Part 6

Science and Industry Endowment Fund

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Trustee's report

SIEF Trustee, Dr Larry Marshall

I'm delighted to present the 2019–20 report that highlights the important role the Science and Industry Endowment Fund (SIEF) plays in addressing national challenges and encouraging collaboration and capacity building. Funded through several gifts and endowments, SIEF's strategic investments have enabled Australia to respond to its greatest challenges and develop greater resilience and self-sufficiency.

The gifts and endowments:

- the CSIRO Gift (2009)
- the New South Wales (NSW) Government Endowment (2017)
- the National ICT Australia Ltd (NICTA) Gift (2018)
- the Metcalf Gift (2019).

Supporting our emerging scientists and engineers

Since its beginnings in 1926, SIEF has encouraged Science, Technology, Engineering and Mathematics (STEM) capability, development and the education of our future scientists and engineers, for the benefit of the nation.

During its 11 years, the CSIRO Gift's Promotion of Science Program has provided learning and career opportunities for over 400 students and early career researchers.

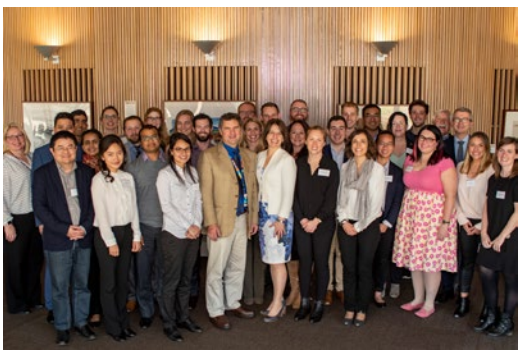
I am very proud of two unique programs that SIEF supports through the CSIRO Gift: the SIEF (Ross Metcalf) STEM+Business Fellowships and the SIEF-Australian Academy of Science (AAS) Lindau Nobel Laureate Meetings Fellowships program.

The STEM+Business Fellowships program commenced in 2015 and is facilitated by CSIRO's SME Connect. I was delighted to announce in last year's SIEF report that the Metcalf gift would fund an additional eight to ten fellowships for this highly successful program. To recognise Mr Metcalf's gift, the fellowships are now known as the SIEF Ross Metcalf STEM+Business Fellowships. The new fellowships were launched in November, and the first fellowship funded by the Metcalf Gift commenced in April.

In September, I attended a SIEF-AAS Lindau Nobel Laureate meeting fellowships alumni event to announce an additional 10 years' funding for the SIEF-AAS Lindau Nobel Laureate meeting fellowships program. The program provides funding for 10 to 15 postgraduate students or postdoctoral fellows to attend annual meetings of the Nobel Laureates in Lindau, Germany. This program, managed by the Australian Academy of Science, has strengthened the scientific diplomacy between Australia and Germany. The Academy's exemplary planning and coordination of activities has positioned our Australian representatives as highly professional and sought-after delegates. This once in a lifetime opportunity allows them to learn from some of the most distinguished scientists, and network with the brightest young minds from all over the world. SIEF also provides funding to support a tour of German universities and research institutions for the Australian delegation after the Lindau meeting, furthering the scientific connections between the two countries. The additional funding ensures that our future scientists and engineers will continue to benefit by attending this unique event until 2031.

The NSW Government Endowment funds Generation STEM, a program building the capability of our future scientists and engineers, managed by CSIRO's Education and Outreach team. It increases the supply of students trained in STEM to meet the needs of employers in NSW and the nation.

Read the performance analysis of the NSW Generation STEM initiative under Function 1.3 on page 71.



Attending the SIEF-AAS Nobel Laureate Fellowships alumni event. Credit: Dr Tom Carruthers, Australian Academy of Science.

Investing in research infrastructure and precincts

The CSIRO Gift Research Infrastructure Program supports the creation or enhancement of nationally significant research infrastructure facilities or equipment with a strong emphasis on collaboration. It comprises the Major Research Infrastructure Program and the Medium Equipment Program.

SIEF has invested $31.6 million for the Major Research Infrastructure Program for precincts in Western Australia, Victoria and the Australian Capital Territory (ACT).

The Boorowa Agricultural Research Station.

The ACT precinct – the National Agricultural and Environmental Science Precinct – is a collaborative project between CSIRO and the Australian National University. SIEF provided funding to establish the Centre for Genomics, Metabolomics and Bioinformatics (CGMB) and construct a new life sciences building at the Black Mountain Innovation and Science Precinct. The precinct fosters research and innovation essential to food security and environmental stewardship in the face of climate change, population growth and land degradation. It will enable new crop development with improvements in yields and nutrient profiles, provide innovative solutions to environmental management and opportunities to connect with partners locally, nationally and globally. The CGMB was awarded a grant from the Australian Research Council for a mass spectrometer to complement the existing instrumentation within the precinct and two joint initiatives have commenced: the Centre for Entrepreneurial Agri-Technology and the Biological Data Science Institute.

The Medium Equipment Program (MEP) facilitates leading-edge innovation in Australia, enhances collaboration across the innovation system, and grows the capability and capacity of the equipment stock available to researchers. SIEF's investment of $9.8 million in a range of scientific equipment is being realised through instruments and facilities for use by the research community.

