



A supporting submission for Project Iron Boomerang.

**The Australian Manufacturing Industry
Senate Standing Committees on Economics**

PO Box 6100

Parliament House

Canberra ACT 2600

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1. Executive Summary

Unus is an Australian company working to enable Project Iron Boomerang (PIB) to deliver a timely and internationally significant, nation building and nation branding project. This will empower the Iron Boomerang Project to be restructured to meet the current regulatory and community expectations of 2021 and moving forward.

Unus seeks to help revitalise the Australian economy by creating a **low carbon, innovative, future-ready manufacturing revival**, building Australian prosperity through high value products, jobs and transformative technology that supports regional Australia reaching a **zero-carbon future** aligned to the Paris Agreement in the post Covid economy.

One of our central strategies is working with PIB and others regarding on-shoring and showcasing Australian manufacturing (with potential to use the Olympic Games 2032 infrastructure demands to highlight Australia's newly developed strengths in manufacturing) using locally driven global-level expertise and technology, drawing on Australia's globally competitive commodities and unlimited solar capacity to create products that are future-ready for domestic and global markets.

The bipartisan and collaborative project partners with Australian companies, to use Australian iron ore and coking coal to build new steel mills on the west and east coasts connected by an innovative rail corridor (substantially reduce carbon emissions and energy use) with a view toward green steel.

The proposed 3,300km Australian produced steel railway corridor will connect the richest iron ore deposit in the world (Pilbara) to the third richest coking coal deposits in the world (Bowen Basin) helping to put Australia on the steel map, produce steel 15-20% cheaper than imported and position **Australia globally in third position (for exported steel)**.

Unus will set a gold standard in the way projects like PIB transition from carbon neutral to green steel. This in partnership with domestic and international industry & enabled by its integrated fibre optic network. This leads to great benefits to Australian farmers and the domestic economy.

Unus has expertise in carbon sequestration that it will share with regional communities to provide regional farmers with additional income streams through carbon sink credits and supporting us collectively contribute to a zero carbon future.

Unus will work with all States, levels of government, local and remote communities to develop appropriate socially, environmentally, economically sustainable communities, to support the revitalisation, branding and nation building project that we are embarking upon. Unus has heard the concerns of mining and remote communities regarding the lack of social and economic capital that does not get built in regional communities when fly in/fly out methods are used.

Importantly, Unus supports the notion that economic prosperity is key to improving social outcomes for Aboriginal people. We are currently working to understand and facilitate the aspirations, priorities, and self-determination of Aboriginal peoples. Through relationships we seek to understand their desires and work with them to develop ways that they can benefit from, including; short and long-term employment, better health and social outcomes. We will draw on Australian best practice research on building smart city sustainable infrastructure. This will **attract and retain high quality workforces** and form high amenity long term communities that complement existing regional towns and cities and help build back a **prosperous regional Australia**.

Our expert team has extensive experience in regional Australia over many years and understands the desire for building inter-generational employment. All levels of worker are required to enable an enduring, complementary, city-type, social infrastructure (health, education & more). We plan to build highly connected communities that our initial workforce of 75,000 (more than double

over 30 years) whose families will be very happy to call home and can contribute and socialise in.

2. Introduction

Unus has been established to drive the implementation of nation building projects such as PIB, an international infrastructure project born from [Australian] EWLP Pty Ltd founders. The company has led the intellectual property, big data, research and development of a proposed 3,300km railway line that connects the richest iron ore deposits in the world (Pilbara) to the third richest coking coal deposits in the world (Bowen Basin). The rail corridor will also include a fibre optic network, the installation of a fibre optic network. The size of network enables the control of the infrastructure and capacity to support commercial telecommunication in the region by the carriers and NBN. The project includes 4km long locomotives, newly built cargo ships and multiple steel mills at each end of the railway line (ten mills in phase one). By phase three the project will position Australia as the **third largest exporter of first stage steel**. Since its conception PIB has managed to;

- on board Glencore as an investor
- on board [Qantm](#) USA as an investor
- Designed the easement and corridor
- Designed purpose built cargo ships
- Complete its pre-feasibility study
- Business case has been publicly endorsed by [Saul Estlake](#)

Unus Inc supports the establishment of Iron Boomerang in order to meet and unlock the critical success factors inside and outside of the project starting with an alignment to the Paris Agreement and UN Sustainability Development Goals. Unus is the front-facing, impact business brand that will present this project and others with its wider implications and potential to community, environment and industry first.

