing the Blue Economy CRC-Co Ltd are:

- △ Blue Economy CRC Constitution
- △ CRC Grant Agreement between the Australian Government CRC Program and Blue Economy CRC-Co Ltd
- △ Participants Agreement between all Participants and Blue Economy CRC-Co Ltd.

Blue Economy CRC-Co Ltd is governed by an independent skills-based board which is made up of five independent Directors, one of whom acts as Chair. The Board provides oversight of the Blue Economy CRC's strategic direction, performance, and activities. The initial Directors (as named in the Blue Economy CRC-Co Ltd Constitution) were nominated and elected by the Participants and remained in office at the end of the reporting period following re-election by the sole member of the Blue Economy CRC-Co Ltd at the time.

There are four sub-committees which are listed below.



Election of Directors, Dates and Election Outcomes

Name	Role	Appointed	Number of Meetings Held While in Office	Number of Meetings Attended
Greg Johannes	Chair	5th July 2019	10	10
Gunilla Burrowes	Director	5th July 2019	10	10
Greg Vickery	Director	5th July 2019	10	10
Rhys Edwards	Director	5th July 2019	10	9
Nick Elliott	Director	5th July 2019	10	10




Board Meetings

Number	Date	Location
1	08 July 2019	University of Tasmania, Sandy Bay, Hobart
2	16 July 2019	University of Tasmania, Sandy Bay, Hobart
3	27 Aug 2019	University of Tasmania, Newnham Campus, Launceston
4	25 Sept 2019	University of Tasmania, Sandy Bay, Hobart
5	21 Oct 2019	University of Tasmania, Newnham Campus, Launceston
6	17 Dec 2019	University of Tasmania, Newnham Campus, Launceston
7	13 Feb 2020	University of Tasmania, Sandy Bay, Hobart
8	02 Apr 2020	Videoconference
9	14 May 2020	Videoconference
10	25 Jun 2020	Videoconference

DIRECTORS

Name	Board Position	Key Skills
<p>Greg Johannes</p> 	<p>Chair</p>	<p>Greg Johannes has more than 20 years of leadership experience in the Australian public, private, not-for-profit and research sectors. His roles have included being Head of the State Service and Secretary of the Department of Premier and Cabinet in Tasmania.</p> <p>In 2015 he was made a National Fellow of the Institute of Public Administration Australia for his outstanding contribution to the public sector in Australia over many years. Greg has a deep interest in the marine science community and has previously been on the boards of both the Antarctic Climate and Ecosystems CRC and the Institute for Marine and Antarctic Studies.</p> <p>He now runs a consulting company, helping boards, CEOs and senior managers and leaders address complex development and organisational issues. The son of a marine biologist, in his spare time Greg has been in or on the water since he was a young boy living in a remote village in Micronesia, and he snorkels and dives on the world's coral reefs whenever he can.</p>
<p>Greg Vickery (AO)</p> 	<p>Director</p>	<p>Greg Vickery is an experienced company and commercial lawyer and company director based in Brisbane. Graduating in Law from the University of Queensland he was for 40 years a partner of the firm now known as Norton Rose Fulbright at which he is now a part time consultant. He is a Fellow of the Australian Institute of Company Directors and is currently a director of several companies including Burrells Stockbroking P/L and Australia & International Holdings Ltd.</p> <p>He has previously been a director of several companies including Ergon Energy Retail, Queensland Energy Resources and Russo Higher Education P/L. He has previously been President of the Qld Law Society and chaired its Legal Education Committee for many years. He is currently Chair of the Law Council of Australia's Business & Human Rights Committee as well as being a member of its Integrity Committee. He was for many years a member of Federal Treasury's Companies and Markets Advisory Committee (CAMAC). He was for 7 years the Honorary Consul in Queensland for the Republic of Indonesia and he remains an active member of the Australia Indonesia Business Council.</p> <p>He is a qualified and experienced commercial mediator. He has for over 40 years been an active Red Cross volunteer, working mainly in the areas of fund raising and governance. He was for 8 years the national President of Australian Red Cross, for 6 years a member of the Governing Board of the International Red Cross & Red Crescent Societies and for 8 years an elected member of the prestigious International Standing Commission of Red Cross & Red Crescent Societies (including 4 years as its Chair.)</p> <p>In 2001 he became a member of the Order of Australia (AM) for services to law and legal education. In 2013 he was made an Officer of the Order of Australia (AO) for his governance and leadership of international humanitarian organisations.</p>

DIRECTORS cont.

Name	Board Position	Key Skills
<p>Dr Gunilla Burrowes</p> 	<p>Director</p>	<p>An electrical engineer with a broad range of industry and academic experience, Gunilla is passion-ate about innovation, entrepreneurship, technology commercialisation and improving diversity and inclusion in the workplace. She has a Master of Philosophy in Engineering Education and a Doctorate in Underwater Swarm Sensor Networks.</p> <p>In 2000, she founded an underwater tech company, BlueZone Group with her husband which now has two offices in Newcastle and Perth. Gunilla is also co-founder of a consultancy, Gender Mat-ters that advises organisations on gender equity and has a unique approach to mitigating cognitive bias in decision-making.</p> <p>Gunilla is the inaugural Chair of Eighteen04 (an inspirational co-working and incubator space for companies scaling in the clean tech and smart city area) and inaugural board member of Hunter iF project (an open consortium of leading organisations in the Hunter to support the growing startup ecosystem in the region). She is a member of the Hunter Angels and has been an Angel investor for over 10 years. Gunilla has graduated from the AICD Directors Course and is an active member on numerous company boards. She has been a National Vice President of Engineers Australia, awarded an Honorary Fellow of Engineers Australia in 2017 and invited as a Fellow of the Australian Academy of Technology and Engineering in 2019.</p>
<p>Dr Nick Elliott</p> 	<p>Director</p>	<p>Dr Nick Elliott has extensive marine and aquaculture research and industry knowledge, experience and achievements built through his 33-year career at CSIRO. He is internationally recognised for his research leadership, education and management. A PhD graduate from the University of Tasmania his research experience has included biomonitoring of heavy metals, genetics applied to fisheries, and the application of genetics, physiology, and innovative technologies to advance aquaculture production.</p> <p>His vision and leadership resulted in the internationally recognised selective breeding team at CSIRO, as well as collaborative innovative research in biotags and opportunities for industry expansion offshore. Nick has co-supervised over 15 post-graduate students and mentored many careers.</p> <p>His mission is to continue to see the transformation of the Australian aquaculture sector through collaborative research and education and is committed to the use and integration of rapidly advancing technologies. Nick brings abundant knowledge of aquaculture and research management to the Board, including over 10 years on the Tasmanian Fisheries Research Advisory Board.</p>
<p>Rhys Edwards</p> 	<p>Director</p>	<p>Rhys Edwards is the principal of RDME Consulting a boutique consulting firm working with governments, universities, and the private sector.</p> <p>Rhys is an experienced organisational leader having worked at the highest levels of the public sector including six years as Secretary of the Department of Premier and Cabinet in Tasmania. He has a strong background in governance, leadership, economic development, innovation, and major project facilitation.</p> <p>Rhys is an honorary senior research fellow at Melbourne University, a moderator for the Cranlana Centre for Ethical Leadership, a fellow of the Australian Institute of Company Directors and a Salzburg Global Fellow.</p> <p>Rhys enjoys working with clients at the intersection of government, education, social enterprise, and the private sector to create new models for change and growth.</p>

FINANCIAL AUDIT AND RISK MANAGEMENT COMMITTEE (FARM)

The purpose of the Finance, Audit and Risk (FARM) Committee is to provide advice to the Board of the Blue Economy CRC on issues to do with financial management and performance, risk management and audit. The FARM committee met on two occasions in 2019-2020.

