

# PROJECT IRON BOOMERANG



EWLP- PIB Corp Shareholders



GLENCORE



SETTING NEW STANDARDS IN THE FUTURE PRODUCTION OF GREEN STEEL

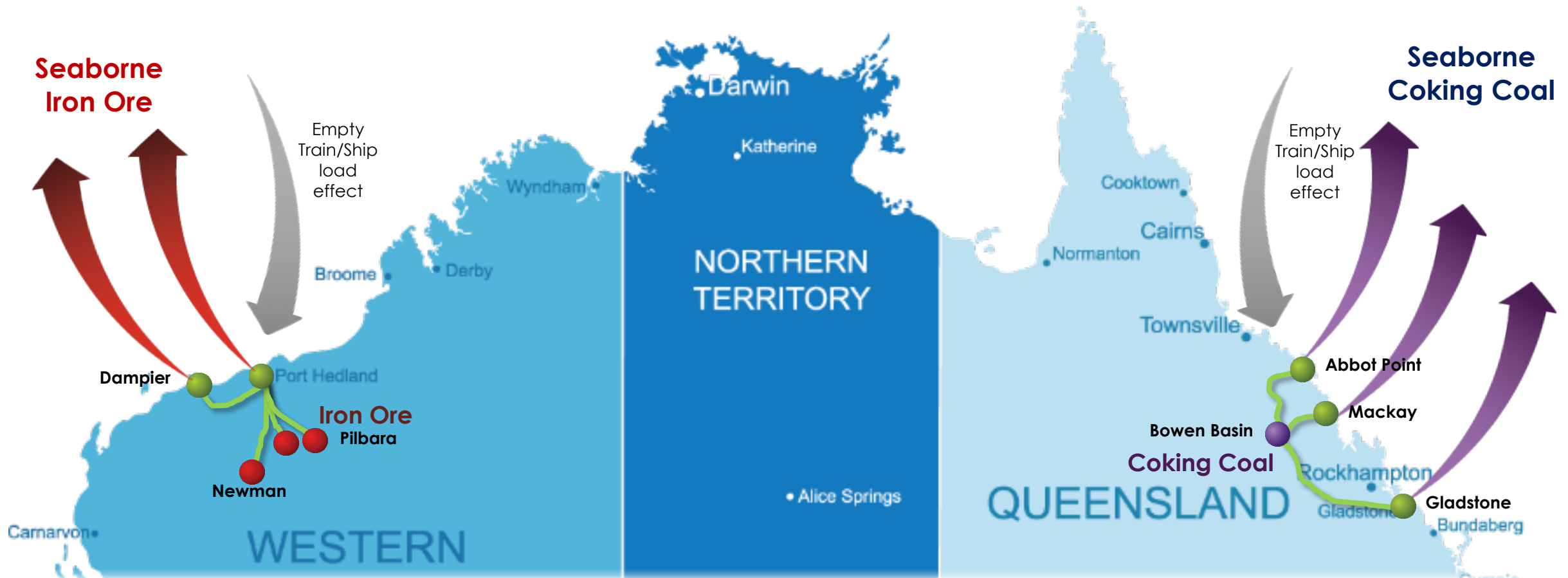


**AusIMM Cairns Mining Roundup**  
**PIB Project Update**

*A National & Major Trading Nations Building Project  
for the Re-Industrialization of Australia*