- Transition to Green Steel / Carbon neutral from stage one
- Sustainable communities, environment and partnerships

- Jobs, skilling and upskilling
- Revitalise agricultural lands
- Unlock downstream potential starting with new city development
- Community and industry engagement (Social licensing)
- Green fuel

3. A Manufacturing Revival

There are ten distinct ways PIB will contribute to the re-industrialisation of Australia by providing a boost in manufacturing. These include:

- Meeting increasing construction/manufacturing demand
- Increase manufacturing demand
- Communications
- Mining (over 150 active and inactive mine sites including rare earth across the line)
- Defence Industry needs
- New and advanced manufacturing including Aerospace
- Meeting sustainability goals
- Availability of cheaper Australian made steel
- Availability of cheaper electricity and sustainable fuel supplies
- Downstream opportunities from steel manufacturing, including Agriculture, attract international manufacturing operations to Australia, new city development and more.

PIB's initial construction is expected to create 75,000 jobs. The Project confirms that these jobs could be maintained for 10-15 years, with operations in the first mills commencing in two years.

Once operations reach full capacity in Phase 1 (10 mills), there will be 35,000 permanent jobs created. Each additional Phase will result in an additional 35,000 permanent jobs.

Unus is currently working on strategy with CQ University, STEM programs and others on how we can help skill and upskill direct and indirect workforces.

4. Construction

PIB is a \$AUD95B project that includes the construction of a 3,370 kms, transcontinental heavy haul railway, hauling iron ore to the east and coking coal and limestone to the west. Phase one of the project will use these raw materials to manufacture first stage steel slab in ten steel smelters, five each side of the country. The steel making capacity of each smelter will be 4.4 MTPA, or **44 MTPA in total**. The resource base of both Iron Ore and Coking Coal in Australia is sufficient to build a further three Phases of the same scale.

The construction for Phase 1 includes:

(

Item	Measure	Quantity	Cost \$Aud M	\$AudB
Railway	kms	3,370	6,426	21.62
Wagons	Number	2,500	0.14	0.44
Locomotives	Number	50	12.1	0.82
Steel Parks	Number	2	2,707.1	6.4
Steel Smelters	Number	10	4,737.4	47.3
Dock Lock Ports	Number	2	2,707.1	5.4
Class Ships	Number	55		7.43
Contingency				6.49
Total				95

The railway will be built with 68 kgs per metre case hardened rail. There are only four rolling mills in the world that make this type of railway line, one of which is Whyalla, Australia (a partner operation due to our relationship with Glencore as a shareholder).

There are 520,000 tonnes of railway line in Phase 1 of PIB. To put this in context, there are only 52,800 tonnes of structural steel in the Sydney Harbour Bridge and just 12,000 tonnes in Brisbane's Story Bridge.

It should be noted that once Phase Three of PIB commences, that the railway line will need to be duplicated, and these massive steel orders repeated.

The railway line and its associated light vehicle access road will require thousands of concrete pipes, culverts and bridging beams, providing opportunities for precast concrete **manufacturers in all States**.

PIB will create a large capacity export cement business, subsequent PIB Phases will be built with Australian cement.

The Steel Parks and Steel Smelters will require an enormous amount of structural and reinforcing steel.

PIB holds the patents and designs for the cargo ships. Unis will work with PIB to deliver the first 55 Boomerang Class Ships (BCS), these will be built in Australia, Korea and Japan. PIB believes that 25% of these ships could be built in Whyalla and or Perth and more as our Australian capacity grows in tandem with our project. .

PIB's initial locomotives, ships, and power stations will be fuelled predominantly by LNG sourced from Central Australia (cutting 50% of the greenhouse gas emissions), at least until such time as alternative energy systems for the locomotives and ships become commercially viable. Which will happen such as Cubic QED is commercially available.

