Appendix 17


GAS
WATER
POTENTIAL FUTURE SERVICES
PROJECT IRON BOOMERANG CONTINENTAL RAIL CORRIDOR
OPTIC FIBRE
COMMUNICATIONS
PROJECT
IRON BOOMERANG
east west line parks limited

By Email: APXROI@dsdip.qld.gov.au

Registration of Interest – AP-X

Attention: Project Director

Infrastructure Policy

Department of State Development

Dear Sir/Madam,

East West Line Parks Limited (EWLP) refers to the abovementioned ROI process which seeks to identify private sector development proponents and prospective capacity seekers for the AP-X, with a view to awarding terminal development rights for parties with defined coal projects.

EWLP is not a proponent of a coal project and therefore may not fit the essential criteria as a Respondent to the ROI, however wishes to bring to your attention that it is the proponent of Project Iron Boomerang (PIB), a significant industrial project which we have proposed to the State will occupy a significant amount land within the Abbot Point State Development Area (APSDA).

EWLP has responded as a proponent to the separate Request for Information by the Coordinator General on behalf of the State, for developer interest in locating industries and infrastructure other than coal at the APSDA. We address this further below.

In addition, EWLP is also supporting a separate Response by its subsidiary FRSM Pty Limited (FRSM) which proposes to establish an iron making facility within APSDA, on which we provide further information below.

Project Iron Boomerang (PIB)

We attach, for your information, a copy of our Response ('Project Iron Boomerang Steelmaking Project') which addresses the CG's RFI request, and draw your attention to the following elements of our PIB proposal which are relevant to its establishment within the APSDA alongside any coal handling facilities that may also be proposed.

PIB is an infrastructure and manufacturing project which will develop a steel industry of international significance in Northern Australia. It includes the building of significant infrastructure including a transcontinental heavy haul rail line within a multi-user corridor 3,300 km in length linking the Bowen Basin metallurgical/coking coal mines in Central Queensland with the Pilbara iron ore mines of Western Australia.

PIB proposes to establish a Steel Precinct within the APSDA, linked by the rail corridor to a similar facility in the Pilbara, each of which will manufacture 22 million tonnes of slab steel products annually for export from its adjacent coast line.

Through its partnership with TATA Steel Consulting – UK (TSC), EWLP has confirmed PIB's strong economic case for the development in Northern Australia of the most globally competitive steel manufacturing and export facilities in the world. PIB will be Australia's largest infrastructure and manufacturing project, involving Capex of approximately $15 billion for the steel complex and associated infrastructure at APSDA, a similar amount in the Pilbara and approximately $14 billion for the transcontinental rail crossing. The value of high

quality slab steel products exported from APSDA to the world's expanding markets will exceed $10 billion annually and a similar amount will be generated from the Pilbara complex. In addition, secondary industries established downstream on the back of surplus heat and energy from the steel complex at APSDA, including cement manufacturing, bio-fuels and bio-plastics, will be capable of generating products for export with a value of approximately $5 billion.

EWLP is strongly pursuing the planning and development of PIB's necessary infrastructure, manufacturing plants and associated facilities while at the same time securing its necessary investment and technical input from steel manufacturing companies in Japan, Korea and their participation in the ongoing development of the project.

By consolidating international supply chain logistics PIB will change forever the current industry paradigm that Australia chooses only to export its world class coking coal and iron ore and import steel rather than 'value add' to its raw materials domestically. In doing so, PIB will also replace the need to ship more than twice the export tonnage of raw materials with the consolidated export of finished steel slab product, thereby improving national productivity and generating significant economic benefits to Queensland and the nation as a whole.

Separate from the sound economic case for PIB, as a matter of potential interest, we draw your attention to the economic benefits that will accrue to the nation from the transcontinental rail line which is already apparent from a separate study, by Ernst and Young and Everything Infrastructure for PIB. That study has demonstrated that the proposed rail corridor and 40 tal line provides by far the most efficient freight solution for coal from Queensland's Galilee Basin to Abbot Point, even as a stand alone project without any reliance on PIB's own tonnages.

EWLP has progressed its planning for PIB to the stage where it requires securing suitable land within the Abbot Point State Development Area to establish the Queensland smelter park Steel Precinct.

In this context, we draw your attention to the significant area of land with good port access required for PIB (approx 1200 ha) as identified in our aforementioned Response to the CG's RFI. In particular, you will note in section 4 thereof that we identify two site options for PIB within APSDA, referred to therein as Option 1 and Option2. We consider that each of these identified sites, which it has discussed with representatives of the State over many years, is compatible with its current understanding of heavy industry and other land uses proposed for the Abbot Point SDA and Port.

