

CEO REPORT

JULY 2020



CEO WELCOME

Welcome to the July edition of the Future Battery Industries CRC newsletter.

Like all of you, affected by the current pandemic and economic downturn, we have adapted to new ways of getting things done and fostering collaboration across our community.

Our head office team is largely back working together and remotely when needed, including with our research program leads in Brisbane and Melbourne.

While recognizing that in some cases participants' capacity to support projects has been impacted, we are seeking to accelerate project development, approvals and contracting to deliver on the hard work of the past year.

We have now completed a registration of interest process in the initial research portfolio of 16 proposed projects to guide this work.

The Board met twice in June to approve four new projects from this portfolio. More information on our project development portfolio is included [here](#).

We have also begun to release the first of several scene setting research project reports to help promote our activities.

These cover global supply chain strategies, Li1-ion battery cathode manufacture and a state of play for Australian battery industries.

We have worked with the Board on a strategic framework which provides a roadmap for our direction and investment priorities over the six-year term of the CRC. The executive is developing the supporting action programs.

The Board has also completed establishment of its advisory committees:

- The Research Implementation Advisory Committee chaired by Mark Woffenden
- The Commercialisation Committee chaired by Bruce Godfrey
- The Audit & Risk Committee chaired by Sarah Ryan
- The Nomination & Remuneration Committee chaired by Graeme Hunt

We look forward to working with our partners to approve further research projects and to embed high quality education, commercialisation and advocacy activities in this platform.

Thank you for your ongoing support.

Stedman Ellis
Chief Executive Officer.

“We are seeking to accelerate project development, approvals and contracting to deliver on the hard work of the past year.”

KEY EVENTS

In March this year, we were fortunate to hold a major participants summit with national and international participants, a face to face meeting of the full Board, and the official launch of the FBICRC by the Hon. Karen Andrews MP, Minister for Industry, Science and Technology.

That was before social distancing, travel bans and working from home became the norm. It was an important opportunity to strengthen the personal relationships that help underpin our work together.

At the March summit, participants gained an overview of our progress and our proposed projects, and heard addresses from the WA Minister for Mines and Petroleum, and Energy, the Hon Bill Johnston MLA, Deputy Vice Chancellor Research Chris Moran, Minister Johnston, FBICRC Chairman Tim Shanahan and Board advisor Christina Lampe-Onnerud.

The presentations from the day are [here](#).

We held a series of online presentations and workshops on Battery supported mine electrification, in conjunction with VCI in June. The workshops have provided valuable inputs for research prioritisation. A publicly available report State of Play: Electrification and future events will be advertised on our website.

We have begun to return to more limited face-to-face meetings with easing of COVID 19 restrictions in Western Australia, and look forward to working with other participants in this way when travel becomes practical.

COMMONWEALTH AGREEMENT

At foundation, we represent a community of 48 industry, government and research participants who have executed agreements with the CRC and invested time and money in getting us to this point.

We have been working closely with the Commonwealth in dealing with the impacts of COVID-19 on our activities - mainly delays in research activities due to challenges with access to people, resources, facilities and equipment

A variation submission to our Commonwealth Grant Agreement must be lodged by end of July to address changes to our participant community and any impacts on milestones.



With over 100 people representing 60 organisations, the Participant Summit provided an overview of the FBICRCs progress and achievements, current projects under development and shared a vision for the CRC.



Minister Karen Andrews (second from right) at the launch of the FBICRC with Board members Mark Woffenden, Graeme Hunt, Sarah Ryan and FBICRC Board Chair Tim Shanahan.



Sponsors meeting for the Cathode Precursor Pilot Plant project in Perth in June.

RESEARCH PROGRAM – SCENE SETTING PROJECTS

Governance of battery value chains: security, sustainability and Australian policy options

In May, the FBICRC released this report. It was produced by the Perth USAsia Centre and University of Western Australia, and funded by the Minerals Research Institute of WA (MRIWA).

The report is timely given the broader discussion in Australia around supply chain security. The full report is available [here](#) and a short video with Perth USAsia Centre Research Director Dr Jeffrey Wilson on [LinkedIn](#).