The turbine engines will be connected to a standard General Electric (GE) type electric drive. This will be supplemented with battery wagons that will enable a Toyota style hybrid drive using regenerative braking to charge the batteries when braking on the downhill runs and then using the batteries to supplement the power required to go up the hills. This is expected to reduce fuel consumption and greenhouse gas generation by a further 20%, reducing the total greenhouse gas generation that would apply to just 40% of that of a normal diesel powered locomotive.

When the backhaul arrangement is factored in, the greenhouse gases generated from an empty return haul are no longer required. The fuel

consumption and greenhouse gas generation will be only about **25% of what currently occurs per tonne** of material transported using the conventional diesel drive systems on the Pilbara railway lines with their one way empty hauls. This significantly reduces the haulage cost as well as improving the environmental outcomes.

The development of a large LNG industry around Ti Tree in the Northern Territory will provide many direct and indirect jobs during construction as well.

It seems likely that the transport of LNG to the Steel Parks and Ports at each end of the railway line for electrical power generation and fuel for the Boomerang Class Ships will be of such a scale that the “bleed off” could provide most of the fuel required by the locomotives in the same way as the LNG bulk carriers are in the main powered by the bleed off that occurs during ocean transport. This adds even more efficiency to the railway system, and in return provides a market for the Ti Tree based resource that makes it economically viable to develop.

GE has formerly partly manufactured and assembled its locomotives in Melbourne, and it is believed that the partial manufacture of PIB’s locomotives could be undertaken in Melbourne.

The initial supply of wagons could come from Korea and Japan until PIB starts producing 5 metre wide slab in Australia, which will help make Australian manufacture of wagons competitive.

4.1 Smart and Sustainable Communities

Unus will take the opportunity to launch a proposal to build three new smart, eco-friendly cities across the railway line, including 2 x 200k resident cities at each end and a 50k resident township near Ti Tree. Bringing to the fore Australia’s new industry and new city development capabilities revitalising existing assets and infrastructure where possible. The construction of PIB Phase 1 will require 75,000 people (a further 105,000 over 30 years) and these people will need to be housed and fed in remote areas. Unus plans to utilise domestic and international partnerships, technology and innovations to build these

communities in Northern Australia. Building materials suppliers will be able to expand the utilisation of existing productive capacity or even expand productive capacity to meet the demand. The project will provide an opportunity for Australia to demonstrate leadership in various areas of construction (including low cost housing), smart, connected and sustainable communities.

5. Cheaper Steel

Australia's steel was initially cheaper than the rest of the world because of the advantages of high quality local resources that BHP transported by backhauling raw materials around Australia.

The Kwinana steel works had previously closed in 1982. Australia now has just the Illawarra steelworks (3 MTPA) owned by Bluescope, and the Whyalla Steelworks (1.2 MTPA) owned by the Liberty Group (formerly OneSteel) still operating.

Australia currently imports about as much steel as it manufactures. Its manufacturing facilities are aging and need refurbishment to remain competitive.

The cost of steel in Australia is about 10% above the world's average manufacturing cost. In contrast, PIB will produce steel at about 15% below the world's average cost, **making steel in Australia 25% cheaper than the current price**. This lower cost steel will reinvigorate manufacturing, attract international investment & position Australia as a viable option to relocate manufacturing to.

Unus in consultation has heard industries growing demand for steel supply including Defense and all their suppliers, and this demand combined with our supply will pave a way for Australia to eventually only use Australian steel to protect Australian shores.

6. Cheaper Electricity

By-product gases from the Coke Ovens in the Western Australian Steel Park will be used to supply electricity to the iron ore mines in the vicinity.

The Coke Oven gases can be burnt in turbines with steam tails that have double the thermal efficiency and hence produce half of the greenhouse gases per unit of electricity.

Gridding the mines mitigates the peaks and troughs within the areas supplied. There does not appear to be any viable alternative at present that can effectively halve the greenhouse gases generated in the Pilbara Region. PIB will use this as one of its CO₂ offsetting strategies, without increasing the cost of the electricity to existing suppliers, whilst at the same time

providing electricity that will support new manufacturing and processing within the Steel Park at affordable costs.