Further, you will note in section 4 of the Response that Option 1 requires the State's necessary understanding and acceptance that the proposed new coal facilities may be translated several hundred metres to the west of their currently indicated location as shown in the recent AP-X Invitation registration document. This minor adjustment would appear to allow an accommodation of the interests of both the proposed coal handling facilities and the proposed steel plant at the Option 1 site. Alternatively, a suitable accommodation for PIB's 1200 ha site in the locality of Option 1 could be achieved by adjusting the proposed location of the Hancock-GVK standard gauge coal rail corridor which is shown to pass through the eastern end of APSDA. Such an adjustment would appear to be possible and would also assist to secure a reservation for heavy industry at the eastern end of the APSDA, separate from coal at the western end.

We have also put forward our particular requirements for use of the common-user corridor in which PIB will require incorporating a duplicate standard gauge rail line for the export of

finished steel products and a conveyor by which it will receive deliveries from the wharf of significant raw materials.

We have also put forward PIB's requirements at the Port, in particular, suitable general cargo wharf facilities to receive essential incoming raw materials from bulk cargo ships and high value engineered products for installation in the steel complex construction phase. Our attached Response to the CG's RFI also describes the 'roll-on-roll-off' load out facilities required at the port to facilitate PIB's purpose designed Panamax size ships which will export the finished slab steel products.

EWLP considers that a spirit of openness in discussions about land use at APSDA would allow a suitable accommodation for all concerned and we confirm our strong desire to continue to participate in such discussions until a satisfactory solution is reached.

FRSM's SMART Materials Concept (SMC)

As introduced above, EWLP is also supporting a separate Response by its subsidiary FRSM Pty Limited (FRSM), which has launched an intensive pre-feasibility study into the SMART Materials Concept (SMC).

Please find attached for your further information and consideration a copy of FSRM's Response to the CG's RFI in response to this other significant project.

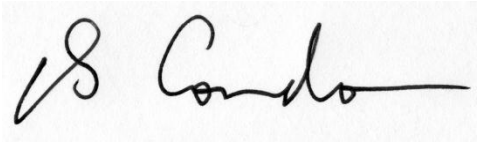
FSRM's intended site, as has been identified in discussions with the State for some time, would appear to present no particular conflict with the proposed coal facilities, however it is essential that its intended use of the common user corridor is understood and accepted in any future planning activities.

East West Line Parks Limited understands the importance of coal exports for Queensland and that coal requires a strong presence within the APSDA, however we are most keen to protect the interests of its nation-building projects, PIB and SMC. We are therefore strong advocates for ensuring that a suitable accommodation is arrived at for all concerned within APSDA.

We therefore look forward to mutually satisfactory discussions with the State on the development of our PIB and SMC proposals and to amicably resolving any land planning issues that might arise.

We request that your further enquiries on this matter be addressed in the first instance to our Mr Tom James at tom.james@ewlp.com.au or 0411 487 518

Yours faithfully,



Shane Condon

Managing Director & Founder

East West Line Parks Limited

Abbot Point State Development Area

Response to Request for Information – Possible development proposals

February 2013

FRSM Pty Limited

(A wholly owned subsidiary of East West Line Parks Limited)

SMART Materials Concept

Contact:

Haruhiko Kinase, Executive Project Manager

Haruhiko.kinase@ewlp.com.au

07 3221 6966

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Executive Summary

FRSM Pty Limited (FRSM) is the proponent of an innovative R&D and commercialisation project to initiate industry collaboration across the supply chain of the motor vehicle parts manufacturing industry both in Australia and internationally.

The purpose of the collaboration is the enable the supply of suitable-grade iron and steel products as a material feedstock to the industry internationally at a significantly more competitive cost than currently accessible. The project is therefore called the SMART Materials Concept (SMC) as it involves embedding improved supply chain logistics (from raw materials to parts manufacturing) into the iron and steel materials supplying the industry.

FRSM is a subsidiary of East West Line Parks Limited (EWLP) which is undertaking a related project involving potential steel production in Australia.

The current stage of development of the project has seen FRSM co-ordinate a cluster of significant local and international companies and industry bodies to undertake an intensive pre-feasibility study into the SMART Materials Concept.

Led by FRSM, this project is being undertaken in collaboration with

1) Nomura Research Institute (NRI), a leading Japanese Consulting Firm
2) A major Japanese Steel Company
3) A major Japanese Shipping Company
4) A major Japanese Trading Company
5) An Australian Mining Company
6) Some key Australian Car Parts Manufacturers
7) Industry Capability Network (ICN) and
8) The Australian Federation of Automotive Products Manufacturers (FAPM).

The project has also received strong support from the Queensland Government, Victoria Government, South Australian Government and Australian Federal Government.

The SMC aims to revolutionise the process for the manufacture of steel and vehicle parts in Australia, so that steel and other related products can be exported from Australia to the expanding markets of Asia-Pacific region.

This new opportunity aims to 'value add' to the existing Australian sourced raw materials to make higher value use of those resources domestically, provide avenues for import substitution for vehicle parts and other steel products made from such raw materials otherwise shipped to foreign markets, and improve the competitiveness of the manufacturing process for these products in Australia.

The improved efficiency of the supply chain will deliver triple bottom line benefits in terms of improved environmental outcomes through lower carbon emissions and economic dividends flowing from comparative competitive advantage.