Name	Board Position	Key Skills
Rhys Edwards	Director, Chair	See Board Description
Greg Vickery	Director, Member	See Board Description
Alicia Leis	Member	Partner, Audit, Assurance & Advisory, WLF Advisory & Accounting

SCIENTIFIC ADVISORY COMMITTEE

The purpose of the Scientific Advisory Committee (SAC) is to provide advice to the Board of Blue Economy CRC-Co Ltd (the Board) in relation to the relevance, scientific rigour, funding and performance of the R&D Projects to be undertaken under the auspices of the Blue Economy CRC. The SAC met on two occasions in 2019-2020.

Name	Board Position	Key Skills
Dr Nick Elliott	Director, Chair	See Board description
Dr Raymond Bannister	Independent Member	Senior Environmental Officer, EPA Tasmania
Dr Nic Bax	Member	Director Marine Biodiversity Hub, CSIRO
Dr Brad Evans	Member	Senior Manager Breeding and Research, Tassal
Dr David Rissik	Member	Head of Business Development, BMT
Dr Maren Wellenreuther	Member	Science Group Leader, Plant and Food Research, The New Zealand Institute for Plant and Food Research
Prof Stewart Frusher	Member	Adjunct Professor, Centre for Marine Socioecology, IMAS-UTAS
Prof Ian MacKinnon	Independent Member	Faculty of Science and Engineering, QUT
Dr Martin Renilson	Independent Member	Director, Renilson Marine Consulting

PARTICIPANTS ADVISORY COMMITTEE

The Participants Advisory Committee (PAC) reports directly to the Board and provides advice on matters such as the Blue Economy CRC's overall strategic direction and priorities for participant engagement. The PAC's role includes helping the Blue Economy CRC increase participant engagement and providing market intelligence through networks and industry engagement. The PAC has met once in 2019-2020.

Name	Board Position	Key Skills
Greg Johannes	Director, Chair	See Board Description
Prof Mohan Krishnamoorthy	Member	Pro-Vice-Chancellor (Research Partnerships), The University of Queensland
Terry Bailey	Member	Executive Director, Institute for Marine and Antarctic Studies, University of Tasmania
Dr ir Margriet Drouillon	Member	Chief Business Officer, The Aqua UGent consortium
Stephanie Thornton	Member	Cluster Manager, Australian Ocean Energy Group
Dr Ian Dutton	Member	Director Marine Resources, The Department of Primary Industries, Parks, Water and Environment
Prof Udaya K. Madawala	Member	Professor Faculty of Engineering, The University of Auckland
Phillipa Ormandy	Member	Business Director, CSIRO
Sue Grau	Member	CEO, Oysters Tasmania
Jonathan Fiévez	Member	CEO, Carnegie Clean Energy Limited
Mark Asman	Member	Head of Aquaculture, Tassal Group Limited

COMMUNICATIONS ADVISORY COMMITTEE

The purpose of the Communication Advisory Committee (CAC) is to provide advice to the Board on matters relating to internal and external communication activities to support the effective operation of the Blue Economy CRC. The CAC will be established and hold its first meeting in 2020-2021.

STAFF

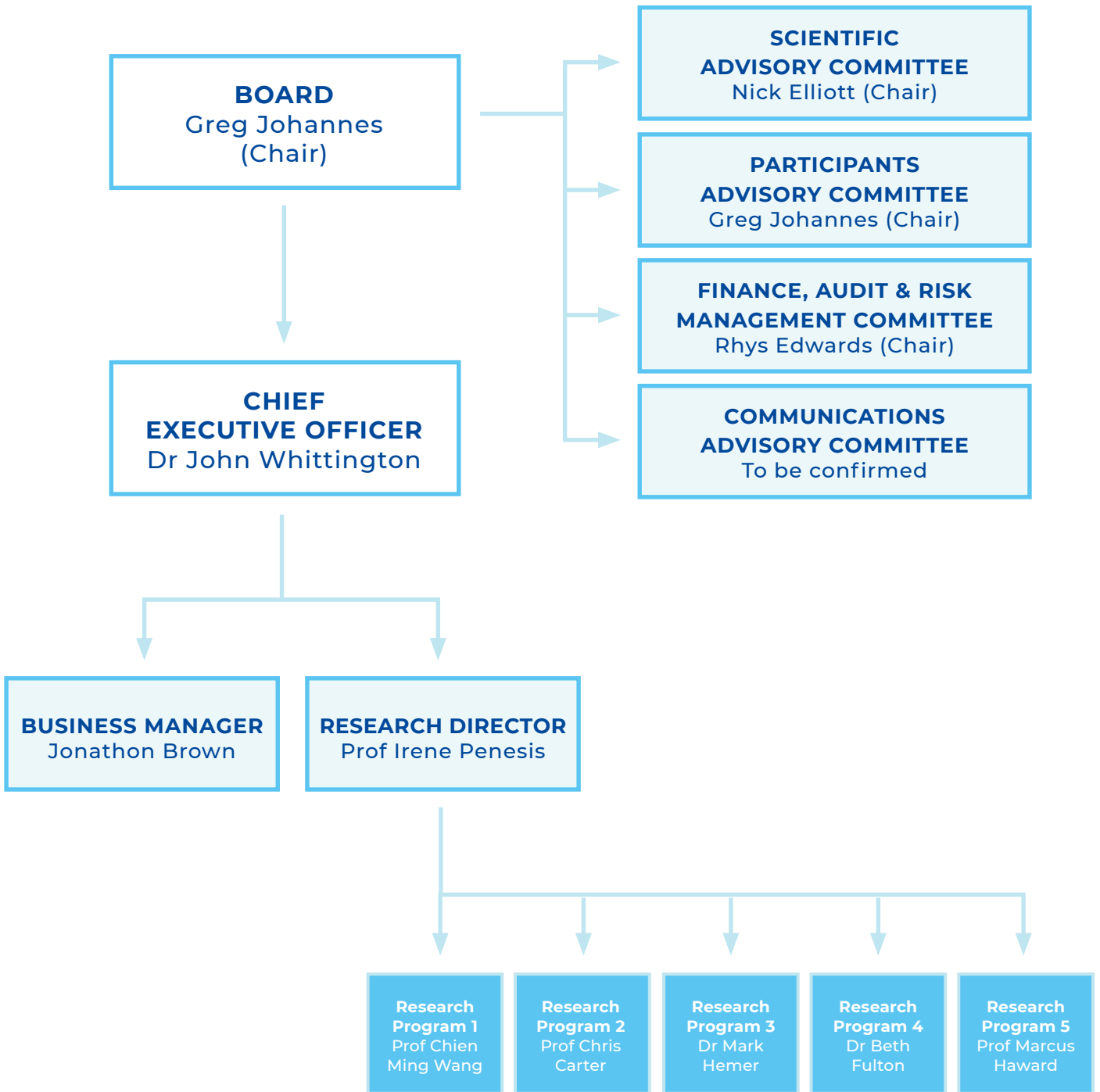
Name	Organisation	Role	Time Commitment
Dr Darren Cundy	Blue Economy CRC*	Interim CEO (8 July 2019 – 27 January 2020)	100%
Dr John Whittington	Blue Economy CRC	CEO (28 January 2020 – ongoing)	95%
Prof Irene Penesis	Blue Economy CRC*	Interim Research Director (19 August 2019 – 31 March 2020)	80%
		Research Director (1 April 2020 – 30 June 2022)	100%
Jonathon Brown	Blue Economy CRC	Business Manager/Company Secretary (28 January 2020 – ongoing)	100%
Anneka Ferguson	Blue Economy CRC*	Research Executive Officer (10 March 2020 – 9 March 2021)	100%