Key findings from the report include:

- Australian governments and businesses have identified building the battery sector as a major national economic imperative.
- Australia's geological endowments, trusted governance framework and strong international relationships make it an ideal partner to develop more resilient battery value chains.
- Australia's economic opportunity lies in leveraging its competitive advantages to 'move along the value chain' from a mining to processing role.
- Policy design by governments, and project development by businesses, must be informed by governance features and needs of global battery value chains.
- A value-chain informed strategy should focus on building mid-stream capacity through international partnerships with key global players.

Feasibility of Western Australian Cathode Precursor Industry

In July, the Hon Bill Johnston MLA WA Minister for Mines and Petroleum; Energy; Industrial Relations released this report.

It provides a roadmap for the Cathode Precursor Pilot Plant project – a flagship project of the CRC in enabling further value-adding to Australian battery minerals and chemical products.

It has been delivered by the Queensland University of Technology in collaboration with Hatch Engineering and Curtin University. It was funded by MRIWA.

Curtin will lead the follow up project to establish a Cathode Precursor pilot plant at CSIROs Waterford facility.

Key findings from this report include:

- The global automotive lithium-ion battery market is projected to reach USD95.3 Billion by 2030 growing at an annualised rate of ~11%.
- The value chain supporting this growth offers opportunities given WA's endowment of key mineral resources and emerging technical grade battery chemical industry.
- This report provides a state-of-the-art technical assessment on the process to establish precursor manufacture in WA. It confirms its technical and commercial feasibility as a foundation for laboratory and pilot scale testing.
- The project will seek to prove the viability of the production of ultra-stable NCM/NCA cathode materials with a clear path to commercialisation.

Further scene setting reports

Further scene setting reports related to establishing a base line state of play of battery industries in Australia and demonstrating market advantage for Australian battery minerals through certification are expected to be released shortly.

RESEARCH PROGRAM – PROJECT APPROVED AND UNDER DEVELOPMENT

During April, the CRC commenced a registration of interest process with our participants to map the interests and allocation of industry participant contributions across the entire suite of projects under development. So far almost \$13M cash has been allocated. Industry participants who have yet to deem an allocation of their payments to the CRC to particular projects are being urged to finalise this feedback as it is critical to achieving the approval and contracting of projects. The process has allowed the CRC to gain a deeper understanding of our participants interests and where projects may need further development to increase industry support. This has also provided participants and project teams a view of all projects under development.

The CRC is in the final stages of contracting for the first groups of approved projects. While there has been delays due to impacts on CRC participants from the COVID-19 pandemic, the CRC remains committed to commencing our research program as soon as possible and supporting the recovery of the Australian economy through the development of battery industries. It aims to have the majority of funds committed, contracted and projects underway within six months.

A list of all projects in our portfolio and a brief bio of the project lead for each on page 5.

EDUCATION AND TRAINING UPDATES

Vocational workforce skills

South Metropolitan TAFE has commenced a project to identify the national vocational skills gaps for future battery industries and develop a workforce development strategy. A Steering Group comprising national stakeholder organisations will be established to guide and inform the project.

Profiles of vocational jobs and skills are being compiled for each future battery industry from a literature review, environmental scan and consultations to date. These will then be validated by industry subject matter experts before being used in interviews with employers and stakeholders to gather information about current and future skill needs.

For further information and to participate in the study please contact Nhi Do, Manager Research and Workforce Strategy, South Metropolitan TAFE on (08) 9239 8142 or nhi.do@smtafe.wa.edu.au.

ClimateLaunchpad

FBICRC has partnered with Climate-KIC Australia to ensure a focus on emerging battery technologies in Climate Launchpad, the world's largest green ideas competition. The program aims to assist entrepreneurs and innovators to scale and commercialise their ideas. Selected participants start off their rigorous training with an intensive Boot Camp followed by a series of coaching sessions to prepare for their state finals. Those teams who progress through the state finals, national finals and regional finals - will have an opportunity to pitch in front of a global audience at the virtual Global Grand Final, among the most innovative entrepreneurs from over 55 countries, as well as investors, media and industry leaders.

Eight battery related ideas were received, which will be assessed and go through to the state finals.

STRATEGIC PLAN

The FBICRC board and executive have developed a 2020 - 25 strategic plan as a roadmap for our direction and investment priorities.

The strategic plan identifies four priority objectives:

1. Leverage Australia's minerals and mining advantage into battery materials innovation and production
2. Accelerate uptake of battery technologies in Australia
3. Advance capability and capacity in battery materials and precursor manufacturing
4. Facilitate Australian battery industry development

The plan is not limited to our commitments to the Australian Government CRC Program and also seeks new opportunities and new partners that can strengthen our role in growing investment and employment in battery industries in Australia.