Australia prides itself in its ability to feed the nation using efficient farming practices. To assist Australia to meet the growing demand for food, reduce food wastage and develop high-value food products, the SIEF MEP is supporting two state-of-the-art facilities: the Boorowa Agricultural Research Station in Boorowa, NSW, and the Food Ingredient Process Innovation Platform in Werribee, Victoria.

Boorowa is conducting cutting-edge agricultural and environmental research using digital agriculture technologies, such as precision agriculture, and remote and non-destructive crop monitoring. It is a showcase for agricultural technologies and a catalyst for industry and funding agencies to explore new ideas and opportunities. Universities, state departments of agriculture and agribusiness use the farm, its facilities and underlying digital infrastructure for collaborative research. Industry will benefit from increased efficiencies in farming practices, a greater understanding of the nutrient and water requirements of crops, and using a test bed to assess growing conditions and new breeds of crops, which will provide greater returns on investment for primary producers.

The Werribee food processing facility provides Australia with a unique ingredient platform that adds value to commodity agricultural produce by transforming it into nutritious food, beverages, and nutraceutical, supplement and cosmeceutical ingredients. This facility is fully commissioned and has been actively engaging with industry and the research sector to showcase its capabilities and uses. I'm particularly pleased that these outreach activities have attracted several of Australia's large food companies to collaborate on projects at the facility.

Hydrogen generator for refuelling fuel-cell electric vehicles

Growing global demand for clean hydrogen fuel represents a significant opportunity to establish an Australian renewable hydrogen export industry. Using ammonia as a carrier, renewable hydrogen produced in Australia can be readily distributed, at large scale, to emerging markets in Japan, Korea and Europe while using existing infrastructure for ammonia transport. The gap in this supply chain is a technology that can efficiently and inexpensively convert ammonia into high-purity hydrogen at or near the point of use for fuel-cell electric vehicles (FCEVs).

Transportation and storage are the critical challenges faced by the hydrogen fuel industry; the current available technologies are complex and expensive.

A hydrogen generating system was developed that allows hydrogen in the form of liquid ammonia to be transported economically and efficiently. Liquid ammonia stores 35 per cent more energy than liquid hydrogen, is easier to ship and distribute, and can use the existing logistics chains for this purpose. Our solution addresses the conversion of ammonia back to high-purity hydrogen at, or near, the point of use. This opens up the possibility for a renewable energy export market.

SIEF's support enabled the demonstration of this concept on a 5–15 kilogram per day hydrogen pilot-production scale, operating over 1,000 hours with more than 80 per cent ammonia 'cracking' efficiency and more than 80 per cent hydrogen extraction rate. The world's first demonstration of fuel-cell vehicles refuelled with hydrogen derived directly from ammonia was held in August 2018 with two commercial FCEVs (Toyota Mirai and Hyundai Nexo).

The final step to commercialise this technology requires the hydrogen and FCEV industries to facilitate incorporating the commercial-scale hydrogen generating system and validating the first step for refuelling to day-to-day FCEV for real-life customers.

SIEF funding for this project facilitated the translation of knowledge to a commercial solution. The support enabled the successful scaling up of the technology and demonstrated its potential as the critical last step in ammonia-based hydrogen distribution.

The SIEF funding was instrumental to realise the value-proposition of this work and aided in the fast-tracking of this technology from research to its future uptake and commercialisation.

Refuelling a hydrogen fuel cell electric vehicle by the Hon Keith Pitt MP, former Assistant Minister to the Deputy Prime Minister, with Dr Larry Marshall.

SIEF supporting Australia's preparedness for natural disasters and diseases

As part of the MEP, SIEF is funding a small multispectral shortwave infrared imaging satellite. This CubeSat, named CSIROsat-1, is being in Australia and specifically designed for Australian needs, which has provided substantial opportunities to Australian industry and increased capabilities for the national innovation system. After it is launched, the CubeSat will provide data on Australia's environment, which may be used to detect land cover changes such as flooding or deforestation, bushfires through smoke, and tropical cyclones through cloud formation.

To solve the greatest challenges, it is essential we that collaborate with others and have access to the best scientific equipment. The SIEF Special Research Program funded a new transmission electron microscope for the Australian Centre for Disease Preparedness. Electron microscopy capability is a critical contributor to our understanding of viruses, host interaction and viral mechanisms for diseases such as COVID-19. The instrument will enhance Australia's pathogen research capability, and as it will be made available to the research community, it will foster collaborations with university partners, state animal health laboratories, international collaborators and Microscopy Australia partners.

SIEF also invested in pandemic preparedness through the Vaximiser Experimental Development Program project. Knowing that many vaccines are manufactured using eggs, CSIRO developed a premium high-yield egg specifically to maximise vaccine production cost effectively, and with less waste than current production processes. SIEF's funding will enable the validation of CSIRO's technology under commercial conditions and support large-scale pilot trials with leading vaccine companies. The industrial application of this invention will enhance our capacity to respond to disease outbreaks to help protect the world from the next pandemic.