*On secondment from the University of Tasmania

PROGRAM LEADERS AND DEPUTY LEADERS

Name	Organisation	Role	Time Commitment
Prof Chien Ming Wang	University of Queensland	Research Program 1 - Leader	60%
Dr Nagi Abdussamie	University of Tasmania	Research Program 1 - Deputy Leader	40%
Prof Chris Carter	University of Tasmania	Research Program 2 - Leader	60%
Prof Lindsey White	Auckland University of Technology	Research Program 2 - Deputy Leader	40%
Dr Mark Hemer	CSIRO	Research Program 3 - Leader	60%
Prof Evan Gray	Griffith University	Research Program 3 - Deputy Leader	40%
Dr Beth Fulton	CSIRO	Research Program 4 - Leader	60%
Dr Remo Cossu	The University of Queensland	Research Program 4 - Deputy Leader	20%
Prof Chris Frid	Griffith University	Research Program 4 - Deputy Leader	20%
Prof Marcus Haward	University of Tasmania	Research Program 5 - Leader	60%
Assoc Prof Ki-Hoon Lee	Griffith University	Research Program 5 - Deputy Leader	20%
Dr Leo Dutra	CSIRO	Research Program 5 - Deputy Leader	20%

BLUE ECONOMY CRC ORGANISATIONAL CHART



Financial Management

The Blue Economy CRC had a retained restricted surplus at 30 June 2020 of \$4.9 million and a cash carried forward balance of \$3.3 million. This carried forward amount is due to cash contributions having been received from the Australian Government's CRC Program and Participants (in accordance with the Participants Agreement) but the research activities not commencing until later in the financial year. These carried forward funds are committed to future research projects, education and training activities and operational management activities.

The Blue Economy CRC has received cash contributions from its participants during FY20 of \$4.8 million. Six Participants had not paid their cash contribution at balance date, primarily as a direct result of COVID-19. COVID-19 has presented the greatest challenge in terms of collecting participant contributions however these have been actively managed, and arrangements put in place to review the shortfalls during FY21. Australian Government funding was in line with expectations.

Total expenditure for the year was \$2.8 million, made up primarily of research program coordination support positions, project fund payments, research infrastructure costs including a Multi-Site Access Agreement, salary for Blue Economy CRC staff and professional fees including start-up costs. The Blue Economy CRC is committed to maintaining a low central overhead structure to ensure the best return to participants.

A forward focus of the Blue Economy CRC is to attract additional revenue to at least balance the anticipated shortfall from participants. This shortfall arose because several bid partners did not proceed to contract or revised their contributions down.

Cash balances are being invested in short-term cash deposits appropriate for cash flow requirements.

In-kind staff contributions for the reporting period related to the establishment of the Blue Economy CRC and the initial research portfolio and totalled 8.7 FTE. Non-staff in-kind contributions were \$84,900. In-kind contributions will increase significantly in future years in line with the research program.

The Blue Economy CRC has implemented sound financial management and governance practices to ensure the financial resources of the CRC are well managed and financial risks mitigated.

The audited financial statements for the year ended 30 June 2020 follow.



The Blue Economy CRC is committed to maintaining a low central overhead structure to ensure the best return to participants.

BLUE

ECONOMY

COOPERATIVE RESEARCH CENTRE



Australian Government
Department of Industry, Science,
Energy and Resources

Business
Cooperative Research
Centres Program

Blue Economy CRC-Co Ltd
ACN 634 684 549

**Financial Report for the period 5 July 2019 (date of
incorporation) to 30 June 2020**



Directors' Report

Blue Economy CRC-Co Ltd For the year ended 30 June 2020

The Directors of Blue Economy CRC-Co Limited ("the Company") present their report, together with the financial statements of the entity for the period 5 July 2019 to 30 June 2020 and the Independent Audit Report.

Directors details

The following persons were Directors of the company during the whole period since incorporation up to the date of this report:

Greg Johannes	(Appointed 5 July 2019)
Gunilla Burrowes	(Appointed 5 July 2019)
Greg Vickery	(Appointed 5 July 2019)
Rhys Edwards	(Appointed 5 July 2019)
Nick Elliott	(Appointed 5 July 2019)

Objectives

To meet the objectives the Company draws together the knowledge, skills and experience of 40 Participants from industry, research and government, based around Australia and internationally.

The Company's short-term objectives are to:

- Support and build a network of Participants, from research, industry, and government to develop industry focused research programs;
- Coordinate Participant cash and in-kind contributions together with funding from the Australian Government to undertake the research and training activities and commercialise the outcomes of research;
- Commence the Blue Economy CRC's Higher Degree by Research Education Program to support the development of trained workforce for the future.

The Company's long-term objectives are to perform world class, collaborative, industry focused research and training that underpins the growth of Australia's Blue Economy through increased offshore sustainable seafood production and renewable energy.

Directors' Report

Strategy for achieving the objectives

To achieve these objectives, the Company has developed five research programs and an education and training program and commissions activity across these programs:

Program 1: Offshore Engineering & Technology

The Offshore Engineering and Technology program will generate the infrastructure that supports the development of offshore systems. It brings together industrial engineering expertise to collaborate with the aquaculture and offshore renewable energy sectors to build the required infrastructure for integrated offshore operations.