The plan was informed by interviews with participants and a workshop with the Board. The executive is now working on action plans to deliver on the plan.

2020 KEY DATES

**8
July**

International webinar and panel discussion with Perth USAsia Centre

**18-19
Aug**

AUSIMM Lithium and Battery Metals Digital Conference

**18
Sept**

Meeting of the FBICRC Board

**TBC
Nov**

AGM and Participant Summit

**14
Dec**

Meeting of the FBICRC Board

INITIAL RESEARCH PORTFOLIO AND PROJECT LEADS

Approved projects:

- A National Battery Testing Centre
- Electrochemical Testing of Li ion Battery Materials in Standard Cell Formats
- Super Anode Materials
- Key Techno Economic Solutions to Drive Mass Uptake of Australian Manufactured Systems
- Demonstrating market advantage through certification and life cycle analysis

Proposed stage 1 approved to further develop project scope:

- Cathode Precursor Production Pilot Plant
- Innovative Nickel and Cobalt Extraction Technologies
- Enhancing Lithium Extraction
- Process Legacy (Waste Reduction)

Proposals still under development:

- Chemical Processing of Vanadium and Manganese Ores for Battery Materials
- Future Electrolyte Systems
- Battery Material Provenance
- Recycling, Reuse and Repurposing of Spent Batteries
- Australian Battery Industry Hubs
- Whole of Systems Approach for Assessment of Battery Investment Options
- Battery Supported Mine Electrification

Research Program

Our research portfolio is based on extensive consultation with industry. It will be supported by education, incubator, technology transfer, commercialisation, education and training activities embedded in the projects. The portfolio has three interdependent streams: industry development; resources, processing and recycling; and manufacturing, testing and deployment. The research will also seek to establish a leadership position for Australia in environmental strategies in battery industries.

Program 1: Industry Development

Program lead Jo Staines jo.staines@unimelb.edu.au

Demonstrating market advantage through certification and life cycle analysis for Australian battery materials

A quantified environmental basis to ensure traceable, sustainable production of Australian battery minerals, metals and materials.



Damien Giurco

PROJECT LEAD

Damien Giurco is Professor of Resource Futures at the Institute for Sustainable Futures, University of Technology Sydney. He holds Bachelor degrees in Science and Chemical Engineering from The University of Melbourne and a PhD from The University of Sydney on Life Cycle Assessment in the resources sector. He leads a dynamic team of researchers at UTS working to create change towards sustainable futures in partnership with government, industry and the community. He has published widely in academic journals, including Nature. Damien has undertaken research funded by Cooperative Research Centres and industry, such as IGO, Newcrest, Rio Tinto and by local, state and Australian governments, for example on international best practice in circular economy as input to the development of the NSW Circular Economy Policy Statement. Damien has received the UTS Vice-Chancellor's Award for Research Excellence through Partnership and the Institute Service Award from the Australasian Institute of Mining and Metallurgy, after establishing their Community and Environment Society.

Damien chaired the energy storage working group of the Australian Battery Recycling Initiative. He is currently Editor-in-chief for the journal Resources, chairs the advisory group for Ewaste Watch and leads a theme on Battery Supply Chain Integrity within the Future Battery Industries Cooperative Research Centre.

Battery Material Provenance

Ethically sourced, high-grade battery material provenance authentication for the next generation battery supply market.



Dr. Prokopi Vasilyev

PROJECT LEAD

An experimental petrologist and mineralogist with cross-functional expertise in analytical geochemistry and equilibrium thermodynamics. Prokopi is a highly skilled user of a broad range of high-pressure experimental, optical and analytical equipment. He also possesses experience in laboratory and project management, including the latest projects:

- Implementation of Australian Virtual Experimental Laboratory Node establishment at Curtin University (ARC LIEF Project).
- Lead researcher in “Evaluation of the source of diamonds and other kimberlite minerals” project with Geocrystal Ltd. and Australian Government (Innovation Connections).

Whole of Systems Approach for Assessment of Battery Investment Options

A software platform for improved decision-making of investment and operation of batteries.