Assisting Australian industry

The Experimental Development Program (EDP) funded by the CSIRO Gift provides Australian companies with a competitive advantage by assisting with collaborative research and the commercialisation of new technologies.

The use of hydrogen as an alternative fuel source to fossil fuels for transport has taken a great leap forward since SIEF invested in an EDP project that converts liquid ammonia to hydrogen. This technology will pave the way for bulk hydrogen to be transported in the form of ammonia, using existing infrastructure, and then reconverted back to fuel cell vehicle-quality hydrogen.

SIEF commissioned an impact case study to evaluate this EDP on hydrogen technology. Read more about the performance analysis of this EDP under Function 1.3 on page 71.

Supporting food security and supply chains

SIEF supports food security, food sustainability and supply chain integrity through the NICTA Gift's Future National ICT Industry Platform Program's digital initiatives. The pilot digital initiative Food Provenance developed testing tools and platforms for Australia's seafood industries to trace their products, reduce supply chain inefficiencies, adopt more sustainable food production practises, and increase international consumer confidence in the origin, quality, and handling of Australian food. SIEF commissioned an impact case study on the Boat to Plate project that is developing solutions for automated video analysis of fish catches using computer vision, machine learning, catch species identification, system integration and connections with the Australian fishing industry and fisheries management authorities.

The performance analysis of the digital initiatives under Function 1.3 is on page 71.

SIEF has supported two additional digital initiatives in supply chain integrity, which is now an issue of national importance as we've witnessed the vulnerability of international supply chains as a result of the COVID-19 pandemic. I am proud that SIEF's support for such timely research will provide great benefit to Australia.

In my role as SIEF Trustee, I am assisted by the advisory bodies and expert reviewers who generously contribute their time and expertise to SIEF to provide advice on funding decisions across the portfolio. I sincerely thank them for the advice they have provided me this year.

SIEF plays a critical role in assisting Australian industry, furthering the interests of the Australian community and contributing to solving national challenges. Through collaboration, developing capability and investing in new scientific research and infrastructure, SIEF is preparing Australia for an innovative and prosperous future.

Dr Larry Marshall
SIEF Trustee

SIEF advisory bodies

CSIRO Gift Advisory Council Members

Emeritus Prof Alan Robson (Chair)
Dr Peter Riddles AM (Chair, EDP Review Panels)
Mr Nigel Poole
Dr Ezio Rizzardo
Professor Margaret Sheil
Professor Tom Spurling

Generation STEM Consultative Council

Professor Brian Boyle (Chair)*
Ms Maile Carnegie
Mr Simon Rowell*
Ms Gail Fulton
Mr Graeme Plato*
Dr Dave Williams
Mr David Wright (Chair)

NICTA Program Advisory Council

Ms Michelle Price
Ms Petra Andren*
Mr John Paitaridis
Mr Adrian Turner*
Dr Simon Barry

*Indicates retirement from the Councils.

From Boat to Plate

The seafood industry faces inefficiency from lack of traceability in the supply chain – from capture to the consumer.

With the increasing demand for seafood, around food safety, quality, food fraud, sustainability and regulatory breaches make seafood provenance a concern for consumers, producers, and regulatory bodies across the globe.

Imagery from point of capture is seen as the basis for the supply chain management for industry, yet automated species identification and tracking remains a challenge.

The Boat to Plate team developed an innovative solution in the form of an automated species identification system, embedded within a tagging and data management system. The product offers a convenient, cost- and time-effective solution for seafood providers to monitor and manage their product throughout the supply chain. The implementation of the technology has the potential to reduce losses due to market and supply chain inefficiencies in the seafood industry.

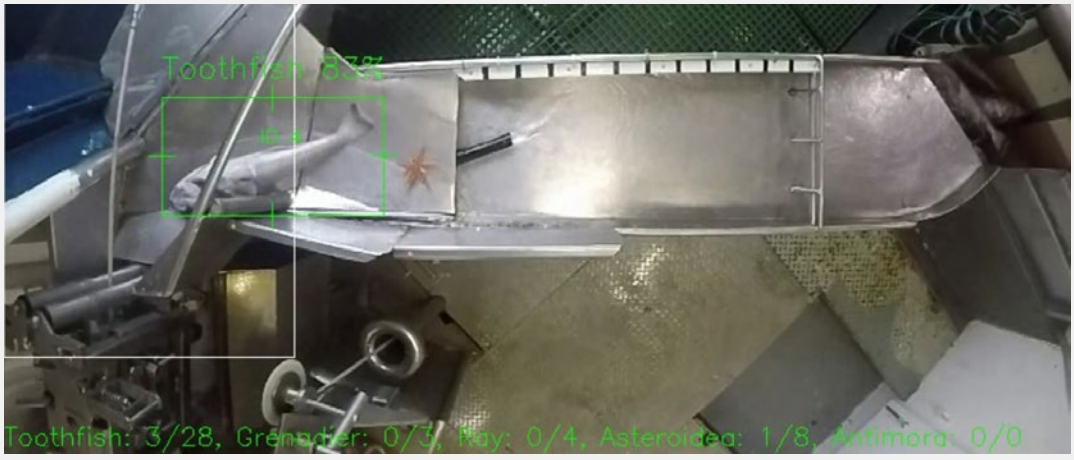
The team collaborated with external organisations for testing and validating, including the Mures Tasmania fishing and strategic operations team, to get insights about their supply chain challenges for development and testing of a mock-up system. The mock-up system is being used as a prototype to build similar systems for other fish species, and commercial partnerships.