Thus the project will deliver:

- Improved supply chain cost efficiencies
- Reduced carbon emissions
- Improved resource management/consumption sustainability
- Value-added steel product manufacturing

- Domestic employment security in Auto parts manufacturing.

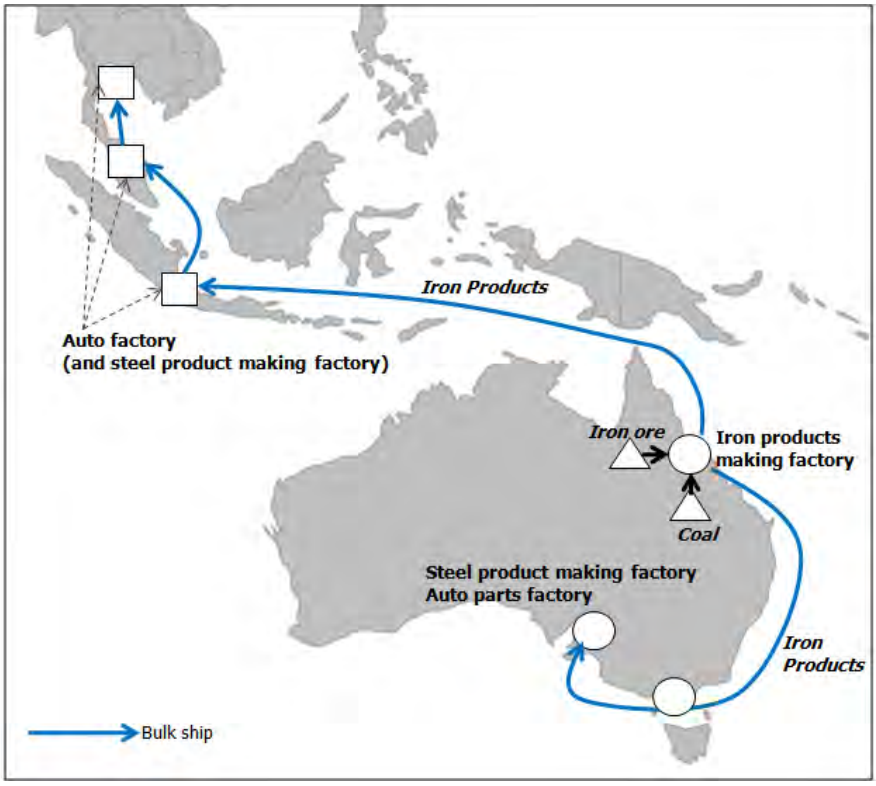


Figure 1: Illustration of the SMC High Level Supply Chain

The SMC is based on using iron products from a new highly efficient, high-tech iron making complex in Queensland, so that the steel and other materials can be manufactured into value-added products for international export to the expanding markets of Asia Pacific. This will allow this added value to be captured in Australia instead of shipping large volumes of raw materials to Asia.

By co-ordinating the links of the supply chain from raw materials extraction to motor vehicle manufacturing, the SMC has great potential to transform the steel and parts manufacturing sector in Australia and generate significant benefits for the industrialised states of Victoria and New South Wales and the resource rich states of Queensland and South Australia. The SMC would thereby consolidate supply chain logistics, improve productivity through operations efficiency and initiate new iron production in Australia.

The now completed Pre-Feasibility Study Report has identified significant new business opportunities within Australia and the potential for exports from Australia to South East Asia.

These new opportunities to 'value add' to the existing manufacturing process for these products will replace the need to ship large volumes of non-value-added raw materials to foreign markets from which source materials must be imported back into Australia for steel products manufacturing, including car parts.

The main findings of the report are as follows:

- Indicative FOB (Free on Board) prices of iron products at Abbot Point, Queensland were **USD 323.1** as of Sep 2012, **USD 380.1** as of Dec 2011 and **USD 261.6** as of Sep 2007. These prices were much lower than global scrap steel market prices (price range: **USD 350-390** as of Sep 2012, **USD 410-460** as of December 2011 and **USD 320-370** as of September 2007, Reference: Metal Bulletin).