Dr. Fanny Boulaire

PROJECT LEAD

As a research fellow in the Science and Engineering Faculty at Queensland University of Technology (QUT), Dr Fanny Boulaire applies her knowledge in analytics, modelling, and software development to research projects seeking answers to a variety of challenges in the energy sector.

Fanny has developed her technical expertise over twenty years, since she started her undergraduate studies in mathematics, modelling and computer science. Her knowledge deepened as she worked as a project officer at the Commonwealth Scientific and Industrial Research Organisation (CSIRO), in the domains of building and construction, bushfire and water asset management.

In March 2011, Fanny joined QUT to work on a collaborative research project between QUT, two Australian and three German universities, and Ergon Energy. The project investigated the impact of introducing renewable energy sources on electricity grids.

Australian Battery Industry Hubs

Facilitating regional synergy and investment around downstream battery industry development.

This project is under development and will initially be led by the FBICRC executive to scope and confirm sufficient industry support before proceeding with development of a full project proposal.

Program 2: Resources, Processing and Recycling

Program lead Mark Aylmore mark.aylmore@curtin.edu.au

Process Legacy

To maximise economically viable co-products and minimise repository use for mining and processing operations, all within a regulatory acceptable framework.



Prof. Arie van Riessen

PROJECT LEAD

As a materials physicist, Professor Arie van Riessen specialises in materials microstructural analysis and has researched alumina-zirconia ceramics, minerals and geopolymers. He has collaborated with Emirates Global Alumina (EGA) to research use of their potential by-products to manufacture geopolymers that can result in low carbon footprint and enhance resistance to fire and acids.

Arie has been an active researcher in the field of Geopolymers and was Leader of the Geopolymer Research program concurrently with the position of Director of the Centre for Materials Research at Curtin. The geopolymer research resulted in collaboration with the Mongolian Academy of Science, Bologna University and the Korean Institute for Geoscience and Mineral Resources.

Previously Arie held the positions of Dean of Research and Development for the Division of Engineering, Science and Computing and Head of the Department of Applied Physics.



Evan Jamieson

PROJECT LEAD

A Professor of Research at Curtin University, John de Later Centre, Evan is an application focused Program Manager and Senior Research Scientist with proven success in fundamental research, project management and product development dealing with Australian and International clients.

Evan spent over 20 years in Alcoa's Technology Delivery Group (TDG), supporting Alcoa's worldwide refineries to achieve global leadership in Bayer process technology. TDG is the global leader in bauxite residue R&D and is strongly focused on the production of new value-added products from residue.

From 2007 - 2010, Evan was seconded to the Centre for Sustainable Resource Processing, a Cooperative Research Centre program aimed at improving the efficiency and sustainability of the Mining Resource Industry.

Innovative Nickel and Cobalt Extraction Technologies

Economical alternative leach technologies for extraction of nickel and cobalt from waste streams and operation of batteries



Dr. Elsayed Oraby

PROJECT LEAD

Elsayed is a Senior Research Fellow in the WA School of Mines with 17 years' experience in extractive metallurgy (industry and academic). Dr Oraby holds a PhD in Extractive Metallurgical Engineering (Hydrometallurgy) of using eco-friendly lixiviants for gold and copper leaching. He is the co-inventor of the novel processes using alkaline glycine for the extraction and processing of base and precious metals and has been the chief investigator in more than 20 research projects in gold and base metals industry, co-authored many journal papers, is a named inventor for 4 patents families, co-authored 15 conference papers and co-supervised 6 PhD students. Dr Oraby's research focus is on the hydrometallurgical processing of nickel, cobalt, copper, lithium and precious metals from ores, concentrates and waste materials, including electronic and battery scrap.

Enhancing Lithium Extraction

Improved technology for the extraction of lithium minerals and refining of battery grade lithium chemicals in Australia.

Chemical Processing of Vanadium and Manganese Ores for Battery Materials

Developing new and improved processes for vanadium and manganese extraction and purification, and the optimisation of vanadium bearing electrolytes of Vanadium Redox Flow Batteries (VRFBs).



Prof. Aleks Nikoloski

PROJECT LEAD

Professor Aleks Nikoloski is an expert in the electrochemistry of leaching and the reduction processes used in the hydrometallurgical treatment of metals and minerals and is the Academic Chair of Extractive Metallurgy at Murdoch University.