The on-board automated visual identification of fish catch will help markets gain greater clarity of products and provide regulators assurances of sustainability, and faster, more cost effective practices. This will lead to enhanced seafood supply chain management, traceability and food security for industry, wholesalers and retailers that purchase Australian seafood products. Boat to Plate has potential to boost confidence between buyers and sellers of Australian seafood and create a substantially improved product-market fit.

It presents an opportunity to generate cost-savings in the order of billions of dollars associated with current market inefficiencies and seafood wastage.

The work has significant application in the Australian domestic industry to maintain good regulatory compliance. The work also offers significant potential for global application. New Zealand and Chile are installing electronic monitoring systems on thousands of fishing vessels over the next two years, offering potential for uptake and adoption. Southeast Asian fisheries alone consist of 3.5 million fishing vessels and represent a significant global market for this innovation.

SIEF funding support has played an instrumental role to advance this work, from research project to its uptake and commercialisation.



Automated species identification and counting of freshly caught fish on a boat. Credit: Austral Fisheries.

Australian National Audit Office

INDEPENDENT AUDITOR'S REPORT

To the Minister for Industry, Science and Technology

Opinion

In my opinion, the financial statements of the Science and Industry Endowment Fund for the year ended 30 June 2020:

(a) comply with Australian Accounting Standards – Reduced Disclosure Requirements and the *Science and Industry Endowment Act 1926*; and

(b) present fairly the financial position of the Science and Industry Endowment Fund as at 30 June 2020 and its financial performance and cash flows for the year then ended.

The financial statements of the Science and Industry Endowment Fund, which I have audited, comprise the following as at 30 June 2020 and for the year then ended:

- Statement by the Trustee and Chief Finance Officer of the Commonwealth Scientific and Industrial Research Organisation (CSIRO) as Service Provider to the Science and Industry Fund;
- Statement of Comprehensive Income;
- Statement of Financial Position;
- Statement of Changes in Equity;
- Statement of Cash Flow;
- Notes to and forming part of the financial report.

Basis for opinion

I conducted my audit in accordance with the Australian National Audit Office Auditing Standards, which incorporate the Australian Auditing Standards. My responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of my report. I am independent of the Science and Industry Endowment Fund in accordance with the relevant ethical requirements for financial statement audits conducted by the Auditor-General and his delegates. These include the relevant independence requirements of the Accounting Professional and Ethical Standards Board's APES 110 *Code of Ethics for Professional Accountants (including Independence Standards)* (the Code) to the extent that they are not in conflict with the *Auditor-General Act 1997*. I have also fulfilled my other responsibilities in accordance with the Code. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Trustee's responsibility for the financial statements

The Trustee of the Science and Industry Endowment Fund is responsible for the preparation and fair presentation of annual financial statements that comply with Australian Accounting Standards – Reduced Disclosure Requirements and the *Science and Industry Endowment Act 1926*. The Trustee is also responsible for such internal control as he determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Trustee is responsible for assessing the ability of the Science and Industry Endowment Fund to continue as a going concern, taking into account whether the Science and Industry Endowment Fund's operations will cease as a result of an administrative restructure or for any other reason. The Trustee is also responsible for disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the assessment indicates that it is not appropriate.

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Auditor's responsibilities for the audit of the financial statements

My objective is to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Australian National Audit Office 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 the financial statements.

As part of an audit in accordance with the Australian National Audit Office Auditing Standards, I exercise professional judgement and maintain professional scepticism throughout the audit. I also:

- identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Science and Industry Endowment Fund's internal control;
- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Trustee;
- conclude on the appropriateness of the Trustee's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Science and Industry Endowment Fund's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Science and Industry Endowment Fund to cease to continue as a going concern; and
- evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

I communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

Australian National Audit Office

Brandon Jarrett

Senior Executive Director

Delegate of the Auditor-General

Canberra

4 August 2020

SCIENCE AND INDUSTRY ENDOWMENT FUND

STATEMENT BY TRUSTEE AND CHIEF FINANCE OFFICER OF COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION (CSIRO) AS SERVICE PROVIDER TO THE SCIENCE AND INDUSTRY ENDOWMENT FUND

In our opinion, the attached financial report for the year ended 30 June 2020 has been prepared based on properly maintained financial records and in accordance with Australian Accounting Standards and other mandatory financial reporting requirements in Australia, and gives a true and fair view of the financial position of the Science and Industry Endowment Fund as at 30 June 2020 and of its performance for the year then ended.

In our opinion, at the date of this statement, there are reasonable grounds to believe that the Science and Industry Endowment Fund will be able to pay its debts as and when they become due and payable.