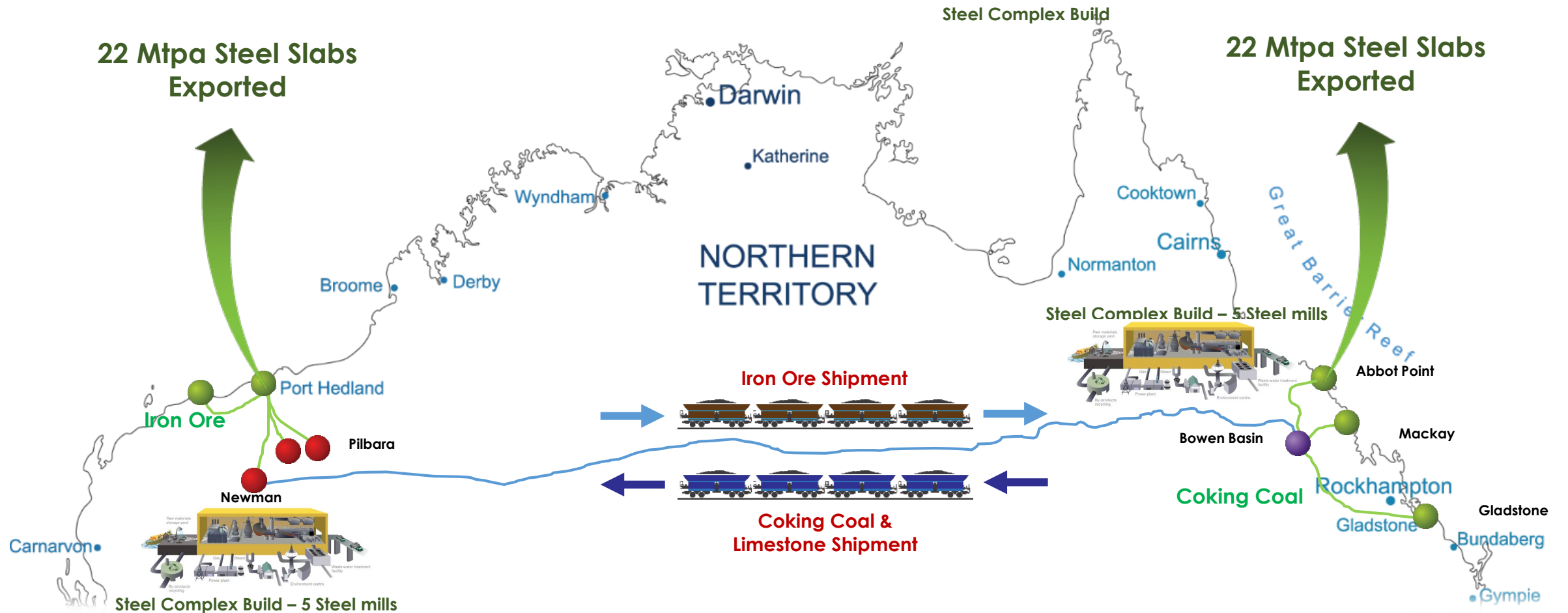
# THE PROBLEM

The Industrialised and particularly the developing world is increasingly “competitively dependent” on primary “seaborne” steel making ores which Australia has at both ends of the continent and dominates world supply by 60%-70%. This process spawned the “Empty Return Load Phenomenon” which is inefficient, unproductive and environmentally damaging.




# PROJECT CONCEPT

Before the 2nd world war and over 2,000 years before that, iron and steel was made next to the mines. The PIB case is a return to that best practice and correcting this modern age inefficiency and resulting phenomena of the world's biggest bulk ships and trains returning empty half the distance (9,000 km's to China). Putting an end to the empty load phenomenon will save net billions per year. The av IO fe 60% the rest is dirt 40% - empty return trip ship and train efficiency is therefore around 30%.







Project Iron Boomerang is uniquely positioned  
to make sustainable profitable 1st stage steel  
for the next 75years +



## Early Feasibility Study Phase Figures Shows

### **Economic Benefits June 2018**

- \$18Bn p/a in steel production from 44m tpy of steel (\$12Bn in Value Adding 116m tpy of primary ores consumed – 2017 p/a adjusted market figures) “TSC/NRI”
- Economic Benefit – Global Rule of Thumb in Generated Industrial Steel \$1Terms is \$1 to \$3 = \$54Bn p/a +\$18bn Steel p/a

### **Jobs – Construction & Permanent**

- Construction at Peak 75,000 (including 15-20k o-seas steel plant supply)
- PIB Steel Operations/Production & Logistics Primary Jobs 35,000 – (20,000 Abbott Point & 12,000 Newman 3,000 Admin Qld & WA)
- Secondary/Tertiary industrial and service jobs expected 50,000+.

### **Governments Tax Revenues**

- Expected Governments Tax Revenues \$21bn p/a by 2027 if the bankable approval study commences this year.

### **Sovereign Governments**

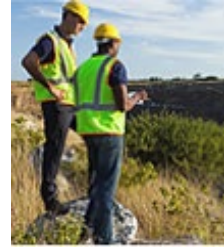
- Sovereign Governments are the biggest PIB beneficiaries delivering an expected conservative 30% taxable revenue (from income & commercial taxes) on a generated \$72bn p/a at full production rate of 44m tpy steel.

# ECONOMIC BENEFITS



## \$55 Billion

Total Project Base Capital  
Expenditure



## 6,000 Jobs

Rail Construction Jobs  
(50% in NT)



## 1,500 Jobs

Permanent Operations &  
Maintenance Rail Jobs



## \$16 Billion

Rail & Rolling Stock



## \$4 Billion

PIB Steel Complex Industrial  
Land Sites (WA & QLD)