Professor Nikoloski holds a PhD in Metallurgical Engineering and has over twenty years of teaching and research experience in Extractive Metallurgy, as well as several years' experience in industry. During his time in industry, Aleks conducted cutting-edge research, leading several research projects some of which have led to established commercial operations.

He has significant experience in the metallurgical process development using pilot plant scale test work and investigates the process dynamics of metallurgical processes for the treatment of non-ferrous metals, in particular nickel, cobalt, copper, gold and the platinum group metals, as well as lithium, manganese and vanadium.

Cathode Precursor Production Pilot Plant in Western Australia

Increasing the value chain of battery manufacturing in Western Australia by developing Pilot Plant and establishing technical and processing capabilities to manufacture nickel-rich cathode active material precursors.



Dr. Mark Aylmore

PROJECT LEAD

Dr Aylmore is a Senior Research Fellow at the John de Laeter Centre, Curtin University, and currently managing several critical mineral ore assessment projects. He is a Fellow of the Australasian Institute of Mining and Metallurgy. Mark has extensive technical experience in extractive metallurgy, process mineralogy, mineral processing and process engineering, including scoping through to feasibility level studies on a number of commodities. He has numerous publications and reports, including several patent lodgements. His early work established him internationally as a leading authority in the fundamentals and practical use of alternative leachates to cyanide in the gold industry.

Mark has held senior roles in managing industry and government funded projects and has worked for various international mining companies, institutions and consultancy firms over his 27 years in industry and academia.

Recycling, Reuse and Repurposing of Spent Batteries

Reduction of battery waste for a more sustainable and circular economy for Australian battery industries. The FBICRC has approached CSIRO to prepare a scene setting report.

Program 3: Manufacturing, Testing and Deployment

Program lead Prof. Peter Talbot peter.talbot@fbicrc.com.au

Establishment of the National Battery Testing Centre

To support Australia's developing battery energy storage industry it is essential to have resources to test batteries both upstream from the battery cell, providing feedback on resource development, and downstream, to test module and pack performance, and the development of safety standards.



Prof. Peter Talbot

PROJECT LEAD

Peter is a Professorial Fellow at QUT and an AQ Founders Fellow. He established QUT's Advanced Battery Facility (ABF), the first lithium ion battery pilot manufacturing facility in Australia. His expertise includes the management of skilled scientific and engineering teams in collaboration with both local and international R&D organisations to solve industrially relevant problems. He has a multi-disciplinary academic background and is regarded as a materials science expert and leader in the fields of lithium-ion batteries, nano-materials manufacture and high temperature superconductors. Professor Talbot holds numerous patents in the fields of solid-state chemistry, automated chemical manufacture and nanomaterials.

Super Anode

Developing Australian capability across the anode material value to chain to produce high power anodes.



Prof. Amanda Ellis

PROJECT LEAD

Amanda Ellis is a Professor and Head of Department of Chemical Engineering at the University of Melbourne. She graduated with a Ph.D. (Applied Chemistry) from the University of Technology, Sydney in 2003.

After two postdocs in the USA, including Rensselaer Polytechnic Institute and New Mexico State University she secured a prestigious Foundation of Research Science and Technology Postdoctoral Research Fellowship at Industrial Research Ltd (now Callaghan Innovations). In 2006 she commenced at Flinders University, South Australia as a teaching/research academic in Chemical and Physical Sciences. During this time, she became a full professor (2013), an ARC Future Fellow (2014) and acting Associate Dean of Research for the Faculty of Science and Engineering (2016). In May 2017 she joined the Chemical Engineering Department at the University of Melbourne. She has been an ARC College of Experts for the MCPE panel (2017-2019) and Board member of the Royal Australia Chemical Institute (RACI) (2016-2019). She has secured over \$20 M in funding from the ARC and non-ARC sources on projects involving novel polymer coatings, DNA nanotechnology, functionalised carbon nanotubes and graphene, nanocellulose, and plastic and biomass gasification.

Electrochemical Testing of Li-ion Battery Materials in Standard Cell Formats

Establishment of fabrication and electrochemical testing facility for lithium-ion battery materials.



Prof. Jose Alarco

PROJECT LEAD

Professor Jose Alarco (Institute for Future Environments, QUT) has been involved in R&D of battery and other nanotechnology materials for over two decades, both within academic and commercial organizations. He has co-developed and holds numerous patents in generic processes for the manufacture of nano-scale complex, metal oxides and for applications in catalysis, batteries, electronics, and other chemical/physical processes. Much of his work has involved translating manufacturing processes from lab to pilot plant scale at tonnes per week level. He has an undergraduate degree in Physics from National University of Engineering in Peru and a PhD in Materials Science from Chalmers University of Technology in Sweden.