Larry Marshall

Trustee of the Science and Industry Endowment Fund

4 August 2020

Tom Munyard

Chief Finance Officer of CSIRO as service provider to the Science and Industry Endowment Fund

4 August 2020

SCIENCE AND INDUSTRY ENDOWMENT FUND

STATEMENT OF COMPREHENSIVE INCOME

For the period ended as at 30 June 2020

	Notes	2020	2019
		$	$
EXPENSES			
Scientific research grants	1	**11,546,425**	25,609,609
Service fee under services agreement with CSIRO		**578,064**	340,189
Audit and Bank fees		**15,570**	15,500
Other fees		**3**	398
Total expenses		**12,140,062**	25,965,696
LESS:			
REVENUE			
NICTA Gift	2	**5,000,000**	20,000,000
Metcalf bequest		**-**	1,037,633
CSIRO Gift	2	**5,000,000**	-
Interest	3	**1,139,994**	2,001,919
Total revenue		**11,139,994**	23,039,552
Net profit/ (deficit)		**(1,000,068)**	(2,926,144)
Other comprehensive income		-	-
Total comprehensive loss		**(1,000,068)**	(2,926,144)

The above statement should be read in conjunction with the accompanying notes.

SCIENCE AND INDUSTRY ENDOWMENT FUND

STATEMENT OF FINANCIAL POSITION

For the period ended as at 30 June 2020

	Notes	2020	2019
		$	$
ASSETS			
Current assets			
Cash and Cash Equivalents	4	**64,603,883**	65,017,563
Interest receivable	5	**428,189**	793,925
GST receivable	5	**36,834**	1,423,500
Total assets		**65,068,906**	67,234,988
LIABILITIES			
Current liabilities			
Payables			
Accrued grants payable	6	**-**	1,043,744
Shared service fee payable	6	**-**	122,270
Accrued audit fee	6	**15,500**	15,500
Total payables		**15,500**	**1,181,514**
Total liabilities		**15,500**	1,181,514
Net assets		**65,053,406**	66,053,474
EQUITY			
Contributed equity		**200,000**	200,000
Retained surplus		**64,853,406**	65,853,474
Total equity		**65,053,406**	66,053,474

The above statement should be read in conjunction with the accompanying notes.

SCIENCE AND INDUSTRY ENDOWMENT FUND

STATEMENT OF CHANGES IN EQUITY

For the period ended as at 30 June 2020

	Retained Surplus		Contributed Equity		Total Equity	
	2020	2019	**2020**	2019	**2020**	2019
	$	$	**$**	$	**$**	$
Opening Balance	**65,853,474**	68,779,618	**200,000**	200,000	**66,053,474**	68,979,618
Net profit/(deficit)	**(1,000,068)**	(2,926,144)	**-**	-	**(1,000,068)**	(2,926,144)
Closing Balance	**64,853,406**	65,853,474	**200,000**	200,000	**65,053,406**	66,053,474

The above statement should be read in conjunction with the accompanying notes

SCIENCE AND INDUSTRY ENDOWMENT FUND

CASH FLOW STATEMENT

For the period ended as at 30 June 2020

	Notes	2020	2019
		$	$
OPERATING ACTIVITIES			
Cash received			
NICTA Gift		**5,000,000**	20,000,000
Metcalf bequest		**-**	1,037,633
CSIRO Gift		**5,000,000**	-
Interest received		**1,505,730**	1,910,641
GST credits received		**2,717,266**	1,264,219
Total cash received		**14,222,996**	24,212,493
Cash used			
Payments to grantees		**13,992,355**	27,022,452
Other payments		**644,321**	353,316
Bank fees paid		**-**	398
Total cash used		**14,636,676**	27,376,166
Net cash provided/(used) by operating activities	7	**(413,680)**	(3,163,673)
Net increase/(decrease) in cash held		**(413,680)**	(3,163,673)
Cash at the beginning of the reporting period		**65,017,563**	68,181,236
Cash at the end of the reporting period		**64,603,883**	65,017,563

The above statement should be read in conjunction with the accompanying notes

SCIENCE AND INDUSTRY ENDOWMENT FUND

NOTES TO AND FORMING PART OF THE FINANCIAL REPORT

For the period ended as at 30 June 2020

Overview

The Science and Industry Endowment Fund (referred to as "the Fund") was established under the *Science and Industry Endowment Act 1926* with the Trustee of the Fund being the CSIRO Chief Executive and is a not-for-profit entity. An appropriation of 100 000 pounds was received at the time the Fund was established. The principal activity of the Fund is to provide assistance to persons engaged in scientific research and in the training of students in scientific research.

In October 2009 the Minister for Innovation, Industry, Science and Research announced a gift of $150 million to be donated by CSIRO to the Fund. The gift is intended to be used for scientific research for the purposes of assisting Australian industry, furthering the interests of the Australian community or contributing to the achievement of Australian national objectives. The gift was made subject to the terms of a Deed of Gift between the Trustee and CSIRO dated 15 October 2009. In June 2018 and June 2020, the CSIRO made a further gift of $10 million and $5 million, respectively, to the Fund. These gifts were also made subject to the terms of the Deed of Gift between the Trustee and CSIRO dated 15 October 2009. The total cash payments made in 2019-20 under the Deed of Gift were $4,109,348 (GST exclusive).