Program 2: Seafood & Marine Products

The Seafood and Marine Products program will develop offshore aquaculture systems that provide viable and sustainable growth opportunities for this sector.

Program 3: Offshore Renewable Energy Systems

The Offshore Renewable Energy Systems program will support offshore aquaculture through supplies of lower cost energy and ancillary products (oxygen and freshwater) and to contribute to the cost of offshore infrastructure through the development of exportable energy carriers (e.g. hydrogen).

Program 4: Environment & Ecosystems

The Environment & Ecosystems program will evaluate the environmental footprint of the infrastructure, culture systems and energy generating devices. The program connects with the Sustainable Offshore Developments program to develop management systems to monitor environmental impact and interactions with other sectors, and with offshore engineering, aquaculture and renewable energy programs to monitor the impacts of the environment on health, maintenance and performance of species, infrastructure and devices respectively.

Program 5 Sustainable Offshore Developments

The Sustainable Offshore Developments program will profile and advocate for the regulatory frameworks that will provide confidence for aquaculture and renewable energy industry to invest and for the public to be confident that offshore developments operate to the highest environmental standards for sustainability and ecosystem integrity.

Principal activities

The company was established in July 2019. During the period the principal activities have been the establishment of the company structure and governance arrangements, recruitment of staff and the execution of the following agreements:

- CRC Grant Agreement 20180101 with the Commonwealth Government;
- Participants Agreement between the company and 40 Participants; and,
- 18 Project Agreements to deliver industry focused research projects in offshore aquaculture and offshore energy production.

18 industry focused collaborative projects have commenced across the five Programs involving industry, research, and government.



Directors' Report

Performance measures

The company's principal obligations arise from CRC Grant Agreement 20180101 between the Blue Economy CRC and the Commonwealth Government. The Blue Economy CRC delivers these obligations by developing and undertaking projects whose outputs contribute to meeting the contracted milestones. The company has developed software-based systems to track progress towards meeting milestones.

As at 30 June 2020, most milestones have either been met or are on track to be met however due to the later than anticipated commencement of research projects and the complexities imposed by COVID-19, three milestones due 30 June 2020 will now be completed by the end of 31 December 2020.

Meetings of Directors

During the financial year, 10 meetings of directors were held. Attendances by each director were as follows:

Directors Meetings		
	Number eligible to attend	Number attended
Greg Johannes	10	10
Gunilla Burrowes	10	10
Greg Vickery	10	10
Rhys Edwards	10	9
Nick Elliott	10	10

Information on directors

Name:	Greg Johannes
Title:	Chair of the Board
Qualifications:	BA (Hons)
Experience and expertise:	<p>Greg Johannes has more than 20 years of leadership experience in the Australian public, private, not-for-profit and research sectors. His roles have included being Head of the State Service and Secretary of the Department of Premier and Cabinet in Tasmania.</p> <p>In 2015 he was made a National Fellow of the Institute of Public Administration Australia for his outstanding contribution to the public sector in Australia over many years. Greg has a deep interest in the marine science community and has previously been on the boards of both the Antarctic Climate and Ecosystems CRC and the Institute for Marine and Antarctic Studies.</p> <p>He now runs a consulting company, helping boards, CEOs and senior managers and leaders address complex development and organisational issues. The son of a marine biologist, in his spare time Greg has been in or on the water since he was a young boy living in a remote village in Micronesia, and he snorkels and dives on the world's coral reefs whenever he can.</p>
Special responsibilities:	Chair of the Participants Advisory Committee

Name:	Gunilla Burrowes
Title:	Board Director
Qualifications:	BE (Elec), MPhil, PhD & GAICD
Experience and expertise:	<p>An electrical engineer with a broad range of industry and academic experience, Gunilla is passionate about innovation, entrepreneurship, technology commercialisation and improving diversity and inclusion in the workplace. She has a Master of Philosophy in Engineering Education and a Doctorate in Underwater Swarm Sensor Networks.</p> <p>In 2000, she founded an underwater tech company, BlueZone Group with her husband which now has two offices in Newcastle and Perth. Gunilla is also co-founder of a consultancy, Gender Matters that advises organisations on gender equity and has a unique approach to mitigating cognitive bias in decision-making.</p> <p>Gunilla is the inaugural Chair of Eighteen04 (an inspirational co-working and incubator space for companies scaling in the clean tech and smart city area) and inaugural board member of Hunter iF project (an open consortium of leading organisations in the Hunter to support the growing startup ecosystem in the region). She is a member of the Hunter Angels and has been an Angel investor for over 10 years. Gunilla has graduated from the AICD Directors Course and is an active member on numerous company boards. She has been a National Vice President of Engineers Australia, awarded an Honorary Fellow of Engineers Australia in 2017 and invited as a Fellow of the Australian Academy of Technology and Engineering in 2019.</p>
Special responsibilities:	Member of the Communications Advisory Committee

Directors' Report

Name: Greg Vickery AO
Title: Board Director
Qualifications: BA/LLB, Grad Dip Dispute Resolution and FAICD
Experience and expertise: Greg Vickery is an experienced company and commercial lawyer and company director based in Brisbane. Graduating in Law from the University of Queensland he was for 40 years a partner of the firm now known as Norton Rose Fulbright at which he is now a part time consultant. He is a Fellow of the Australian Institute of Company Directors and is currently a director of several companies including Burrells Stockbroking P/L and Australia & International Holdings Ltd. He has previously been a director of several companies including Ergon Energy Retail, Queensland Energy Resources and Russo Higher Education P/L. He has previously been President of the Qld Law Society and chaired its Legal Education Committee for many years. He is currently Chair of the Law Council of Australia's Business & Human Rights Committee as well as being a member of its Integrity Committee. He was for many years a member of Federal Treasury's Companies and Markets Advisory Committee (CAMAC). He was for 7 years the Honorary Consul in Queensland for the Republic of Indonesia and he remains an active member of the Australia Indonesia Business Council. He is a qualified and experienced commercial mediator. He has for over 40 years been an active Red Cross volunteer, working mainly in the areas of fund raising and governance. He was for 8 years the national President of Australian Red Cross, for 6 years a member of the Governing Board of the International Red Cross & Red Crescent Societies and for 8 years an elected member of the prestigious International Standing Commission of Red Cross & Red Crescent Societies (including 4 years as its Chair.) In 2001 he became a member of the Order of Australia (AM) for services to law and legal education. In 2013 he was made an Officer of the Order of Australia (AO) for his governance and leadership of international humanitarian organisations.