He has been involved in collaborations with international chemical and battery companies such as BASF, Engelhard, Valence Technology, Sud Chemie, Degussa, Phostech Lithium, Lishen Battery Co and A123. He is currently a Theme Leader for Battery Safety and Security in the Future Battery Industry (FBI) CRC.

Key Techno-Economic Solutions to Drive Mass-Uptake of Australian Manufactured Battery Systems

Facilitating cost reduction throughout the battery energy management value chain for Australian battery manufacturers.



Tyrone Fernando

PROJECT LEAD

Tyrone Fernando is a Professor of electrical engineering at the University of Western Australia and leads the Power and Clean Energy research group which focusses on grid integration of clean/renewable energy sources, microgrids and energy storage systems, which are all related to modernising the electric grid. Tyrone is the Chair of Power and Energy technical committee of the IEEE Circuits and Systems Society, and have served in editorial boards of several journals related to the disciplines of power and energy. Tyrone has published extensively on topics related to electric grid modernisation with renewable energy sources and battery energy storage systems. Tyrone collaborates with Western Power on a number of projects including building an optimal electric network in the South West Interconnected System through identifying locations for stand-alone power systems with energy storage systems.

Building on the collaborative research with Western Power, Tyrone is the lead chief investigator of the research project “Microgrid Architectures for Efficient Use of Renewable Energy Sources” currently funded by the Australian Research Council under the Discovery Projects scheme. Tyrone leads or is a chief investigator in a number of other industry related research projects in energy related topics with Magellan Power, Tritium, Ultra Power Systems, GemTek, Synergy, Horizon Power, Water Corporation, and Eco Power.

Professor Fernando obtained his Bachelor of Engineering with honours and PhD degrees, both from the University of Melbourne in 1990 and 1996. He has been with the University of Western Australia since 1996 where he is currently a professor of electrical engineering. He has served as Associate Head/Deputy Head of the electrical engineering department at UWA during 2008-2010.

Future Electrolyte Systems

New electrolyte systems to improve Li-ion device performance in niche applications.



Prof. Maria Forsyth

PROJECT LEAD

Professor Maria Forsyth “FAA” (Fellow Australian Academy of Sciences), is the Deputy Director of the Institute for Frontier Materials (IFM) at Deakin University in Australia, an Ikerbasque Professor at POLYMAT in UPV and Director of an ARC Industrial Transformation Training Centre. She also is the Associate Director in the ARC Centre of Excellence in Electromaterials Science (ACES). Since 2018 she has joined POLYMAT at UPV in San Sebastian as an Ikerbasque Professor where she collaborates with Innovative Polymers group and supervises research projects related to sustainability. Specifically, she is an expert in ionic materials including ionic liquids, organic ionic plastic crystals, polymer gels and composites with applications to several areas including materials for CO₂ absorption, electrowinning of metals and energy storage. Her work has also focused on understanding the phenomenon of charge transport at metal/electrolyte interfaces and within novel electrolyte materials. She leads collaborative projects in lithium and sodium battery technologies funded through recent Australian Research Council grants. Her team collaborates very productively with colleagues within academia, CSIRO, DSTO as well as industry to design new materials and processes to control and optimise these phenomena. Specifically, her work has focused on understanding the phenomenon of charge transport at metal/electrolyte interfaces and within novel electrolyte materials. Such materials have included a range of novel ionic liquids, polymer electrolytes and plastic crystals.

Professor Forsyth is a co-author of over 550 journal and conference publications attracted more than 20000 citations.

She has served on several editorial boards and is currently senior editor for Journal of Physical Chemistry letters. She has received the Galileo Galilee award for her contributions to the Polymer Electrolyte and energy storage field and awarded to The Victorian Prize for Science and Innovation (VESKI).

Battery Supported Mine Electrification

A holistic systems approach to mine electrification with batteries deployed in stationary and mobile applications.

This project is under development and open for expressions of interest from companies, state governments and FBICRC research participants. A series of workshops held in early June in collaboration with VCI key inputs for research prioritisation and a publicly available report State of Play: Electrification.



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