In June 2017, the NSW Government acting through the NSW Department of Industry provided a $25 million endowment to SIEF to create the NSW Generation STEM Program. The program will be delivered over a 10-year period and will implement activities including research, to increase the supply of STEM (science, technology, engineering and mathematics) skilled labour to meet the current and future needs of New South Wales. The total cash payments made in 2019-20 under the NSW Endowment were $97,434 (GST exclusive).

In November and December 2018, National ICT Australia Limited (NICTA), a controlled entity of CSIRO, provided two gifts to SIEF in the total amount of $20m to fund the Future National ICT Industry Platform Program. A further $5m was provided to SIEF by NICTA in December 2019. The program is a scale of research activities and projects that address challenges in the field of information and communications technology (ICT) and it is intended that the outcomes from the Program will benefit Australia by helping create new Australian technology-based industries and/or applied technology platforms that can reach global scale. The total payments made in 2019-20 under the Future National ICT Industry Platform Program were $9,099,291 (GST exclusive).

In April 2019, SIEF received a bequest from the estate of the late David Ross Metcalf for $1 million. The Trustee determined to use the bequest for industry/research engagement programs. The funds were all expended in 2018-19. There were no cash payments in 2019-20.

In any one financial year a maximum amount of $25 million exclusive of Goods and Services Tax (GST) can be disbursed from the Fund for the CSIRO GIFT (under the Deed of Gift), NSW Generation STEM Program and the Future National ICT Industry Platform Program. The total payments made under these gifts and programs in 2019-20 were $13,306,073 (GST exclusive).

Basis of Preparation of the Financial Statements

The financial statements for the Fund are general purpose financial statements and are required by:

- Section 10 of the *Science and Industry Endowment Act 1926.*

The financial statements have been prepared in accordance with:

- Australian Accounting Standards and Interpretations – Reduced Disclosure Requirements (Tier 2) issued by the Australian Accounting Standards Board (AASB) that apply for the reporting period.

The financial statements have been prepared on an accrual basis and are in accordance with the historical cost convention. No allowance is made for the effect of changing prices on the results or the financial position. The financial statements are presented in Australian dollars and values are rounded to the nearest dollar unless otherwise specified.

Key Judgements and Estimates

The accounting policies are set out below. Within the current financial year, there were no significant management judgements or estimates used in the preparation of the financial statements.

New Australian Accounting Standards

All new/revised/amending standards and/or interpretations that were issued prior to the signing of these statements and applicable to the current reporting period were adopted by the Science and Industry Endowment Fund. This includes the following new amended standard:

Standard/Interpretation	Nature of change in accounting policy
AASB 2016-8 Amendments to Australian Accounting Standards – Australian Implementation Guidance for Not-for-Profit Entities and AASB 1058 Income of Not-For-Profit Entities	AASB 2016-8 and AASB 1058 became effective 1 July 2019. AASB 1058 is relevant in circumstances where AASB 15 does not apply. AASB 1058 replaces most of the not-for-profit (NFP) provisions of AASB 1004 Contributions and applies to transactions where the consideration to acquire an asset is significantly less than fair value principally to enable the Fund to further its objectives, and where volunteer services are received. The details of the changes in accounting policies are disclosed below.

SCIENCE AND INDUSTRY ENDOWMENT FUND

NOTES TO AND FORMING PART OF THE FINANCIAL REPORT

For the period ended as at 30 June 2020

Application of AASB 1058 Income of Not-For-Profit Entities

The Fund adopted AASB 1058 using the modified retrospective approach. Accordingly, the comparative information presented for 2019 is not restated, that is, it is presented as previously reported under the various applicable AASBs and related interpretations.

Under the new income recognition model the Fund shall first determine whether an enforceable agreement exists and whether the promises to transfer goods or services to the customer are 'sufficiently specific'. If an enforceable agreement exists and the promises are 'sufficiently specific' (to a transaction or part of a transaction), the Fund applies the general AASB 15 principles to determine the appropriate revenue recognition. If these criteria are not met, the Fund shall consider whether AASB 1058 applies.

In terms of AASB 1058, the Fund is required to recognise volunteer services at fair value if those services would have been purchased if not provided voluntarily, and the fair value of those services can be measured reliably.

Events after the Reporting Period

The Trustee is not aware of any other significant events occurring after the reporting date that could impact on the financial report.

Taxation

The Fund is exempt from all forms of taxation except Goods and Services Tax ('GST').

Note 1 Scientific Research Grants

	2020	2019
	$	$
Future National ICT Industry Platform Program	**7,694,540**	9,333,057
Research Infrastructure Investment	**990,000**	6,615,000
Special Research Program	**-**	1,440,000
Promotion of Science Program - Scholarships and Fellowships	**607,848**	2,810,785
Experimental Development Program	**2,254,037**	3,010,767
NSW Endowment Grant	**-**	2,000,000
Research Project Grants	**-**	400,000
Total	**11,546,425**	25,609,609

The Fund is a subsidiary entity of the Commonwealth Scientific and Industrial Research Organisation (CSIRO). For the 2019-20 financial year, the Fund has recognised $11.5m in grant expenses as transferred directly to CSIRO to support scientific research and infrastructure projects within CSIRO and/or collaborative projects with external organisations (2018-19: $25.6m).