- Pre-Feasibility Study analysis shows that SMC has a great potential global cost competitiveness for selling iron products from Queensland to Asian countries in both booming (e.g. Sep 2007), and depressed (e.g. Sep 2012 and Dec 2011) economic cycles.
- This new model will benefit domestic manufacturers through increased viability by tapping into the local production of Iron Products. For example, our indicative CNF Prices of iron products at South Australia were **USD 339.5** (Sep 2012), **USD 399.1** (Dec 2011) and **USD 299.3** (Sep 2007) and these numbers were lower than market price of scrap steel (providing a **USD 11- 70** cost advantage).
- Estimated annual CO2 Emission savings through supply chain consolidation are **81,746 tonnes** (per year).
- Estimated annual carbon price saving is around **USD 1.9 million** every year (USD1.9 saving for every ton of iron/steel products) achieved by carbon footprint reduction.
- Combined with the SMC innovation model being proposed to global auto manufacturing sectors, this also creates business opportunities for auto parts industries in Australia.
- In the global scrap steel market, USA dominates as the No.1 scrap steel exporter. USA is also the biggest scrap steel exporter to Thailand, Malaysia and Indonesia. Due to the long freight distance, CNF prices at these countries are high and volatile. However, Thailand, Malaysia and Indonesia have had little choice but to continue to import scrap steel from USA due to limited available supplies from other countries. As a result, our estimated scrap steel CNF prices at these countries (from USA) are higher than world average scrap steel prices. Australia is also one of the biggest scrap steel exporters (No.2 or No.3) to Thailand, Malaysia and Indonesia.
- The new model proposes to expand Australia's opportunity to export iron products which can replace scrap steel to the mass market in South East Asia. The advantage of this is that estimated price savings at these countries are **USD 43-151/tonne** (price reduction).
- There are opportunities to reduce/stabilise the procurement cost of raw materials (iron ore and coal from resources proximate to the proposed iron production site at Abbot Point State Development Area).
- Lower grade iron deposits have been identified in waste waste spoil piles and residue located relatively near the port of Townsville. There are also some potential new iron ore deposits in the adjacent area. Collaboration with a Queensland-based mining company and a Japanese steel company is continuing to identify, quantify and value the potential resources.
- Another Queensland (coal) company operating near Abbot Point is considering new projects; including one which will not have any processing plant at the mine site. If the quality of coal satisfies the requirements from the steel company to utilise with its latest technology, it could have potential to reduce the procurement cost of coal.
- The SMC would also consolidate supply chains and logistics, as well as iron production and provide productivity gains through operations efficiency and lower environmental impact.

1. Details of Respondent

1.1 Name and Address of Respondent

FRSM Pty Limited, company incorporated in Queensland

(a subsidiary of East West Line Parks Limited)

Level 16, 344 Queen Street Brisbane QLD 4000

1.2 Business Registration Details

ACN Number: 152 994 940
ABN Number: 67 152 994 940

2. Details of Project

2.1 Project Name

SMART Materials Concept

2.2 Type of Industry/Sector

1. Iron and steel industry
2. Logistics/supply chain
3. Car Parts Industry
4. Mining Industry (Iron Ore and Coal)
5. International Trade

3. Import or Export

3.1 Import or Export Facilities Required

The following facilities will be required to store and transport the raw materials received from local suppliers.

Import:

Raw materials, additives & utilities	Required facilities
Iron ore and coal (QLD resources)	Road, Rail and related infrastructure (loading/ unloading facility, conveyors, stockyard)
Natural Gas	Pipeline and storage area
Water	Pipeline and storage area
Oxygen, Nitrogen, Industrial Air and Processing air	Storage area

Export (to port and beyond):

Products	Required facilities
Iron Products	Road, Rail and other related infrastructure (unloading/ loading facility, conveyors, stockyard) Loading Facilities

4. Land Requirements

4.1 Size of Site

In relation to Abbot Point SDA, the project once implemented will involve situating an iron making facility in a suitable location with access to rail infrastructure for material and other supplies, and to the port of export ot other Australian states and overseas.

The total site footprint is anticipated to be approximately 24 ha (e.g. 300m x 800m or 400m x 600m)

4.2 Compatibility with Other Land Uses

The proponent considers that the site it has identified for its SMART Materials Concept is compatible with its current understanding of heavy industry and other land uses proposed for the Abbot Point SDA and Port.

FRSM proposes to undertake more detailed design and site investigation to determine the most suitable site and to enter into more detailed discussions with the State and other relevant planning authorities to establish the compatibility with other proposed industries and land uses.

4.3 Topography and Geology Requirements

The proposed iron manufacturing facility represents the heaviest of industrial applications and will require suitable natural ground conditions and the provision of heavy duty plant foundations.

The particular foundation designs are required for any particular part of the iron making site has not been determined yet.

While the proponent has done desktop reviews of the geological conditions likely to be encountered at various parts of the APSDA, a full site investigation including an assessment of subsurface conditions, soil strength, depth to rock, and groundwater attributes will be undertaken at an appropriate time to determine suitable types of foundation design solutions.

4.4 Flood Immunity Requirements

The proponent is unaware of any detailed flood studies done for the APSDA site and has therefore not yet assessed its proposed site for natural flood immunity characteristics.

The iron making site will be designed with a flood immunity return interval of 1:100 years.

4.5 Extreme Weather Immunity

The plant will be designed to comply with Australian engineering design codes including assessments to withstand cyclonic winds.