## \$35 Billion

10 Steel Plants (5 on each  
end – owned and operated  
by steel mills)

# PARTNERS

## EWLP- PIB Corp Shareholders



## EWLP- PIB Major Contributing & Contract Corp Associates 5-9 years



## EWLP-PIB CA Signed (24 in total) - Leading & Contributing Steel Mills (7- 8 years)

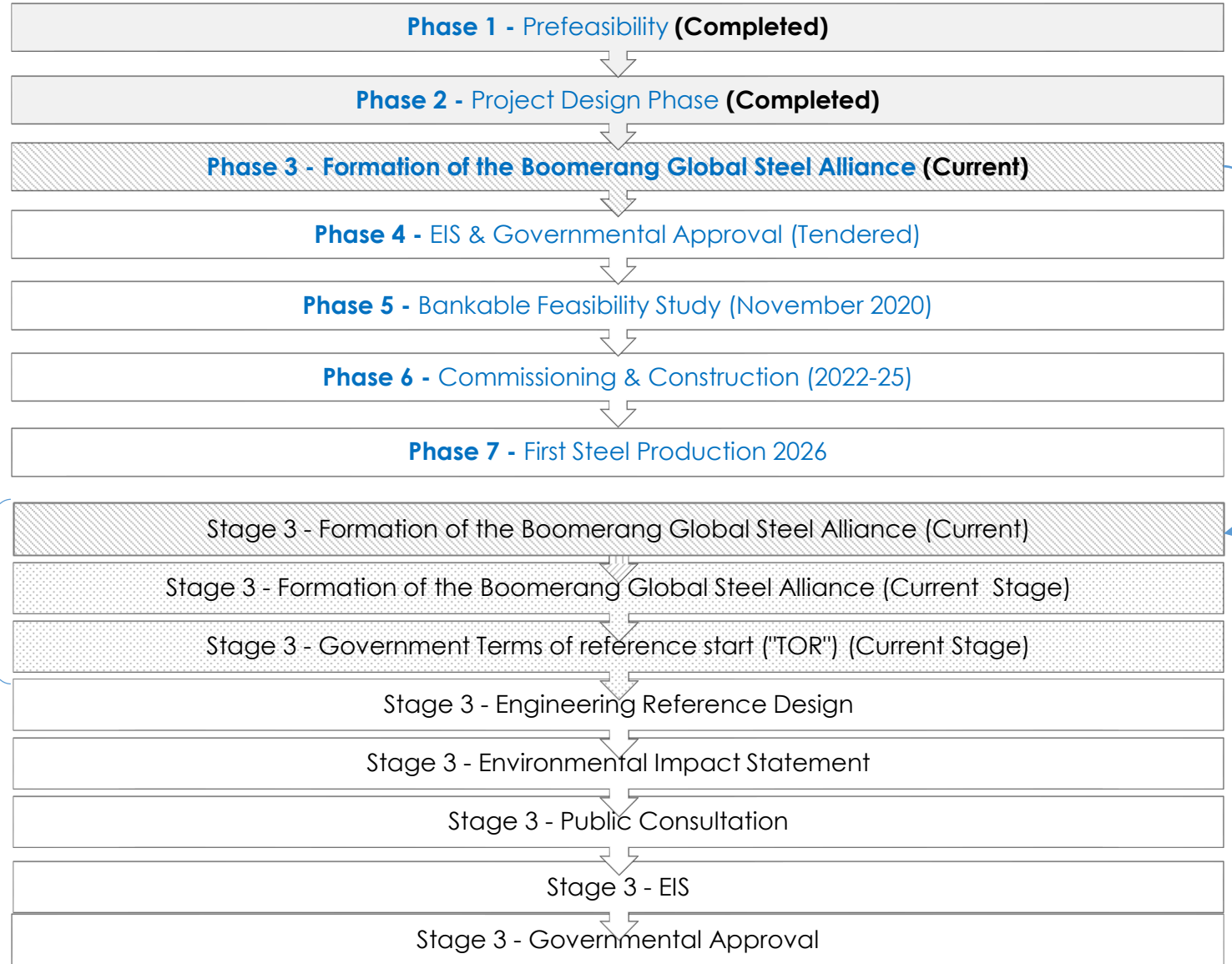




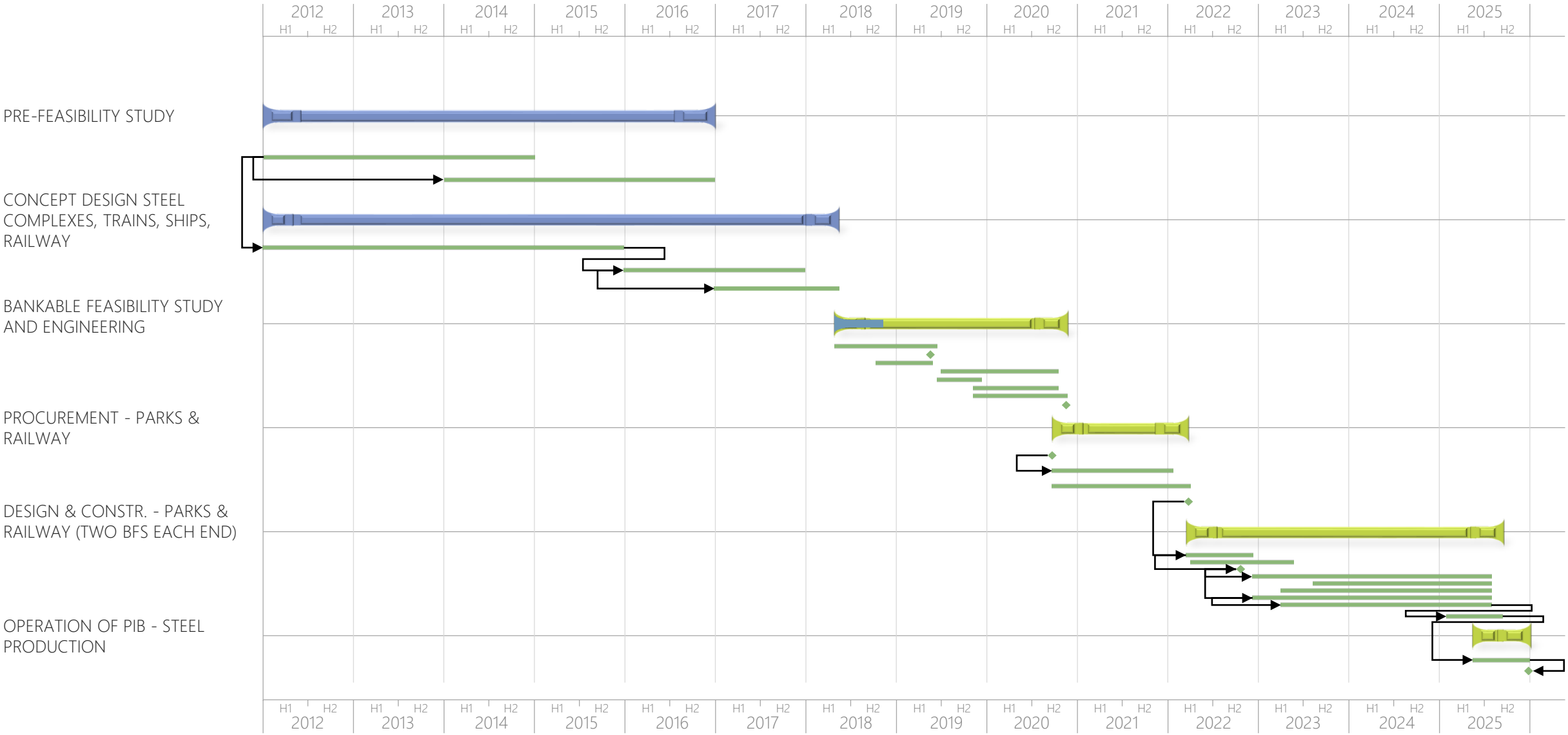
# PROJECT PHASES

The Prefeasibility as well as the Project Design Phase have been completed at a cost of AU\$12 million. The next stage of the PIB Project is to obtain commitment of engagement from global steel companies. The target is to have 10 global steel companies build and operate 5 steel mills on each end of the transcontinental rail line. These 10 global steel companies involved in the project will operate under Project Iron Boomerang ("PIB") Steel Alliance and will control the operating company. The initial aim is to obtain the commitment and engagement from at least three global steel companies before the completion of the EIS and Government Approval.

Project Iron Boomerang has engaged Hitachi Consulting to help guide the company through Phase-3, the "Formation of the Boomerang Global Steel Alliance". Phase-3 consists of eight workstreams and will take the PIB Project to Phase 4.



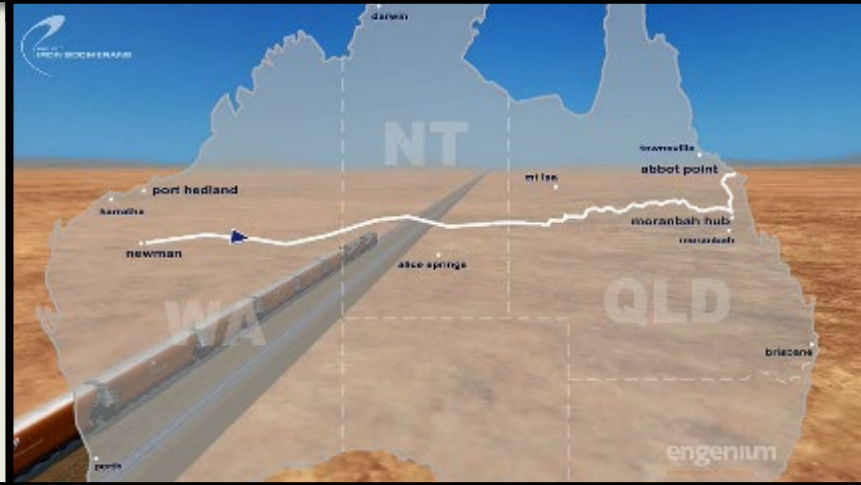
# PROJECT TIMELINE



■ Completed Stage Timeline     
 ■ Future Main Stage Timeline     
 ■ Sub-Workstreams



# PROJECT ELEMENTS





## Continental Heavy Haul Multi-Purpose Rail and Communications Corridor.

### The Preferred Corridor

The Quantm system for corridor identification and alignment optimisation was the technology utilised to generate the preferred corridor. The Quantm system has been used to demonstrate the engineering feasibility of the PIB rail project and had identified key to environmental, geological, mining and land-use constraints. The PIB provides for 3,370km of heavy standard gauge railway from Moranbah in Queensland to near Newman in Western Australia, at a maximum grade of 1:200 and a design speed of 80 km/hr.