There will be some surplus gases available which could be used to generate additional electric power to support growth industries in the area, but it is more likely that the Hydrogen and Carbon Monoxide will be separated, the Hydrogen mainly used as a basis for explosives and fertiliser manufacture and the Carbon Monoxide used as a base load fuel.

In the east, the connection to the National Energy Market (NEM) Grid means that there is little purpose in running base load power. The NEM is connected to many Solar and Wind Farms, which at times produce so much electricity that costs fall significantly.

If the Carbon Monoxide was husbanded to fuel gas turbines to meet peak supply, this will result in sales of electricity at higher prices, whilst at the same time mitigating those prices somewhat for other grid users. This principle would be applied to electricity consumption within the Steel Park as well.

If the NEM price exceeds the local production cost from the Coke Oven Gases, the gas turbines will be fired up. In this way, the Steel Park users are always

running on the cheapest possible electricity, whilst also selling electricity produced at the highest possible price.

The overall cheaper electricity cost arising provides an opportunity for new manufacturing investment where the production cost is strongly linked to electricity cost.

Another way of reducing electricity cost is through co-generation. PIB's scale will facilitate, not just primary and secondary heat recovery, but tertiary as well. The turbine exhaust gases are hot enough to boil water to steam, with the steam driving a steam turbine to produce additional electricity. Secondary co-generation will have enough heat to run a thermal desalination plant, which is much cheaper to run than a reverse osmosis plant.

Running the electricity generation and energy management in this manner also has an effect in reducing greenhouse gas generation as the use of Solar and Wind power is maximised.

- Downstream opportunities from the steel manufacture other than Agriculture
- Fertiliser, AdBlue & Explosives

The scale of PIB's Steel Parks provides a unique opportunity to capture and use not just waste heat, but other waste and by-products, as well as using recognised value streams for higher value purposes.

The Coke Ovens produce "Town Gas", a 50:50 mix by volume of Hydrogen and Carbon Monoxide. This gas was once reticulated around cities in Australia for domestic cooking and heating but was ultimately replaced by Natural Gas because of the toxicity of the Carbon Monoxide. It is captured and burnt to produce energy at most steel smelters around the world and PIB will certainly utilise a proportion of this gas for this purpose.

Phase 1 will consume 44 MTPA of Coking Coal, 13.2 MTPA of which will come from town gas. There will be 880,000 tonnes of Hydrogen produced by PIB each year.

6.1 Renewable Energy

Unus leadership team have a developed and ongoing relationship with Softbank. Softbank Energy are world leaders in renewable energy infrastructure, planning and development. Unus is currently developing a roadmap that could see Australia taking advantage of its solar generation potential domestically and abroad.

7. Oxygen, Fertilisers and Explosives

Each PIB Steel Park will have the world's biggest Oxygen Plant, which Air Liquide have advised will be half the capital and half the operating cost per Oxygen unit compared to existing operations. Instead of throwing away what others consider "waste" Nitrogen, some of this will be combined with the Hydrogen from the Coke Ovens to manufacture Ammonia (NH_3). Adding Nitric Acid (HNO_3) made up of more Hydrogen, Nitrogen and Oxygen makes Ammonium Nitrate (NH_4NO_3)—the base for many fertilisers and explosives.

From 2002 to 2017, the average annual sales of fertilizer in Australia were 5.4 million tonnes. This provides around 1,000,000 tonnes of nitrogen, 400,000 tonnes of phosphorus and 200,000 tonnes of potassium. About half of this is manufactured in Australia, including superphosphate, which is manufactured from imported phosphate rock.

PIB has been advised that if the use of fertiliser was doubled in Australia, that the current average yield as a proportion of the potential yield could increase by 50%.

The United States on the other hand has a 50:50 split between explosives and fertilisers. This suggests that Australia's agricultural industry could consume 10 times as much AN based fertiliser as it does at present, which would effectively double Australia's AN consumption. There are other Ammonia based products that can be produced instead of AN, each with its own specialty market.