5. Project Design

5.1 Proximity to other Port Infrastructure

It will be essential that the project facility located at APSDA have access to port facilities as detailed below. Current investigations also give consideration to having access to -

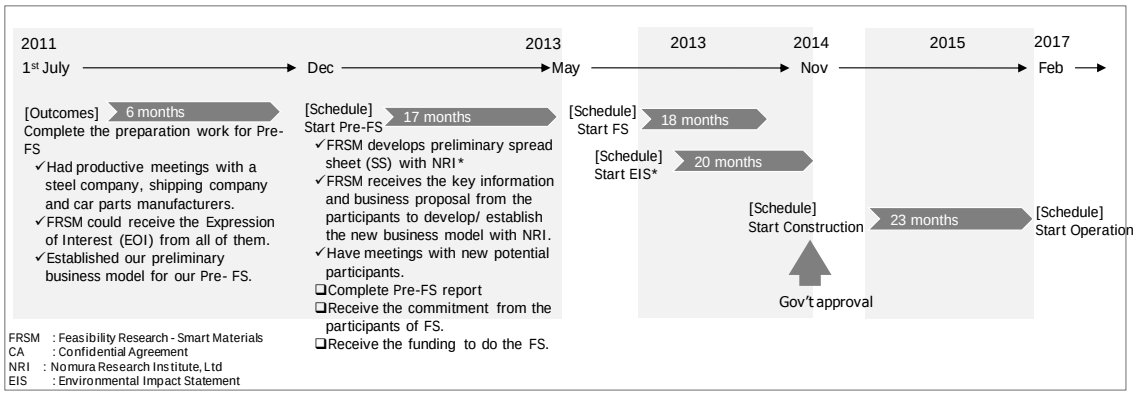
1) Townsville port or
2) Gladstone port

5.2 Plant Layout Structure - Preliminary

Full details of the structure and layout of the plant are in the planning stage now and will need to be refined depending on the nature of the site ultimately identified and agreed with Government as suitable. Further details can be provided confidentially to government when appropriate.

5.3 Proposed Timing

Indicative Schedule



5.4 Waste Facilities

The iron making plant, currently proposed to be established by an international steel company, will be a state of the art iron making facility to enable the production or iron nuggets. The type of plant proposed will have considerably lower emissions of CO2, SO2, NOx and other constituents than blast furnaces, and avoids the environmental problems of coke ovens and sinter plants.

The following wastes will be produced and require the following management:

1) Air treatment,

2) Water treatment

3) Materials recycling centre

4) Slag

The iron making plant will also produce the "slag" as a by-product. Slag will be utilised for the manufacture of cement, asphalt and coral reef rehabilitation.

5.5 Conveyor and Rail Infrastructure requirements

5.5.1 Conveyors (between the site and a port)

	Production volume per day	Unit	Production volume per year	Unit
Iron Products	2,740	MT/day	1,000,000	MT/Year

Please refer to the map in section 4.1.

5.5.2 Rail Connectivity

The rail connectivity will be an essential requirement of the proposed iron making plant with a spur from the existing Queensland railway line to the site (Transport iron ore and coal)

Please refer to the map in section 4.1.

5.6 Pipelines Required

A water and possible gas pipeline connection to the site will be required.

5.7 Cooling Ponds/Towers

At this stage, design of the water treatment plant and the specifics of heat exchangers either by cooling towers or closed circuit cooling systems has not been developed and will be subject to further discussion and development with technological equipment designers.

6. Port Design

6.1 Port Capacity Required

A General Cargo wharf will be required to export the iron products. Conveyor access will also be required at the port to facilitate ship loading.

The expected volume of the iron products is as follows:

	Production volume per day	Unit	Production volume per year	Unit
Iron Products	2,740	MT/day	1,000,000	MT/Year

It is anticipated that Panamax and/ or Handy-max international cargo ships will be used to transport the iron products to export destinations. Further information will be sought and requirements discussed with the Japanese shipping company participating in the project.

6.2 Ship Loading Separation distances

Normal navigation rules for Panamax vessels would apply. The proponent understands that at berth alongside the wharf, the required tail to tail distance is the length of the Panamax ship plus a minimum clearance of 33m.

6.3 Shipping Separation distances

Under steam, the proponent understands the minimum side to side clearance for the Panamax size ship 100 metres and the required tail to tail clearance is the length of the Panamax ship plus a minimum clearance of 500 metres.

6.4 Channel Clearance for Passing Vessels

Similarly, the proponent understands the minimum width of the channel to allow Panamax size vessels to pass side by side is 165.1 metres (5 times the beam/width of the ship)

6.5 Safety Exclusions Zone Requirements

Not applicable to this project.

6.6 Dangerous Goods Exclusion Zones Requirements

Not applicable to this project.

7. Impact on Community and Benefits to the State

7.1 Key Benefits for the Region/State/Nation

The key benefits likely to be delivered by this project are:

- New investment in industrial facilities at APSDA
- Increased diversity of economic activity in the SDA and the region
- A new opportunity to 'value add' to the existing Australian sourced raw materials
- Improved supply chain logistics for raw and value added materials
- Linking the supply chains of raw materials to predetermined end markets
- Significant new employment in both construction and operational phases
- Technology transfer benefits through the introduction of specialist iron production techniques and plant not currently available in Australia

The SMC will kick-start specialized direct reduced iron (DRI) manufacturing locally in Australia to enable cost effective materials to be made readily available for local steel and car parts manufacturers. This will dramatically improve the potential for local manufacturing of steel and related steel parts, capturing this added value in Australia and creating the potential to export these products to the expanding markets of Asia.