This system identifies viable corridors and optimises alignments for rail carriageways. The system can take into consideration the land use constraints, unit construction costs [eg rails, sleepers, ballast, earthworks and structures], design geometry for the rail, existing linear features [eg roads, rail lines and rivers], and generates sets of alignments that comply with the criteria and are of lowest cost.



To obtain the level of accuracy and detail required to meet the objectives, the rail study area was broken into 15 sections. Each of approximately 400km, made up of a 200km section plus a 100km overlap with each adjacent section as shown in the diagram.

### Communications and Third-Party Access

PIB - EWLP intends to build, own and operate a 3,370km open access, multi-user, multi-purpose infrastructure corridor from the Port of Abbot Point through to the coal mining regions of the Bowen and Galilee Basins and to the North West Minerals province near Mt Isa to the terminus Steel Park located at Newman in the Pilbara Western Australia.

- The Project will facilitate EWLP's vision for an open access freight Corridor, which is justified for the compelling economic and community benefits it will provide, including the following:
- Services the doorstep of all mining tenements delivering optimum HH Rail and Communications economic efficiency to all users.
- The entire Corridor incorporates advanced train control signaling on a common shared platform optimising freight efficiency for the transcontinental developing mines and PIB HH Service Rail Plus Isolated Communities benefitting substantially.

Continental U-Rail 20% payload each way cost efficiency gain for a better freight rate.