Special responsibilities: Member of the Finance, Audit & Risk Management Committee

Name: Dr Nick Elliott
Title: Board Director
Qualifications: BSc (Hons), PhD
Experience and expertise: Dr Nick Elliott has extensive marine and aquaculture research and industry knowledge, experience and achievements built through his 33-year career at CSIRO. He is internationally recognised for his research leadership, education and management. A PhD graduate from the University of Tasmania his research experience has included biomonitoring of heavy metals, genetics applied to fisheries, and the application of genetics, physiology, and innovative technologies to advance aquaculture production. His vision and leadership resulted in the internationally recognised selective breeding team at CSIRO, as well as collaborative innovative research in biotags and opportunities for industry expansion offshore. Nick has co-supervised over 15 post-graduate students and mentored many careers. His mission is to continue to see the transformation of the Australian aquaculture sector through collaborative research and education and is committed to the use and integration of rapidly advancing technologies. Nick brings abundant knowledge of aquaculture and research management to the Board, including over 10 years on the Tasmanian Fisheries Research Advisory Board

Special responsibilities: Chair of the Scientific Advisory Committee

Directors' Report

Name: Rhys Edwards
Title: Board Director
Qualifications: B.Ec (Hons), MSc. Comparative Social Research
Experience and expertise: Rhys Edwards is the principal of RDME Consulting a boutique consulting firm working with governments, universities, and the private sector.
 Rhys is an experienced organisational leader having worked at the highest levels of the public sector including six years as Secretary of the Department of Premier and Cabinet in Tasmania. He has a strong background in governance, leadership, economic development, innovation, and major project facilitation.
 Rhys is an honorary senior research fellow at Melbourne University, a moderator for the Cranlana Centre for Ethical Leadership, a fellow of the Australian Institute of Company Directors and a Salzburg Global Fellow.
 Rhys enjoys working with clients at the intersection of government, education, social enterprise, and the private sector to create new models for change and growth.
Special responsibilities: Chair of the Finance, Audit & Risk Management Committee

Company Secretary**Jonathon Brown** BBus

Jonathon Brown has held the role of company secretary since 29 January 2020. Jonathon also acts as the Business Manager of the Company. Jonathon has held several senior executive positions across various industries in both Australia and New Zealand. Prior to joining Blue Economy CRC Co Ltd Jonathon held the position of General Manager & previously Financial Controller & Company Secretary with co-operative hospitality company, Edgewater Resort in New Zealand. Jonathon holds a Bachelor of Business from the University of Tasmania and has over 10 years' experience in business management, finance and advisory, having worked for KPMG and a number of global hospitality & vacation exchange companies across Australia and New Zealand.

Contributions on winding up

In the event of the company being wound up, ordinary members are required to contribute a maximum of \$10 each. At 30 June 2020 the total amount that members of the Company are liable to contribute if the Company is wound up is \$10.

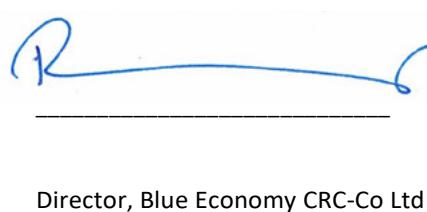
Auditor's Independence Declaration

A copy of the Auditor's Independence Declaration for the period ended 30 June 2020 is included in this financial report and forms part of the Directors' Report.

Signed in accordance with a resolution of the Board of Directors.



Chair, Blue Economy CRC-Co Ltd



Director, Blue Economy CRC-Co Ltd

Dated this 13th day of Nov 2020



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Hobart TAS 7000
GPO Box 1681 Hobart TAS 7001
Australia

DECLARATION OF INDEPENDENCE BY NAME OF DAVID PALMER TO THE DIRECTORS OF BLUE ECONOMY CRC-CO LTD

As lead auditor of Blue Economy CRC-CO Ltd for the year ended 30 June 2020, I declare that, to the best of my knowledge and belief, there have been:

1. No contraventions of the auditor independence requirements of the *Corporations Act 2001* in relation to the audit; and
2. No contraventions of any applicable code of professional conduct in relation to the audit.

This declaration is in respect of Blue Economy CRC-CO Ltd.

A handwritten signature in black ink, appearing to be 'DP', with a long horizontal flourish extending to the right.

David Palmer
Partner
BDO Audit (TAS)

Hobart, 13 November 2020

Statement of Profit or Loss

Blue Economy CRC-Co Ltd For the year ended 30 June 2020

	NOTES	2020
Funding and Program Revenue		
Funding and Program Revenue	10	7,853,947
Total Funding and Program Revenue		7,853,947
Expenditure		
Research and Development Expenditure		1,864,423
Consulting and Legal Fees		388,589
Employee Benefit Expense		256,170
Director Fees and Training		155,251
General Administration		153,098
Travel		32,630
Marketing and Communications		25,788
Depreciation and Amortisation Expense		160
Finance Fees		1,840
Total Expenditure		2,877,949
Net Surplus / (Deficit) for the year		4,975,998

Statement of Financial Position

Blue Economy CRC-Co Ltd As at 30 June 2020

	NOTES	30 JUN 2020
Assets		
Current Assets		
Cash and cash equivalents	2	1,356,495
Trade and other receivables	3	1,239,000
Financial assets	5	2,000,000
Other current assets	6	1,269,091
Total Current Assets		5,864,586
Non-Current Assets		
Property, plant and equipment	4	13,767
Total Non-Current Assets		13,767
Total Assets		5,878,353
Liabilities		
Current Liabilities		
Provisions	7	32,603
Trade and other payables	8	596,530
GST		267,388
Total Current Liabilities		896,521
Non-Current Liabilities		
Other non-current liabilities	9	5,834
Total Non-Current Liabilities		5,834
Total Liabilities		902,355
Net Assets		4,975,998
Accumulated Funds		
Surplus / (Deficit) for the year		4,975,998
Balance at end of year		4,975,998

Statement of Cash Flows

Blue Economy CRC-Co Ltd For the year ended 30 June 2020

	NOTES	2020
Operating Activities		
Receipts From Grants & Participants		7,292,627
Cash Payments From Other Operating Activities		(3,030,184)
Net Cash Flows from Operating Activities		4,262,443
Investing Activities		
Payment for Property, Plant and Equipment	4	(13,927)
Payment for Investments	5	(2,000,000)
Other Cash Items From Investing Activities		(1,269,091)
Net Cash Flows from Investing Activities		(3,283,018)
Other Activities		
Other Activities		377,070
Net Cash Flows from Other Activities		377,070
Net Cash Flows		1,356,495
Cash and Cash Equivalents		
Cash and cash equivalents at beginning of period		-
Blue Economy CRC-Co Ltd	2	1,356,495
Cash and cash equivalents at end of period		1,356,495
Net change in cash for period		1,356,495



Movements in Equity

Blue Economy CRC-Co Ltd For the year ended 30 June 2020

2020

Equity

Opening Balance

-

Increases

Surplus for the Period

4,975,998

Total Increases**4,975,998**

Total Equity**4,975,998**

Notes to the Financial Statements

Blue Economy CRC-Co Ltd For the year ended 30 June 2020

1. Statement of Significant Accounting Policies

The financial statements are general purpose financial statements prepared in order to satisfy the financial reporting requirements of the Corporations Act 2001 and Division 60 of the Australian Charities and Not-for-Profits Commission Act 2012. Blue Economy CRC-Co Ltd is a public company limited by guarantee and the Board has determined that the Company is not a reporting entity.