The proportions of these by-product gases directed to fertiliser, or explosive manufacture, or energy production will depend on the financial netback for each. With its substantial scale, PIB could flood certain markets, such as that for

AN, meaning that producing more of a particular commodity would reduce the sales price if production quantities were increased. This will be managed by determining the best overall result from using the different materials for different applications.

Adding the Carbon Monoxide to the Ammonium Nitrate makes Urea ($\text{CO}(\text{NH}_2)_2$), the best means for sequestering Carbon in the soil to increase plant yields. Urea is also known as “AdBlue”, an additive that improves diesel engine efficiency and reduces diesel emissions.

The fertilisers and explosives manufacture will occur within the Steel Parks or adjacent to them, in order to minimise transport costs of raw materials and ensure low cost production for high volume manufacture.

It is almost certain however that Australia will become a **major exporter of both explosives and fertilisers**, compared to its current reliance on imports. We will keep enough here, in combination with the soil Carbon initiatives to help increase Australia’s agricultural yield, **significantly boosting Australia’s agricultural exports as well as its manufactured goods.**

These commodities which suffer from variable pricing due to the exposure to export markets, will have a much more stable price for domestic consumption than what has occurred in the past. Stable pricing means better planning. Better planning means better outcomes.

There will need to be a significant investment in manufacturing capacity to achieve this outcome, but PIB is already receiving enquiries regarding investment in such facilities. It may be necessary to accept foreign investment in Phase 1 of PIB for these facilities, but once the ability to produce is demonstrated, this type of investment would be very attractive to Australia’s \$3T Superannuation Funds, **boosting the proportion of manufacturing in Australia that will be Australian owned.**

8. Potash, Phosphate, Sulphur

PIB's railway line crosses the massive Sulphate of Potash (K_2SO_4) resources at Lake Disappointment and Lake Mackay in Western Australia, providing economically viable logistics solutions for the development of these resources. These resources would be processed to value add in Western Australia, for support of the Australian agricultural industry and export.

The PIB railway also passes close to many Phosphate (P_2O_5) resources in Queensland. The first step in producing Phosphate based fertilisers is to mix Phosphate Rock with Sulphuric Acid. The Southern Hemisphere's biggest acid plant is based at Mt Isa in Queensland. Whilst the PIB main line will not be handling this material, PIB will help provide logistics support to facilitate a large Phosphate fertiliser manufacturing industry in Mt Isa and branch lines could be built if economically viable.

The commissioning of a major Phosphate based fertiliser plant in MT Isa will not just create jobs directly in MT Isa. The increased activity of the acid plant will help reduce processing costs, which could mean lower grade ore can be mined. This will extend the life of the Mt Isa mines.

9. Cement & Light Weight Concrete Aggregate

The slag from the steel works will be used to make both cement and lightweight concrete aggregate. The light weight aggregate is made by creating Carbon Dioxide bubbles in the slag, another way to sequester Carbon Dioxide, but one that adds value to the product, instead of costing money for no offsetting gain.

Lightweight concrete aggregate is of particular interest to the building industry. If an aggregate is used that reduces the weight of a building, 10% more floors can be added for the same foundation and land purchase cost, significantly increasing profits that can be earned. There is significant Carbon Dioxide that can potentially be sequestered into light weight concrete aggregate.

Research suggests that it may be possible using sequestration innovations regarding Carbon capture and reuse, because of the scale of PIB, **to export steel with carbon credits**. This could be the case if the CO₂ collected by the plants in the increased agricultural production created by the fertilisers produced is counted in the assessment.

9.1 Refractory Manufacture

The scale of the operation justifies a very large refractory business, whose export earnings are projected to match the wine industry. PIB has been approached by a refractory manufacturer with the proposal to build a single large plant in Australia to support PIB and export refractory bricks to the rest of the world.

9.2 High Purity Metal Manufacture

On the East coast at least, it is likely that water required will be sourced from the ocean and run through a desal plant. Ocean water is 3.7% salt. Desal plants produce 50% pure water and 50% brine. The brine is therefore 7.4% salt. The metals in the salt in decreasing order are Sodium, Calcium, Magnesium and Potassium.