- Poised to be one of the biggest construction challenges in the nation's history, PIB will link the Pilbara iron ore mines in Western Australia with Bowen Basin coal mines in North Queensland via a E-W 3,300km rail line which has a payload each way producing a World's Best Practice 20% U-Rail Competitive Efficiency/Productivity gain. Only one ore will travel the continental rail distance ex mine gate to the steel complex stockyards.
- Global Steel-mills will locate, construct own and operate 1st stage steel plants at each end of the continental line to manufacture slab steel. 5-mills x 4.5m tpy each = 22m tpy each for a PIB total of 44m tpy slab steel.
- The project's primary objective is to service and facilitate the production of Australian made slab steel for further processing transfer and/or export, thereby significantly reducing the quantities of seaborne bulk iron ore and coking coal (and empty ship returns) by 3 times to smaller slab steel carrying ships accessing both the Suez and Panama Canals 3-4 times less sea distance than the bulk carriers with their empty returns. PIB Productive Supply-Chain Model efficiency against current operating practice produces around 15-20% gain.



Heavy Haul Aerodynamic Lidded Wagon :  
10-20% Productivity/Efficiency gain

- The Project design incorporates using modern, high capacity fuel efficient locomotives, environmentally friendly, closed lid wagons where compatible with existing infrastructure capable of delivering greater payloads per train at lower cost per ton from mine to steel complex or port.
- The proposed use of closed lidded coal wagons eliminates dust transit dispersion being environmentally desirable increasing efficiency through reduction of aerodynamic drag thereby reducing locomotive diesel fuel usage. Identified PIB Wagon Productivity gain efficiency against current operating world's-best-practice "WBP" producers a leading 10-20% net gain contribution to the supply-chain.





## PIB Steel Complex Design

- The development of a Steel Park will allow PIB to approach “world’s best” productivity benchmarks for slab production. A PIB Study Report indicates WBP sustainable Operations/Production Productive Efficiencies of 15-20% under the PIB concept and strategy.
- Major Supply-Chain and Production Operations consolidations under the PIB model.
- Build them like a Ford Car 10 PIB Standard Model 1st stage Iron & Steel Making Plants - Modular Constructions saves major CAPEX Plus shared services five steel plants sharing one Power Plant - Coke Oven – Oxygen – stockyard – water/air treatments etc saves billions in stand-alone CAPEX.
- PIB GHG reductions apparent against WBP steel plants of around 25-30m tpy.





## The PIB Slab Steel and Container Ship

Ours is a special purpose ship, uniquely designed, built to service and vastly reduce empty ship returns (freight productivity gain efficiencies) in two major Australian sea freight sectors Resource Bulk Carriers and Dry Container Ships to and from Australia which will complement each cargoes better freight rates.

- For the PIB 10 - 1st Stage Steel Mills producing 44m tpy of slab the ship and PIB bulk slab rate efficiency reduces present cargo rates by more than 50% against current practice (indicating \$900m p/a sea freight saving or \$90m for each steel plant). Likewise for the Australian container trade expected, sea-freight reduction by 20-30% for importers and exporters.
- Currently the world's biggest bulk carrier ships export Australia's two primary iron and steel making ores (Iron ore and coking Coal) from both ends of the continent to industrialised developing market and major trading nations, mostly returning 100% empty to the world's biggest bulk loading ports at each end of the Australian continent, enabling loading into Panamax and Handymax ships which can access much shorter return sea journey distances (efficiencies) through the Suez and Panama Canals and the majority of world's ports.



## State of the Art Smart City

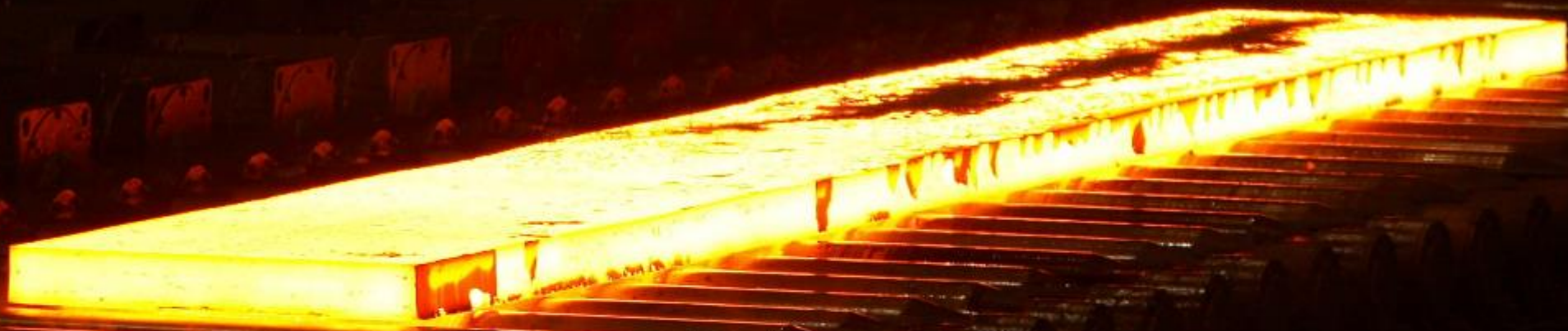
PIB presents a unique global scale affordable greenfield state-of-the-art opportunity to fully integrate industry with adjacent social living town sites delivering high quality standards of living with low cost effective full service needs.