Note 2 NICTA and CSIRO Gifts

The $5m gifts received from both NICTA and CSIRO are to be used to further SIEF's objectives, where the consideration to acquire an asset was significantly less than fair value. The cash received is recognised as a financial asset under AASB9 *Financial Instruments* as highlighted in paragraph 8 of AASB1058.

Note 3 Interest Revenue

Interest revenue is recognised using the effective interest method as set out in AASB 9 *Financial Instruments.*

SCIENCE AND INDUSTRY ENDOWMENT FUND

NOTES TO AND FORMING PART OF THE FINANCIAL REPORT

For the period ended as at 30 June 2020

Note 4 Cash and cash equivalents

	2020	2019
	$	$
Cash at bank	**14,118,883**	3,878,631
Term deposits	**50,485,000**	61,138,932
Total	**64,603,883**	65,017,563

Cash and cash equivalents include cash on hand and demand deposits in bank accounts with an original maturity of twelve months or less that are readily convertible to known amounts of cash and subject to insignificant risk of change in value. Cash is recognised at its nominal amount.

Note 5 Trade and other receivables

	2020	2019
	$	$
Interest receivable	**428,189**	793,925
GST receivable	**36,834**	1,423,500
Total receivables	**465,023**	2,217,425
Less impairment loss allowance	**-**	-
Total trade and other receivables	**465,023**	2,217,425

Trade receivables are financial assets held for collecting the contractual cash flows of the asset, where the cash flows are solely payments of principal and interest that are not provided at below-market interest rates. They are subsequently measured at amortised cost using the effective interest method adjusted for any loss allowance.

Note 6 Accrued Expenses

	2020	2019
	$	$
Grants Payable	**-**	1,043,744
Service Fee	**-**	122,270
Audit Fee	**15,500**	15,500
Total	**15,500**	**1,181,514**

Note 7 Cash Flow Reconciliation

	2020	2019
	$	$
Reconciliation of operating surplus to net cash from/(used by) operating activities:		
Operating surplus/(deficit)	**(1,000,068)**	(2,926,144)
Changes in assets and liabilities		
(Increase)/decrease in receivables	**1,752,402**	(1,315,724)
Increase/(decrease) in payables	**(1,166,014)**	1,078,195
Net cash from/(used by) operating activities	**(413,680)**	(3,163,673)

SCIENCE AND INDUSTRY ENDOWMENT FUND

NOTES TO AND FORMING PART OF THE FINANCIAL REPORT

For the period ended as at 30 June 2020

Note 8 Contingent Assets and Liabilities

No contingent assets or liabilities existed as at 30 June 2020 (2019: nil).

Note 9 Related Party Disclosures

The fund is a wholly controlled subsidiary of CSIRO. The trustee is the Chief Executive Officer of CSIRO who is remunerated through CSIRO and not paid an additional salary for his role as trustee of the fund. There were no transactions during the reporting period between the trustee and the fund. Related parties to this entity other than the trustee are other Australian Government entities.

Significant transactions with related parties can include the payment of grants, the purchase of goods and services. In considering relationships with related entities, and transactions entered into during the reporting period by SIEF, it has been determined that there are no related party transactions required to be separately disclosed. Grants are awarded based on assessment against a set of established selection criteria prior to approval. All eligible applications are assessed equally.

Note 10 Schedule of Commitments

The below table shows the monies SIEF is committed to pay on its executed grant funding agreements as at 30 June 2020, subject to grantees meeting funding milestones.

	2020	2019
	$	$
BY TYPE		
Grants commitments payable	**38,557,048**	34,639,956
GST receivable on grants payable	**(3,505,186)**	(3,149,087)
Total net commitments by type	**35,051,862**	31,490,869
BY MATURITY		
Grant commitments payable		
One year or less	**13,270,964**	11,163,299
From one to five years	**18,851,084**	15,831,657
More than five years	**6,435,000**	7,645,000
Total grants payable	**38,557,048**	34,639,956
GST commitments receivable		
One year or less	**(1,206,451)**	(1,014,845)
From one to five years	**(1,713,735)**	(1,439,242)
More than five years	**(585,000)**	(695,000)
Total commitments receivable	**(3,505,186)**	(3,149,087)
Net commitments by maturity	**35,051,862**	31,490,869

SCIENCE AND INDUSTRY ENDOWMENT FUND

NOTES TO AND FORMING PART OF THE FINANCIAL REPORT

For the period ended as at 30 June 2020

Note 11 Financial Instruments

	2020	2019
	$	**$**
Categories of financial instruments		
Financial assets under AASB 9		
Financial assets at amortised cost		
Cash and cash equivalents	64,603,883	65,017,563
Interest receivable	428,189	793,925
GST receivable	36,834	1,423,500
Total financial assets at amortised cost	**65,068,906**	**67,234,988**
Total financial assets	**65,068,906**	**67,234,988**

	2020	2019
	$	$
Financial liabilities		
Financial liabilities at amortised cost		
Grants payable	-	1,043,744
Shared service fee payable	-	122,270
Accrued audit fee	15,500	15,500
Total financial liabilities at amortised cost	**15,500**	**1,181,514**
Total financial liabilities	**15,500**	**1,181,514**

Function 1.3: Manage funding directed to industrial scientific research activities, commercialisation of technologies and assistance to industry through research collaboration and capacity building

Our key activities for Function 1.3 contributed to our strategic focus areas by the:

- CSIRO Innovation Fund
- Science and Industry Endowment Fund (SIEF).