If Carbon Dioxide is bubbled through the brine, carbonates of these metals are precipitated at different temperatures and pressures. It is possible to then process the carbonates to produce very high purity metals that sell at premium prices. This is also another form of Carbon capture and reuse. The sale of the metals subsidises the desalination operating cost.

10. Agriculture

PIB will help increase agricultural production in two ways. The first is by the supply of low cost fertiliser. The second is the reduced transport cost to export market for containerised goods.

With respect to fertiliser, the Australian farmer on average manages his farm to minimise financial risk instead of maximising financial return. This has resulted in average farm yields being <50% of what would be possible if the farm was managed to maximise return.

Australia currently exports about \$66B in agricultural products. If just half of the yield uptake possible was secured, Australia's agricultural exports would reach \$100B.

In addition to fertilisers increasing farm yields, the fleet of PIB designed, 55 Roll On Roll Off (RORO) Dual-Purpose, Boomerang Class Ships (BCS) built to carry 1st Stage steel to foreign markets, can also carry containers. Their capability on the outward run is for up to 2,000 containers, either empty returns or carrying packaged as opposed to bulk agricultural goods and returning with up to 5,000 containers carrying imported goods to Australia.

The backhaul of containers is expected to reduce container shipping costs to Australia from a long-term average of \$1,250 per box to \$750 and still clear a profit of around 30%.

The access to low cost containerized goods provides an opportunity to the Australian Agricultural Industry to value add to its products by processing and packaging here in Australia. This on its own is a sufficient justification for PIB. The advantages arising by offering first rights to the increased trade to PIB investors is substantial, because it facilitates the competitiveness of their countries' products for sale in Australia as well as the reverse for the sale of Australia's products in their countries.

11. Moving Forward

Unus enabling PIB provides the opportunity to recapture our destiny as a leader in steel and manufacturing.

Unus meets the community and regulatory requirements of 2021 and moving forward. Respecting all the competing community expectations that impact on a nation building project such as this.

The Unus relationship ensures that operations are sustainable inside and outside of the project, that the wider community remains our most important stakeholder and that we can deliver on a project that secures sovereignty and economic uplift for generations to come, not just for our nation, but also for the partnering nations of the world.

The Investors are ready to move as soon as we have “skin in the game” in the form of bipartisan support from the State and Federal Government .

If the Australian Government was to provide a grant to cover the cost of the approvals, estimated to be \$AUD360M, the Government could own the railway corridor, steel park land, and dock lock port areas as security, making the land available to PIB on a 99 year renewable lease basis. There are more than enough investors willing to commit if this were to occur—enough in fact, to allow PIB’s Phase 1 of 10 mills to seamlessly extend into Phase 2.

In his introduction to the Joint Standing Committee on Trade and Investment Growth, Senior Economist Saul Eslake stated that:

Taxation “growth” revenue to Australian Governments is expected to increase by an estimated \$23B annually when full production capacity is reached within about 8-9 years.

Unus believes that there are no other projects on the drawing books in Australia that could deliver this level of economic outcome. This includes that capacity for the project to clear the State and federal states Covid inflamed debts and consolidate Australia as an economic powerhouse.

Appendix

Letters of Support

Brisbane West Chamber of Commerce

07/09/2021

To whom it may concern.

This letter is written to confirm our desire to work with Unus and Project Iron Boomerang. We have worked collaboratively with the leadership team at Unus for a number of years and we are currently driving an industry engagement initiative alongside them. This includes aggregating multiple chambers of commerce to help business bounce back from COVID19, initially including;

- Israel Chamber of Commerce
- American Chamber of Commerce
- French Chamber of Commerce
- Brisbane West Chamber of Commerce

We plan to gain national chamber of commerce support over time in partnership with Unus.

If you have any questions regarding our relationship please feel free to contact me directly.

Kind regards,

Ian Reynolds



President - Brisbane West Chamber of Commerce





To whom it may concern.

This letter is written to confirm our desire to work with Unus and Project Iron Boomerang.

The Science of Rockets an education division of PFI. PFI is an advanced manufacturing business and facility in Brisbane with contracts into Defence among others.

We are currently working through a collaboration with David Burkett from Unus in the area of skilling and upskilling workforces toward the future of work and in particular advanced manufacturing.