- Bowen Town extension 42,000 – aerial surveys conducted!
- Shared Water Treatments at 3-4 primary re-use levels.
- Power Shared Co-Gen Improved Outcomes reduced Cost and Impacts.
- Bio Fuel plants utilising secondary/tertiary heats and sewage.
- Light Rail - Elevated within Steel Complex to Town (20-30km) saving 5,000 a day car movements from Town to Complex.
- Similar smaller town at Newman WA of 12,000 people.





The steel industry is the second biggest industry in the world after oil and gas with an estimated global turnover of **900 billion USD.**<sup>1</sup>





# PIB PRODUCTION

## PIB 1st Stage Steel Production

### FAST FACTS

Fully operational PIB Phase 1 will produce

**44**<sub>m TPY<sup>1</sup></sub>

first stage steel

**10**  
Steel plants, 5 on each side of Australia in  
2 state of the art steel parks.

PIB Steel Parks will use

**40**<sub>m TPY</sub>

of MET/Coal

PIB Steel Parks will use

**64**<sub>m TPY</sub>

of Iron Ore and

**3**

Brownfield Replacement Plants

**20% to 30%**

Improved Efficiency

**7**

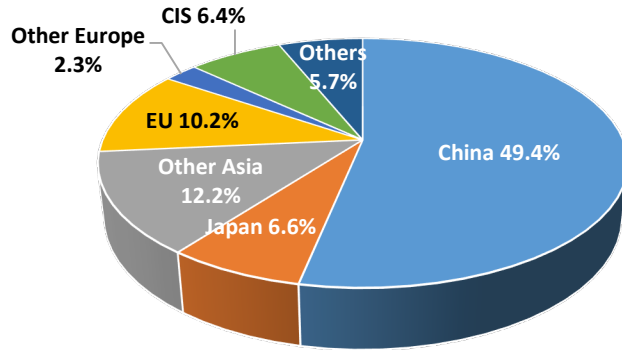
Greenfield Plants



# PIB PRODUCTION

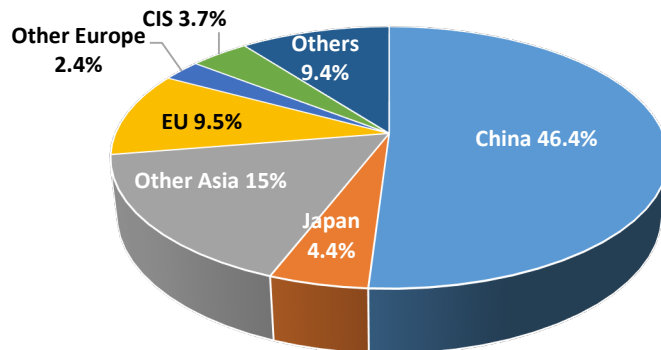
## Global Steel Production & Consumption - 1,623m TPY (million tones per year)

### Crude Steel Production



World total: 1,665 million tonnes

### Apparent Steel Use (finished steel products)



World total: 1,537 million tonnes

PIB Phase-1 Steel Production vs Current Global Consumption  
**Current** Annual Global Steel Consumption<sup>33</sup>

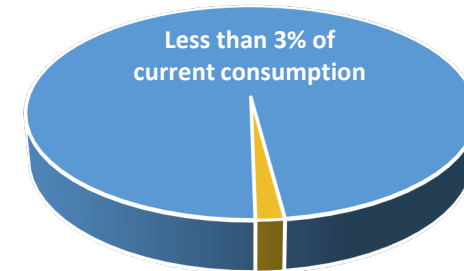
**1,623<sub>m</sub> TPY**



**44<sub>m</sub> TPY**

PIB Phase-1 Production **capacity** will produce 44m TPY of steel

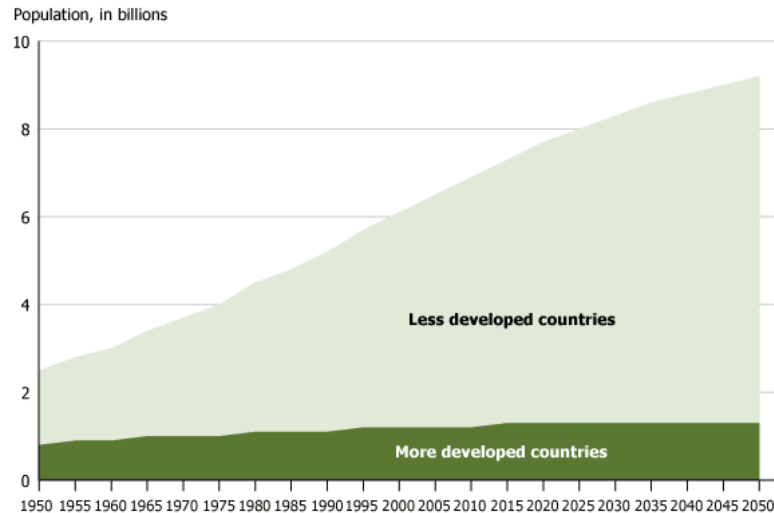
At full production capacity with 10 Steel mills in operation, PIB will only supply a fraction of the Global Steel Consumption



**2.7%**

# FUTURE GLOBAL STEEL CONSUMPTION

By **2050**, steel use is projected to increase to be **1.5 times higher** than present levels in order to meet the needs of a growing population.<sup>33</sup>



We will see an additional **1.7 Billion** people, globally by **2050**

For the last 50 years, world population multiplied more rapidly than ever before, and more rapidly than it is projected to grow in the future. In 1950, the world had 2.5 billion people; and in 2005, the world had 6.5 billion people. By 2050, this number could rise to more than 9 billion (see chart "World Population Growth, 1950-2050"). Ref: UN Demographics

Because the majority of the population growth will come from less developed countries, we can expect a global urbanization trend. China alone is expected to see 200 million people to urbanize by 2050.