We delivered on this function by:

- CSIRO Innovation Fund, managed by Main Sequence Ventures, investment in start-up and spin-out companies, existing SMEs engaged in translation of research, and company formation opportunities to support business growth and a culture of innovation and entrepreneurship in Australia. Read more about the Innovation Fund on page 24.
- SIEF grants to science and scientists for the purposes of assisting Australian industry, furthering the interests of the Australian community and contributing to solving national challenges. Read more about SIEF on page 193.

Our efforts this year contributed to us delivering towards our outcome (see Table 3.7):

- Australian industries maintain and improve their competitiveness through the application of new technologies and solutions.

Table 3.7: Summary of our performance for managing funding directed to industrial scientific research activities

PERFORMANCE MEASURES SOURCE: 2019–20 CORPORATE PLAN	TARGET	RESULT
Strategic investments by SIEF in scientific research to address national challenges for Australia		
Technologies receiving ongoing commercialisation support from venture capital or industry sources one year after completion of the SIEF Experimental Development Program	Evidence of ongoing support and impact as measured through case studies	**Achieved**: Hydrogen Generation project completed – has ongoing commercialisation support from industry.
SIEF NSW Generation STEM program participant awareness of STEM careers and pathways in NSW	7% increase on the 2018–19 baseline	**Not achieved**: program behind schedule and result not yet demonstrated.
Impact evidence in narratives and evaluations demonstrating SIEF-funded challenges are creating new Australian technology-based industries and/or applied technology platforms that can reach global scale	Evidence of impact as measured through case studies	**Achieved**: Boat to Plate project completed – technology has high potential for impact and to reach global scale.

Analysis of performance

The SIEF Experimental Development Program

The Hydrogen Generation project provided financial support to develop a solution to convert ammonia to high-purity hydrogen at, or near, the point of use.

The support from SIEF was instrumental in realising the value-proposition of this work and facilitated the translation of knowledge to a commercial solution. The technology was scaled-up and demonstrated its potential as the critical last step in ammonia-based hydrogen distribution. The success of the project led to a collaboration with Fortescue Metals Group Ltd under a five-year agreement to fund and support our technologies, including the next stage of this work where we will build a pilot-scale generator capable of producing hydrogen at approximately 200 kilograms per day.

The Federal Government has recognised the role of hydrogen in a clean energy industry and launched the National Hydrogen Strategy to turn Australia's hydrogen industry into a global export by 2030. With the support of SIEF, the Hydrogen Generation Experimental Development Project is contributing to the Australian national objectives and assisting Australian industry. Read more on pages 196 and 197.

Generation STEM program

Generation STEM is a 10-year initiative to attract, support and retain New South Wales (NSW) students in STEM education and skilled careers.

The first program, the STEM Community Partnerships Program, was launched in mid-2019 and has progressed as planned since then. During 2019–20, two Western Sydney councils signed up for three years and one for a six-month pilot – a total of 21 schools and 293 students. Even though the 2020 program has been significantly impacted by COVID-19, seven schools in two councils are taking part this year.

However, as a consequence of earlier delays, the Generation STEM program's overall progress and scale to date is less than originally intended. Therefore, the outcomes have not yet been realised and sufficient data is not yet available to determine an accurate measure of change. Data collected to date will be used to establish a baseline for the Community Partnerships Program for the future.

As Generation STEM gains momentum, we hope to accelerate STEM literacy and career opportunities for students through higher levels of engagement with industry and local government, and an increased number of work-ready students transitioning into the local STEM workforce.

Creating new Australian technology-based industries

The SIEF-funded Boat to Plate project developed a prototype automated species identification system, embedded within a tagging and data management system, that addresses the traceability of seafood throughout the supply chain. The innovative product offers a convenient, cost- and time-effective solution for seafood producers to monitor and manage their products. Implementing the technology will lead to enhanced seafood supply chain management, traceability and food security for industry, wholesalers and retailers that purchase Australian seafood products.

Traceability, sustainability and supply chain integrity are becoming increasingly important as consumers demand to know the provenance of their food, and if it has been sustainably harvested. Food producers and suppliers want to guarantee that their product meets consumer expectations and that the integrity of their supply chain is protected. The Australian Government wants to protect the integrity of domestic products in the global market and maintain its reputation for high-quality food products.

Boat to Plate presents an opportunity to generate billions of dollars of cost-savings associated with market inefficiencies and seafood wastage. The technology also offers significant potential for global application. It is anticipated that it will be commercialised, as industry has shown significant interest in the prototype. Read more on pages 197 and 199.