In PFI we have a mandate now to ensure that we do not purchase from China and so if there are any locally made steel projects afoot our entire industry is looking to support these initiatives.

We look forward to the growing relationship and seeing Australia secure its own steel future.

Kind regards,

Britt Cleary

CEO

Science of Rockets

<https://www.pfi.com.au/>

<https://scienceofrockets.com/>



To whom it may concern.

This letter is written to confirm our desire to work with Unus and Project Iron Boomerang.

SBAA is a national peak body representing small business. We are keenly interested in all projects that help small businesses survive and thrive. We see Project Iron Boomerang and a great opportunity for small businesses to economically benefit nationally.

We have met with the leadership at Unus and are already starting to work through a win-win collaboration.

If you have any questions regarding our relationship please feel free to contact me directly.

Kind regards,

Ann Nalder

CEO

Small Business Association

www.smallbusinessassociation.com.au



Thursday 9th September, 2021

Associate Professor Michael A. Cowling,
College of Information & Communication Technology,
School of Engineering & Technology, CQUniversity

To Whom It May Concern:

RE: Support for David Burkett & Iron Boomerang

This letter is to confirm a collaboration between myself and the team driving the Iron Boomerang project.

As an Associate Professor in the School of Engineering & Technology, I am involved in significant technology outreach and have worked with both state and federal government on national outreach programs, including National Science Week and the World Science Festival.

I was recently fortunate to connect with the Iron Boomerang team to discuss these outreach activities in reference to their active presence in robotics. Since then, David Burkett has led multiple community and industry engagement initiatives in partnership with CQUniversity. Currently I am working with David through a business case to engage our national and international network in regional outreach regarding the future of work.

CQUniversity has the largest geographic footprint of any University in Australia and we have a proud history of skilling/upskilling workforces in Mining, Agriculture and Advanced Technology. We look forward to the growing relationship and seeing how we can work with Iron Boomerang on ensuring that staff are adequately trained for the level of expertise and skills needed.

I am happy to lend my full support to the initiatives of the Iron Boomerang team in improving technology adoption and in technology outreach. If you have any questions or require more information, please feel free to contact during business hours on [REDACTED]

Regards,



Associate Professor Michael A. Cowling.



BLUE IoT

Building Technology for
The Blue Economy

Morphett Vale SA 5162

September 9th 2021

To whom it may concern.

Blue IoT is a leading-edge smart cities vendor and integrator renowned for 'Encompass Blue' - the world's first IoT smart cities platform suite. Driven by a Greentech/PropTech and systems thinking 360-degree approach, Blue IoT is at the forefront of sustainable innovation, delivering outstanding results. Blue IoT is the recipient of the Australian IoT Pioneer Award 2019, the FMA FM Industry Awards for Excellence 2019 for Industry Innovation, and most recently, the Global FM Highly Commended Award of Excellence in FM 2020.

Challenging times like the present have acted as a catalyst for advancing smart buildings, cities, and assets to optimise the wellness of people and the planet. Blue IoT acts on this urgency for sustainability, executing a move towards carbon net-zero by rendering solutions for substantially conserving our planet's resources, while simultaneously enhancing the human experience.

At the heart of their service is Encompass Blue, which delivers world-leading savings of 20 to 50% of total energy use, maintenance costs, as well as up to 70% carbon footprint reductions. Consolidating an array of functions, this state-of-the-art technology embodies excellence in the cloud, IoT, interoperability, smart sensors & controllers, machine learning, predictive maintenance, and cybersecurity. Encompass Blue provides a broad, open platform for digital transformation in FM (facilities management), infrastructure, buildings, and smart cities.

This letter is to confirm our support of the submission to Project Iron Boomerang and UNUS to the Senate Standing Committees on Economics - The Australian Manufacturing Industry.

Future manufacturing, construction, mining, agriculture and communities, both old and new will all increasingly incorporate AI, automation and IoT (Internet of Things) to continue Australia's move towards a sustainable future and a carbon neutral future.

It is important that Manufacturing, as well as the other areas noted above, embrace IOT as part of any future Manufacturing processes so as to be able to measure, monitor, report and modify those processes on the run, which will also contribute to a real reduction in costs of manufacture and international competitiveness.