Taking the global population growth, as well as urbanization trends, into account we can expect the annual global steel consumption to raise to **2,400m TPY** by **2050**.



# PIB ENVIRONMENTAL CREDENTIALS

The construction of a transcontinental railroad and ten 1<sup>st</sup> stage steel BF & BOF plants with associated infrastructures will inevitably introduce some leading WBP local environmental impacts that are negative, however in total contrast the shared global net environmental best practice outcomes will be vastly improved to leading WBP new benchmark standards when considering the PIB overall current practices correction. Indicating Phase -1 attainable corrections of 30m tpy of CO<sub>2</sub>.

Project Iron Boomerang has been designed to mitigate the negative impacts to the point, where the positive global environmental and economic impacts will set new world's best practice standards for the production of new Green Steel accreditation benchmark standards.

Environmental approvals will include consideration under the Commonwealth Environment Protection and Biodiversity Act, 1999 ("EPBC Act") and various state legislation and regulations relating to the natural environment, wildlife conservation, water, air and land conservation.

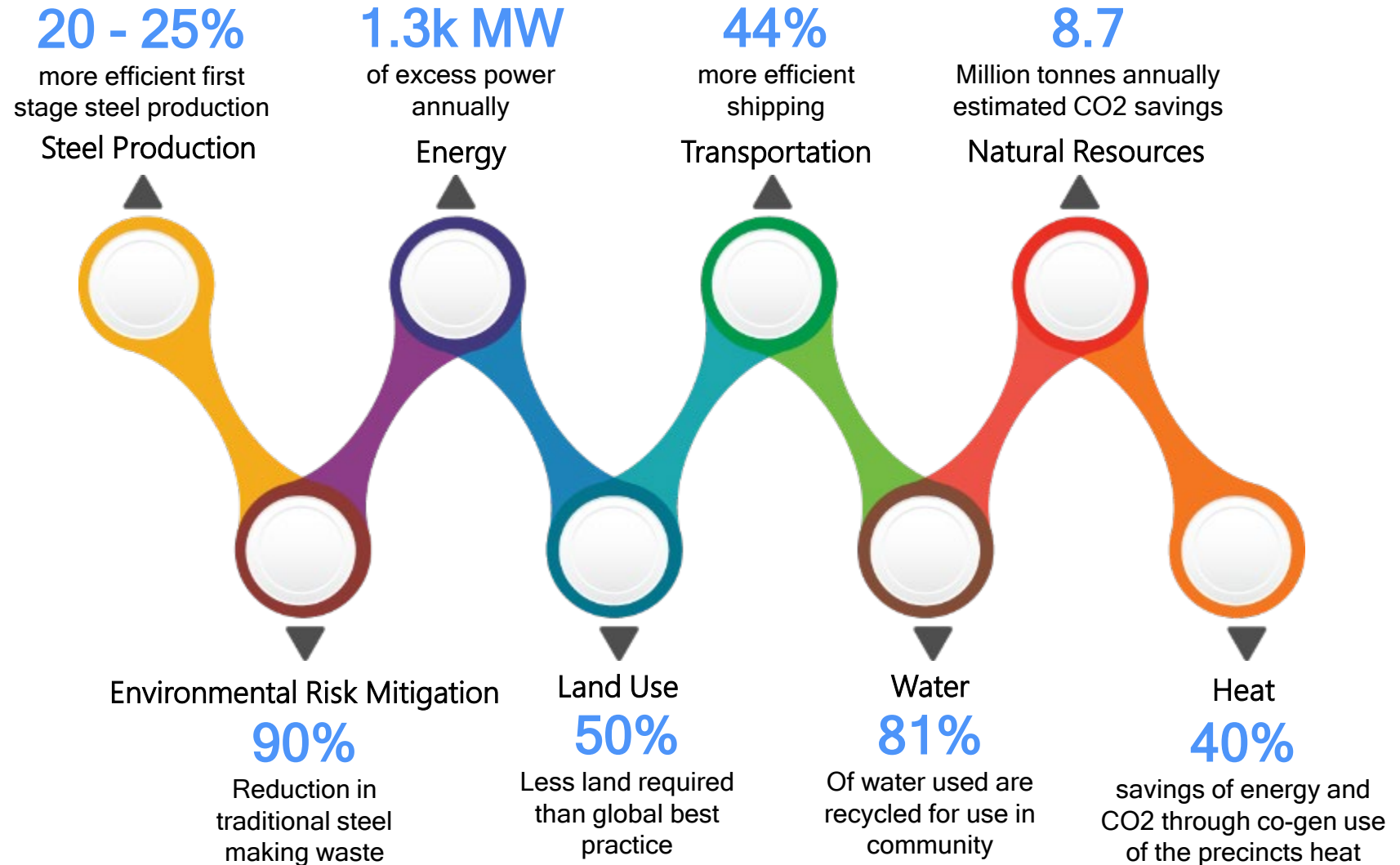


# PIB ENVIRONMENTAL CREDENTIALS

Project Iron Boomerang will deliver major global environmental benefits from improved transport efficiencies (especially avoidance of bulk ore carriers), modern first stage steel production techniques and efficient energy utilisation. The advantage of co locating smelters in shared service Steel Parks provides for superior environmental outcomes that are achievable and more affordable.