The project will facilitate collaboration between steelmakers and manufacturers to transform Australia's steel and parts manufacturing sector.

Leveraging the locally available primary materials with production of an Australian-based industrial iron production complex and partnering with Japanese companies with access to best-available technologies, Australian steel and auto parts manufacturing companies will gain the potential to significantly enhance their global competitiveness.

Key Australian auto parts manufacturers and the national Federation of Automotive Products Manufacturers (FAPM) are participant members of the R & D cluster formed to undertake the feasibility assessments of the project. Other participants, as outlined above, include international steel, shipping and car making companies.

7.2 Labour Force Requirements and Community Impacts

1) Labour Force Requirements

   Construction Phase: 1,000 -1,500 direct employees

   Operation phase: 100 direct employees

2) Community Impacts

   The are no adverse impacts given the location of the facility. The project anticipates that 300-400 employees will also be required for supporting service industries associated with the project.

7.2 Airspace

7.2.1 Airspace Impacts

The iron making site comprising iron making plant and many associated purpose designed plant elements for the iron making processes At this stage the buildings have not been designed in detail.

8. Throughput

8.1 Product Type and Volume

Based on new technology, source iron product is to be produced as a possible replacement for high quality scrap steel/pig iron as inputs for the Basic Oxygen Furnace or Electric Arc Furnace process in steel manufacturing.

The project aims to produce an annual target of 1 million tonnes of cost effective iron products (i.e. iron nugget).

8.2 Key Inputs and Outputs of Production

- Key Inputs

Items			Unit consumption per day Iron nugget production	Unit	Unit Consumption per annum Iron Nugget Production	Unit
Raw Materials	1)	Pellet feed/ iron Ore Fine	4,110	MT	1,500,000	MT
	2)	Non Coking Coal	1,370	MT	500,000	MT
	3)	Iron Oxide (lump ore / Pellet)		MT		MT
	4)	Natural Gas		GJ		GJ
Additives & Utilities	1)	Natural Gas Burner Fuel	12,603	GJ	4,600,000	GJ
	2)	Electricity	547,945	kWh	200,000,000	kWh
	3)	Water	5,479	m^3	2,000,000	m^3
	4)	Oxygen		m^3		m^3
	5)	Nitrogen	32,877	m^3	12,000,000	m^3
	6)	Industrial Air, Processing Air	232,877	m^3	85,000,000	m^3

- Key

	Production volume per day	Unit	Production volume per annum	Unit
Iron Products	2,740	MT/day	1,000,000	MT/y

9. Logistics

9.1 Freight Infrastructure Requirements

Rail/ Train	Iron Ore and Coal
Road/ Truck	Iron Ore and Coal
Shipping	Iron Products

9.2 Rail/Train Transport Requirements

	Annual Consumption (thousand tpy)
Iron ore (Local)	1,500
Coal (Local)	500

9.3 Road/Truck Transport Requirements

	Annual Consumption (thousand tpy)
Iron ore (Local)	1,500
Coal (Local)	500

9.4 Shipping Requirements

	Annual Production (thousand tpy)	Loading capacity of each ship (thousand ton)	Number of trips per year
Iron product (QLD->Thai)	1,000	50	20

10. Utilities

10.1 Water Infrastructure Requirements

Required water infrastructure	**Annual water consumption**
Water Supply Facility	2,000,000 m^3 tpy
Water Treatment Facility	
Water Storage Facility	

10.2 Energy Infrastructure Requirements

Required Energy infrastructure	**Annual Power consumption**
Power Supply Facility	200,000,000 kwh tpy
Power Transmission Facility	
Power Storage Facility	

10.3 Gas Infrastructure Requirements

Required Gas infrastructure	**Annual Gas consumption**
Gas Supply Facility	4,600,000 GJ tpy
Gas Transmission Facility	
Gas Storage Facility	

11. Suppliers and Customers

11.1 Product Source

Qld Mining Companies (Iron Ore and Thermal Coal)