The financial report has been prepared on an accruals basis and is based on historic costs and does not take into account changing money values, or except where specifically stated, current valuations of non-current assets.

In accordance with the reporting requirements of the Australian Charities and Not-for-Profit Commission the Company has complied with the following accounting standards:

- *AASB 101 Presentation of Financial Statements*
- *AASB 107 Statement of Cash Flows*
- *AASB 108 Accounting Policies, Changes in Accounting Estimates and Errors*
- *AASB 1048 Interpretation of Standards and*
- *AASB 1054 Australian Additional Disclosures*

The following significant accounting policies have been adopted in the preparation of these financial statements.

(a) Cash and Cash Equivalents

Cash and Cash Equivalents in the Statement of Financial Position comprise cash at bank and in hand and short-term deposits with an original maturity of three months or less. For the purposes of the statement of Cash Flows, cash and cash equivalents consist of cash and cash equivalents as defined above, net of outstanding bank overdrafts.

(b) Receivables

Trade receivables are initially recognised at fair value and subsequently measured at amortised cost using the effective interest method, less any allowance for expected credit losses. Trade receivables are generally due for settlement within 30 days.

The company has applied the simplified approach to measuring expected credit losses, which uses a lifetime expected loss allowance. To measure the expected credit losses, trade receivables have been grouped based on days overdue.

Other receivables are recognised at amortised cost, less any allowance for expected credit losses.

(c) Property Plant & Equipment

All classes of property, plant and equipment are measured on the cost basis and are therefore carried at cost less accumulated depreciation and any accumulated impairment losses. Cost includes expenditure that is directly attributable to the acquisition of the item.

The method of depreciation and the depreciation rate is used as follows:

Furniture and Computer Equipment – Straight Line Method at 30% - 50%

Computer Software –Diminishing Value 67%

Fitout – Straight Line Method over the remaining life of the lease

Gains and losses on disposals are determined by comparing proceeds with the carrying amount. These gains or losses are recognised in profit or loss in the period in which they arise.

(d) Revenue Recognition

Revenue comprises revenue from government grants, cash and in-kind contributions from Participants. Revenue from major products and services is shown in Note 10.

Revenue is measured by reference to the fair value of consideration received or receivable by the Company for goods supplied and services provided, excluding sales taxes, rebates, and trade discounts.

Revenue is recognised when the amount of revenue can be measured reliably, collection is probable, the costs incurred or to be incurred can be measured reliably, and when the criteria for each for the Company's different activities have been met. Details of the activity-specific recognition criteria are described below.

(i) Government Grants

A number of the Company's programs are supported by grants received from the federal, state and local governments.

If sufficiently specific conditions are attached to a grant which must be satisfied before the Company is eligible to receive the contribution, recognition of the grant as revenue is deferred until those conditions are satisfied.

Where a grant is received on the condition that specified services are delivered to the grantor, revenue is recognised as services are performed and at period end a liability is recognised until the service is delivered.

Revenue that is not subject to conditions is recognised when the Company obtains control of the funds, economic benefits are probable and the amount can be measured reliably. The revenue is recognised on cash receipts basis. Where a grant may be required to be repaid if certain conditions are not satisfied, a liability is recognised at period end to the extent that conditions remain unsatisfied.

Where the Company receives a contribution of an asset from a government or other party for no or nominal consideration, the asset is recognised at fair value and a corresponding amount of revenue is recognised.

(ii) Cash Contributions Received from Participants

Income arising from cash contributions received from participants is recognised when the Company is in control of or has the right to receive the contributions.

(iii) In-kind Contributions

In-kind contributions from Partners are brought to account as revenue and expenditure incurred in accordance with AASB 1058.

These in-kind contributions are measured at fair value based on the dollar value provided by each Partner in their reporting to the Company consistent with the valuation principles agreed under the terms of the Commonwealth Agreement.

The types of in-kind expenditure recorded by the Company largely include salary and overhead costs and other expenses incurred on equipment and consumables by the Partners in conducting research activities on behalf of the Company.

In relation to in-kind expenditure for overhead costs the Company has adopted the same on costs as those reported under the Commonwealth Agreement as the basis that they are deemed reasonable and reliably measured by management.

(iv) Gifts and Donations

Gifts and donations received that do not create enforceable rights and performance obligations are recognised as revenue on receipts

**(v) Interest Revenue**

Interest revenue is recognised using the effective interest rate method. It includes the amortisation of any discount or premium

(e) Trade and Other Payables

Trade and other payables are recognised when the company becomes obliged to make future payments resulting from the purchase of goods and services. The amounts are unsecured and paid within 30 days of recognition.

(f) Impairment

At each reporting date the company reviews the carrying amounts of assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss if any. The recoverable amount is assessed as the higher of fair value less costs to sell or the assets value in use being the depreciated replacement cost.

(g) Goods and Services Tax

Revenue, expenses and assets are recognised net of the amount of goods and services tax (GST) except:

1. Where the amount of GST incurred is not recoverable from the taxation authority, it is recognised as part of the cost of acquisition of an asset or as part of an item of expense, or
2. For receivables and payables which are recognised inclusive of GST, the net amount of GST recoverable from, or payable to the taxation authority is included as part of receivables or payables in the Statement of Financial Position. Receivables and payables are stated with the amount of GST included.

Cash flows are included in the Statement of Cash Flows on a gross basis. The GST component of cash flows arising from investing and financing activities, which is recoverable from, or payable to, the taxation authority, is classified as an operating cash flow.

(h) Provisions

Provisions are recognised when the company has a present obligation (legal, equitable or constructive) as a result of a present or past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation.

The amount recognised as a provision is the best estimate of the consideration required to settle the present obligation at reporting date.

(i) Leases

The company recognises a right-of-use asset and a lease liability at the lease commencement date. The right-of-use asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or

before the commencement date, plus any initial direct costs incurred and an estimate of costs to dismantle and remove the underlying asset or to restore the underlying asset or the site on which it is located, less any lease incentives received.

The right-of-use asset is subsequently depreciated using the straight-line method from the commencement date to the earlier of the end of the useful life of the right-of-use asset or the end of the lease term. The estimated useful lives of right-of-use assets are determined on the same basis as those of property and equipment. In addition, the right-of-use asset is periodically reduced by impairment losses, if any, and adjusted for certain re-measurements of the lease liability.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the interest rate implicit in the lease or if that rate cannot be readily determined, the company's incremental borrowing rate. Generally, the company uses its incremental borrowing rate as the discount rate.