Coke plants and steel smelters have traditionally had high local impacts. Project Iron Boomerang (PIB) has been designed to exceed global best practice steel making, not only from an efficiency point of view but also importantly from an environmental point of view. PIB exceeds current legislation emission standards in all areas especially those areas that traditionally had higher environmental impact, like; sound, heat, water quality and solid wastes. Project Iron Boomerang will lead and set world's best practice in these areas and environmental impact as a whole.

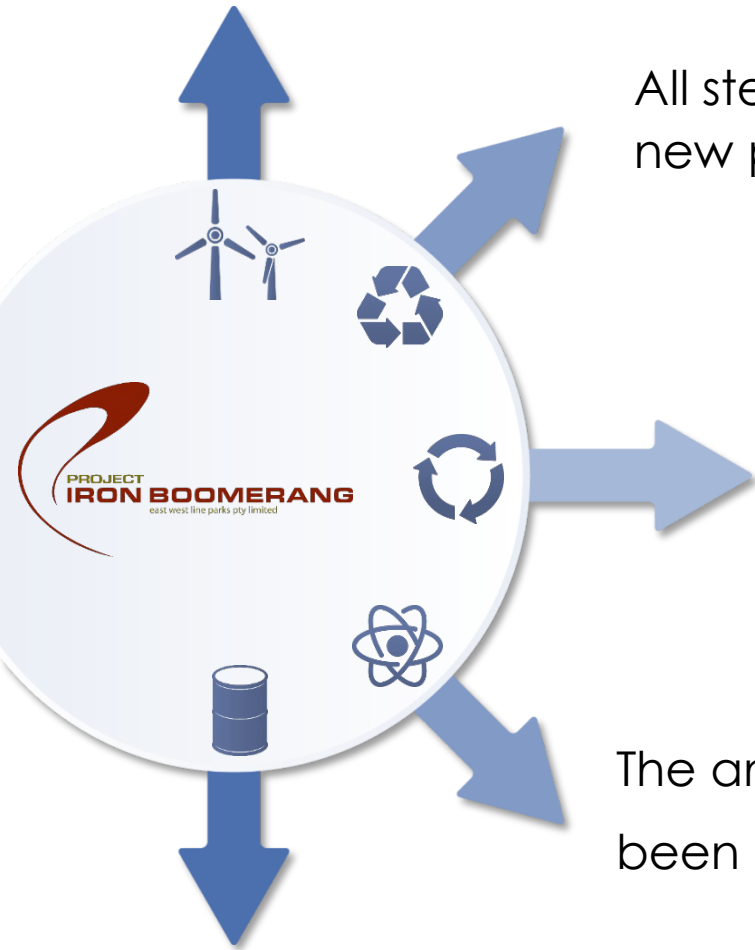
PIB's 44m tpy of 1st stage steel production plan will exponentially deliver new leading world's best practice benchmark CO2 targets against current operating practice correction efficiencies of 30m tpy or 680kg CO2 per t of steel reduction.



# STEEL IS ENVIRONMENTALLY FRIENDLY

Steel is the main material used in delivering renewable energy – **Solar, Tidal and Wind**

All steel created as long ago as **150 years** can be recycled and used in new products and applications.



**97%** of steel by-products can be reused.

The amount of energy required to produce a tonne of steel has been **reduced by 50%** in the past 30 years.

Almost **200 Billion** food cans are produced annually. This means refrigeration is not needed thus saving energy. These cans are also recyclable.

# WHERE TO FROM HERE

The PIB concept model is thoroughly well researched and tested with respected professionals and/or our major Corp Associates both nationally and overseas.

1. The collective conclusion is that PIB is the best place on earth to make sustainable 1st stage steel profits over the next 75yrs +; in both the worst or best of times.

- PIB represents a once in a century economic national industrial development opportunity for Australia!

2. Agenda “BFS” Bankable Feasibility Study already begun.

- **Federal State & Territory Governments** to commit and support this nation building project vision supporting and elevating the project to a **project of national significance status** – Your regional and professional sector support is called for in support nationally and internationally.
- **2019- 2023 \$200m BFS spend 3-4 years to construction of rail, ports ships and Steel Complex's with Sovereign Fund JV backing pledge to commit by 2022 to a PIB JV consortium to raise 100% Equity to \$70Bn.** Negotiations in play to conclude by June 2019.
- **The current political environment in N-Australia WA NT & QLD and particularly in N-Qld supports the national political timing and opportunity for PIB's vision research nation building plan calling for Australian political bipartisan commitment.**

**PIB - The World's Sustainable Future of Green Steel!**



An aerial photograph of a coastal region, likely a bay or inlet, with a boomerang-shaped graphic overlaid. The graphic is a thick, dark red line that curves from the top left, around the top, and back down to the left. The background is a starry night sky.

**PROJECT**  
**IRON BOOMERANG**  
east west line parks pty limited

Thankyou