A key element for the future growth of manufacturing in Australia is economically priced energy, water and the base for so many manufacturing industries, higher quality and lower priced steel. The ability for Australia to have some of the highest quality steel in the world, also at one of the lowest prices in the world, will reinvigorate Australia's Manufacturing industries, including many



BLUE IoT

**Building Technology for
The Blue Economy**

international manufacturers re-locating to Australia to take advantage of the combined manufacturing costs savings, which will no longer be impacted by our higher priced labour component.

Project Iron Boomerang and UNUS will also provide significant additional opportunities and resources to a wide diversity of manufacturing and industries from the many additional by-products outlined in their submission as well as the opportunity to open up a vast diversity of minerals and resources across Northern Australia, that can include the development of value adding, smart manufacturing and smart city developments right at the site of the actual mineral or resource mining site.

Blue IoT and other IoT based companies will play a significant role in every element of the growth and development of current and new manufacturing as we expand Australia's place and eventual leadership in a future sustainable world.

I personally encourage the Federal Government to support Australian Manufacturing's future by ensuring that Project Iron Boomerang and UNUS become a reality.

Sincerely,



Bob Sharon
Founder & Chief Innovation Officer
Blue IoT





Senate Standing Committees on Economics
PO Box 6100
Parliament House
Canberra ACT 2600

Dear Committee Members

I wish to register a letter of support for the Project Iron Boomerang proposal.

I am the founding Director of NexGenUrbanism Pty Ltd. NexGenUrbanism delivers global advisory solutions for major city development and infrastructure delivery. Utilising our strong understanding of the global forces impacting upon cities and regional communities, we draw on global best practice to develop strategic urban strategies that address the increased complexity and uncertainty of today's world to solve urban and regional issues.

I am the international urban planning, smart city and sustainability advisor to Thailand's Economic Corridor City. The Eastern Economic Corridor City in Thailand's south-east is a new city for over 1 million people, covering an area of 100km², incorporating the Thailand 4.0 philosophy – engaging and delivering the 4th Industrial Revolution for Thailand. I am also advising on smart cities in Vietnam and the Middle East.

This experience has demonstrated to me the strong demand to build new smart and sustainable cities across the emerging economies of Asia and the Middle East. These countries are desperately seeking massive amounts of building materials that meet their low carbon city development, particularly steel and green steel as it becomes available. They also wish to diversify their current supply chains from an over-reliance on single country sourcing, e.g. China. The countries I work with are very interested in Australian expertise and manufactured goods.

It is opportune time as Project Iron Boomerang begins to build the manufacturing facilities for high quality low carbon steel with a commitment to manufacture green steel. There is a 20-to-30-year building boom of new cities across Asia and the Middle East who are looking for reliable and innovative partners to supply them with the requisite building materials, innovation, and expertise to create world class sustainable smart cities to re-position their own economies for the future.

Project Iron Boomerang is well positioned and fully capable of making that contribution for Australia and promoting Australian high-quality manufactures into these important markets.

Yours sincerely



Tony Carmichael
Director
NexGenUrbanism Pty Ltd

ST Solutions Australia

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[REDACTED] it may concern.

This letter is written to confirm our desire to work with Unus and Project Iron Boomerang.

We have worked with the leadership team for over five years in our robotics division and more recently we have been flagged regarding the Iron Boomerang project and potential to work together on it.

We have started our investigations regarding how we could support the project and have started to move on a strategy. Softbank is an investor in a wide variety of technology companies, and a supplier of a variety of robotic solutions. Though we do not intend to act as an investor or co-funding entity at this stage, we would be motivated to work as a technology services and solutions provider.

We look forward to seeing a project of global importance get the support it needs to help the wider community benefit from such a project.

Kind regards,

[REDACTED]

Harold Walsh

Practice Lead

Softbank Australia



Contact



Advisory Board

[Robert McIntyre](#) ([Future Charged Pty Ltd](#))

[Tony Carmichal](#) ([NexGen Urbanism](#))

[Curt Rendall](#) ([Rendall/Kelly Chartered Accountants](#))

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