Lease payments included in the measurement of the lease liability comprise the following:

- Fixed payments; including in-substance fixed payments;
- Variable lease payments that depend on an index or a rate, initially measured using the index or rate as at the commencement date
- Amounts expected to be payable under a residual value guarantee; and
- The exercise price under a purchase option that the company is reasonably certain to exercise, lease payments in an optional renewal period if the company is reasonably certain to exercise and extension option, and penalties for early termination of a lease unless the company is reasonably certain not to terminate early.

The lease liability is measured at amortised cost using the effective interest method. It is remeasured when there is a change in future lease payments arising from a change in an index or rate, if there is a change in the company's estimate of the amount expected to be payable under a residual value guarantee, or if the company changes its assessment of whether it will exercise a purchase, extension or termination option.

When the lease liability is remeasured this way, a corresponding adjustment is made to the carrying amount of the right-of-use asset or is recorded in profit or loss if the carrying amount of the right-of-use asset has been reduced to zero.

(j) Income Taxes

The company is charitable organisation under Subdivision 50-B of the Income Tax Assessment Act 1997, Division 176 of a New Tax System (Goods and Services Tax) Act 1999 and section 123E of the Fringe Benefits Tax Assessment Act 1986.

The company is exempt from income tax and therefore no provision for income tax is made in these financial statements.

(k) Financial Assets and Financial Liabilities

Financial assets and financial liabilities are recognised in the Statement of Financial Position when the company becomes party to the contractual provisions of the financial instrument.

Financial instruments are subsequently measured at fair value, amortised cost using the effective interest method, or cost.

A financial asset is derecognised when the contractual rights to the cash flows from the financial assets expire or are transferred and no longer controlled by the company

A financial liability is removed from the Statement of Financial Position when the obligation specified in the contract is discharged or cancelled or expires.

Financial assets and financial liabilities classified as held for trading are measured at fair value through profit or loss

Financial assets not measured at fair value comprise held-to-maturity investments being non-derivative financial assets with fixed or determinable payments and fixed maturity that will be held to maturity. These are measured at amortised cost using the effective interest method.

(l) Research and Development Expenditure

Research and development expenditure is recognised as an expense in the period incurred.

Intangible assets arising from development activities are recognised when resources are available to complete the assets and future economic benefits from use or sale of assets is probable.

(m) Contingent Liabilities

A contingent loss is recognised as an expense and a liability if it is probable that future events will confirm that, after taking into account any related probable recovery, an asset has been impaired, or a liability incurred and, a reasonable estimate of the amount of the resulting loss can be made.

(n) Employee Benefits

Short term employee benefits are employee benefits (other than termination benefits and equity compensation benefits) which fall due wholly within 12 months after the end of the period in which employee services are rendered. They comprise wages, salaries, social security obligations, short-term compensation absences, profit sharing and bonuses payable within 12 months and non-mandatory benefits such as medical care, housing and car and service goods.

Short term employee benefits are measured at the (undiscounted) amounts expected to be paid when the obligation is settled.

Other long-term employee benefits include long-service leave, long-term disability benefits, deferred compensation and profit sharing and bonuses payable 12 months or more after the end of the period in which employee service are rendered.

Other long-term employee benefits are measured at the present value of the expected future payments to be made to employees.

Defined Contribution superannuation benefits

All employees of the company receive defined contribution superannuation entitlements, for which the company pays the fixed superannuation guarantee contribution (currently 9.5% of the employee's average ordinary salary) to the employee's superannuation fund of choice. All contributions are recognised as an expense when they become payable.

(o) Intangible Assets

Intangible Assets are accounted for using the cost model whereby capitalised costs are amortised on a straight-line basis over their estimated useful lives, as these assets are considered finite. Residual values and useful lives are reviewed at each reporting date and they are subject to impairment testing.

(p) Commitments for Expenditures

Operating expenditure contracted but not included in the financial statements:



2020

Payable

Not longer than one year	-
Longer than one year but no longer than five years	6,000,000
Longer than five years	-
Total Payable	6,000,000

There is also a three year option which may be exercised by the cooperative.

2020

2. Cash and Cash Equivalents**Bank Accounts**

Blue Economy CRC-Co Ltd	1,356,495
Total Cash and Cash Equivalents	1,356,495

2020

3. Receivables**Current**

Accounts Receivable	1,239,000
Total Receivables	1,239,000

2020

4. Property Plant and Equipment**Plant and Equipment**

Plant and Equipment at Cost	13,927
Accumulated Depreciation of Plant and Equipment	(160)
Total Property Plant and Equipment	13,767

2020

5. Financial Assets**Current**

CBA Term Deposit	2,000,000
Total Financial Assets	2,000,000

2020

6. Other Assets**Current**

Prepayments	1,269,091
Total Other Assets	1,269,091

2020

7. Provisions

Accrued Wage	6,692
Annual Leave Liability	15,067
Long Service Leave Liability	3,310
Sick Leave Liability	7,534
Total Provisions	32,603

2020

8. Payables**Current**

Accrued Expenses	348,286
Accounts Payable	141,075
FBT Payable	217
PAYG Withholdings Payable	90,641
Superannuation Payable	8,576
Wages Payable - Payroll	7,735
Total Payables	596,530

2020

9. Other Liabilities**Non-current**

Insurance Funding	6,379
Interest on Funding	(545)
Total Non-current	5,834

Total Other Liabilities	5,834
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2020

10. Results from Operating Activities**Government and Participant Contributions**

Cash Contributions at Beginning	-
Contractual Cash Contributions Invoiced to Commonwealth	2,955,553
Contractual Cash Contributions Invoiced to Participants	4,898,394
Less: Cash Contributions Invoiced but not Spent at Balance Date	-
Total Government and Participant Contributions	7,853,947

Other Income

Interest Income	-
Other	-
Total Other Income	-

Net Realised Income	7,853,947
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Reconciliation of Net Result

Participants Milestone Claims & Administration Expenses	2,877,949
Total Reconciliation of Net Result	2,877,949
Net Result	4,975,998
	2020

11. 2020 Invoices

Advanced Composite Structures Australia Pty Ltd	12,500
Auckland University of Technology	375,000
BMT Commercial Australia Pty Ltd	62,500
Carnegie Clean Energy Limited	10,000
Commonwealth Scientific and Industrial Research Organisation	300,000
Cooperative Research Centres Program Department of Industry, Innovative & Science	2,955,553
Crown in Right of Tasmania represented by the Department	250,000
East China Sea Fisheries Research Institute	500,000
Ghent University	2,144
Gibson's Limited trading as Skretting Australia	62,500
Griffith University	375,000
Huon Aquaculture Company Pty Ltd	50,000
Macquarie University	75,000
Ocean Pixel Pte. Ltd	125,000
Petuna Aquaculture Pty Ltd	31,250
SINTEF Ocean AS	50,000
Tasmanian Oyster Research Council Limited	25,000
Tassal Group Limited	1,000,000
The New Zealand Institute for Plant and Food Research	25,000
The University of Queensland	443,750
University of Tasmania	975,000
University of Western Australia	86,250
Xylem Water Solutions Australia Limited	62,500
Total 2020 Invoices	7,853,947

12. Share Capital

Blue Economy CRC-Co Ltd is a company limited by guarantee; thereby the company has been formed on the principle of having the liability of its members limited by the Constitution to the respective amount that the members undertake to contribute to the property of the company in the event of it being wound up.