11.2 Supplier Information

A Japanese Steel Company

An Australian Steel Company

11.3 Customer Information

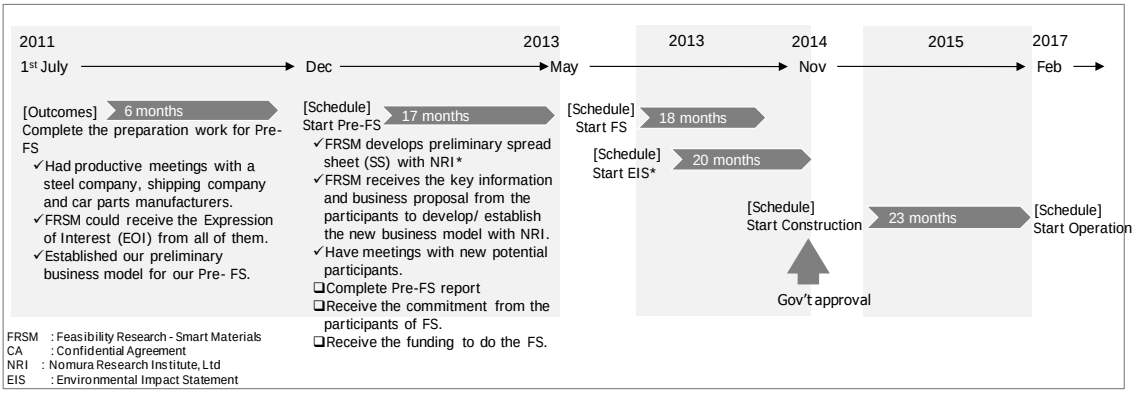
Australian Car Parts Manufacturers

A Japanese Trading Company

12. Project Status

12.1 Project Planning

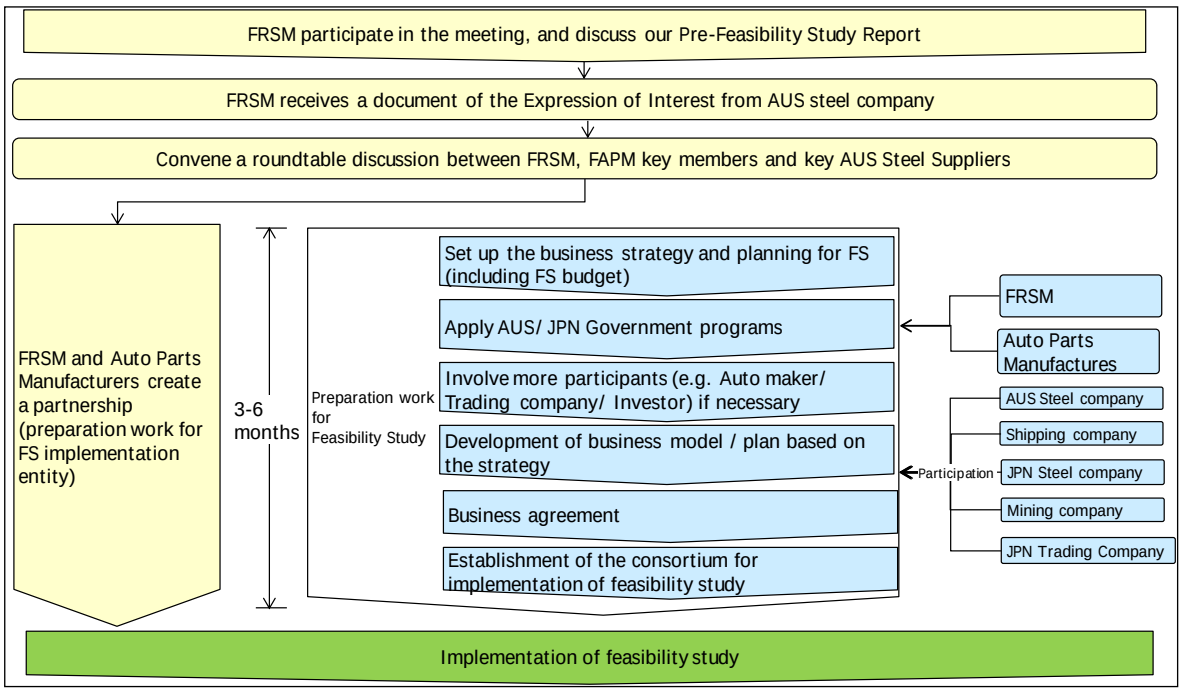
Indicative Schedule



12.2 Project Next Steps

As the project has received interest from Australia and overseas, there are two major steps which FRSM has as follows:

1) business model developed for next stage of Feasibility Study collaboration



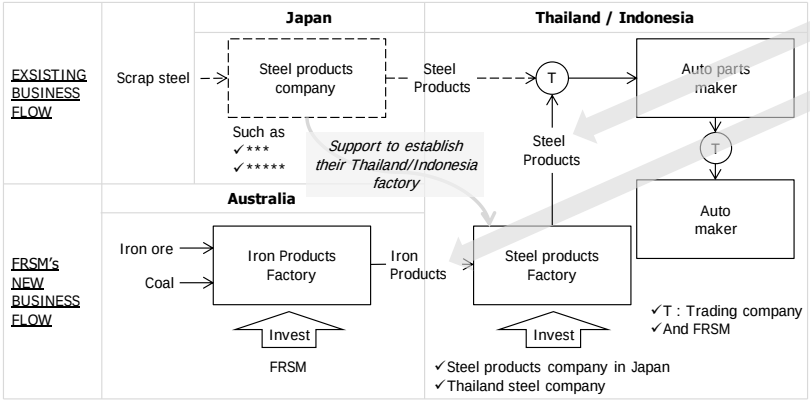
After receiving Expressions of Interest from the Car Parts Manufacturers, FRSM and FAPM (Car Parts Manufacturers in Australia) are preparing to convene a Roundtable of relevant stakeholders to clarify information needs and gaps to enable feasibility to assess commercial and business profitability.
The Roundtable between FRSM and FAPM key members will also enage an Australian Steel company. The ICN (Industry Capability Network) which has is providing liaison support with key partners and Australian Steel companies.