13. Financial Risk Management Objectives and Policies

The company's principal financial instruments comprise receivables, payables, cash and short-term deposits. These activities expose the company to a variety of financial risks: market risk(including interest rate risk), credit risk and liquidity risk.

Surplus funds are invested in short and long-term deposits with the one of the four major Australian banks at the best negotiated rate with maturities selected to match future expenditure needs.

Ageing analyses and monitoring of specific credit allowances are undertaken to manage credit risk, liquidity risk is monitored through regular analysis of cash flows over a variety of periods that draw on the business budgets and forecasts.

The company has implemented a risk management process and a number of operational Key Performance Indicators and provides the Board and Management with an assessment of performance against agreed objectives.

Risk Exposure and Responses

Interest Rate Risk

The company's exposure to market interest rates related primarily to the short and long-term deposits it held.

The company's exposure to interest rate risk is not material as the majority of its interest-bearing financial assets are in the form of fixed rate term deposits

Liquidity Risk

The company manages liquidity risk by monitoring cash flow and maturity profiles of financial assets and liabilities.

14. Related Party Transactions

The names of all Directors who have held office during the financial period are:

Mr Greg Johannes (Chairman), Appointed 09/07/2019

Mr Greg Vickery, Appointed 09/07/2019

Ms Gunilla Burrowes, Appointed 09/07/2019

Mr Nicholas Elliott, Appointed 09/07/2019

Mr Rhys Edwards, Appointed 09/07/2019

All the directors of the company are non-executive directors.

The result from operations includes the following item of revenue and expenses that resulted from transactions with directors or their related parties:

Greg Johannes - \$54,795

Greg Vickery - \$22,830

Gunilla Burrowes - \$22,830

Nicholas Elliott - \$27,397

Rhys Edwards - \$27,397

15. Key Management Personnel

Key management personnel comprise executive directors and other persons having authority and responsibility for planning, directing and controlling the activities of Blue Economy CRC-Co Ltd.

Name of each key management person	Position
Dr John Whittington	Chief Executive Officer
Prof Irene Penesis	Research Director
Mr Jonathon Brown	Business Manager



2020

The amounts paid or payable to key management personnel are as follows:

Short-term employee benefits	317,120
Post employment benefits	38,202

16. Entity Details

The registered office & the principal place of business of the Company is:

Building "V"

Maritime Way

Newham, TAS 7248

Directors Declaration

Blue Economy CRC-Co Ltd For the year ended 30 June 2020

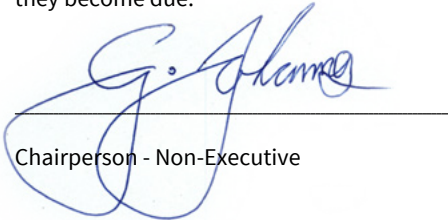
In accordance with the resolution of the directors of Blue Economy CRC-Co Ltd, the directors declare that:

1. The financial statements and notes are in accordance with the *Corporations Act 2001* and the *Australian Not-for-Profit and Charities Commission Act 2012* and:

a. comply with Australian Accounting Standards applicable to the Company and Division 60 of the Australian Charities & Not-For-Profits Commission Regulations 2013; and

b. give a true and fair view of the financial position of the Company as at 2020 and of its performance for the year ended on that date in accordance with the accounting policies described in Note 1 to the financial statements.

2. In the directors' opinion there are reasonable grounds to believe that the Company will be able to pay its debts as and when they become due.



Chairperson - Non-Executive

13th November 2020

Date



Director - Non-Executive

13th November 2020

Date



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Australia

INDEPENDENT AUDITOR'S REPORT

To the members of Blue Economy CRC-Co Ltd

Report on the Audit of the Financial Report

Opinion

We have audited the financial report of Blue Economy CRC-Co Ltd (the registered entity), which comprises the statement of financial position as at 30 June 2020, the statement of profit or loss and other comprehensive income, the statement of changes in equity and the statement of cash flows for the year then ended, and notes to the financial report, including a summary of significant accounting policies, and the responsible entities' declaration.

In our opinion the accompanying financial report of Blue Economy CRC-Co Ltd, is in accordance with Division 60 of the *Australian Charities and Not-for-profits Commission Act 2012*, including:

- (i) Giving a true and fair view of the registered entity's financial position as at 30 June 2020 and of its financial performance for the year then ended; and
- (ii) Complying with Australian Accounting Standards - Reduced Disclosure Requirements and Division 60 of the *Australian Charities and Not-for-profits Commission Regulation 2013*.

Basis for opinion

We conducted our audit in accordance with Australian Auditing Standards. Our responsibilities under those standards are further described in the *Auditor's responsibilities for the audit of the Financial Report* section of our report. We are independent of the registered entity in accordance with the auditor independence requirements of the *Australian Charities and Not-for-profits Commission Act 2012* (ACNC Act) and the ethical requirements of the Accounting Professional and Ethical Standards Board's *APES 110 Code of Ethics for Professional Accountants (including Independence Standards)* (the Code) that are relevant to our audit of the financial report in Australia. We have also fulfilled our other ethical responsibilities in accordance with the Code.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Responsibilities of responsible entities for the Financial Report

The responsible entities of the registered entity are responsible for the preparation and fair presentation of the financial report in accordance with Australian Accounting Standards - Reduced Disclosure Requirements and the ACNC Act, and for such internal control as the responsible entities determine is necessary to enable the preparation of the financial report that is free from material misstatement, whether due to fraud or error.

In preparing the financial report, responsible entities are responsible for assessing the registered entity's ability to continue as a going concern, disclosing, as applicable, matters related to going



concern and using the going concern basis of accounting unless the responsible entities either intends to liquidate the registered entity or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the registered entity's financial reporting process.

Auditor's responsibilities for the audit of the Financial Report

Our objectives are to obtain reasonable assurance about whether the financial report as a whole is free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Australian Auditing Standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of this financial report.

A further description of our responsibilities for the audit of the financial report is located at the Auditing and Assurance Standards Board website (<http://www.auasb.gov.au/Home.aspx>) at:

http://www.auasb.gov.au/auditors_responsibilities/ar4.pdf

This description forms part of our auditor's report.

BDO Audit (TAS)

BDO Audit (TAS)



David E Palmer
Partner

Hobart, 13 November 2020



Blue Economy CRC

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Australian Government
Department of Industry, Science,
Energy and Resources

Business
Cooperative Research
Centres Program

ABN: 64 634 684 549