A key outcome of the Roundtable will be the forging of a partnership between FRSM and strategic auto parts manufacturers to oversee work in preparation for a FS Implementation Project Management entity.

2) Develop the business model in South East Asia from Australia

■ Business flow

● FRSM plans to establish a new business flow to introduce a steel products factory beside Auto makers in Thailand / Indonesia in order to implement our iron products business in Australia.



■ R&Ds are needed

● Task 1 : R&D for creating production method, procedure, technologies and techniques to produce high quality steel products as car parts using iron products.

● Task 2 : R&D for identification of iron products specification to produce high quality steel products.

■ Budget for R&D implementation

● Total AUD**,***
*,***,*** as \90/AUD

● Australian Federal government fund with cooperation of Queensland state government (45%)

● JPN NEDO or other government institution for R&D support (45%)

● Thailand/ Indonesia government or other fund for developing industries in developing countries organized entities such as World Bank, UNDP and UNEP (10%).

■ Participants for R&D implementation

● Leader : FRSM Pty Limited

● Members :

- JPN steel products company as a entity to identify production process, create technologies and techniques, and identify iron products specification
- Thailand/ Indonesia steel company as a entity to review production process and create process design with Thailand's/ Indonesian law and regulation
- JPN iron products production system maker as a entity to customize iron production system to fit identified iron products specification

● Advisor:

- JPN trading company as a entity to support to identify specifications of high quality steel products and supply chain to Auto parts maker / Auto maker
- JPN auto maker as a entity to identify specifications of high quality steel products

● Organizer : Nomura Research Institute, Ltd

After receiving the interest from the Japanase steel company and trading company associated with internation auto makers, FRSM plans to establish a new business partnership to establish a steel products factory beside auto makers in Thailand and Indonesia.

FRSM, the Japanese steel company and auto industry trading company will then look to collaborate with Government to implement the following things:

i. Creating production method, procedure, technologies and techniques to produce high quality steel products as car parts using our iron products

ii. Identification of iron products specification to produce high quality steel products

Abbot Point State Development Area

Response to Request for Information – Possible development proposals

February 2013

East West Line Parks Limited

Project Iron Boomerang Steelmaking Project

Contact:

Tom James, Project Director

tom.james@ewlp.com.au

0411 487 518

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Executive Summary

East West Line Parks Limited (EWLP) is the proponent of the nation-building project known as Project Iron Boomerang (PIB), an infrastructure and manufacturing project which will develop a steel industry of international significance in Northern Australia.

The project includes the building of significant infrastructure including a transcontinental heavy haul rail line within a multi-user corridor 3,300 km in length linking the Bowen Basin metallurgical/coking coal mines in Central Queensland with the Pilbara iron ore mines of Western Australia.

PIB proposes to establish a Steel Precinct within the Abbot Point State Development Area (APSDA), linked by the rail corridor to a similar facility in the Pilbara, each of which will manufacture 22 million tonnes of slab steel products annually for export from its adjacent coast line.

Through its partnership with TATA steel Consulting – UK (TSC), the proponent has examined its 2007 Pre-feasibility Study at a deeper level and recently (2012/13) reconfirmed PIB's strong economic case to develop a more competitive steel manufacturing industry in Northern Australia than anywhere else in the world. PIB will will be Australia's largest infrastructure and manufacturing project, involving Capex of approximately $15 billion for the steel complex and associated infrastructure at APSDA, a similar amount in the Pilbara and approximately $14 billion for the transcontinental rail crossing. The value of high quality slab steel products exported from APSDA to the world's expanding markets will exceed $10 billion annually and a similar amount will be generated from the Pilbara complex. In addition, secondary industries established downstream on the back of surplus heat and energy from the steel complex at APSDA, including cement manufacturing, bio-fuels and bio-plastics, will be capable of generating products for export with a value of approximately $5 billion.

The proponent is continuing to strongly pursue the planning and development of the required infrastructure, manufacturing plants and associated facilities while at the same time securing necessary investment and ongoing technical input from steel manufacturers. The proponent has developed strong relationships with the leading steel manufacturing companies in Japan, Korea and China and is pursuing the ongoing development of the project with the following committed planning partners.

1) TATA Steel Consulting, UK (TSC) - a leading consultant to the world steel industry
2) Nomura Research Institute (NRI) - a leading Japanese consulting firm
3) Engenium – Australia's leading heavy haul rail designers.

By consolidating international supply chain logistics PIB will change forever the current industry paradigm that Australia chooses only to export its world class coking coal and iron ore and import steel rather than 'value add' to its raw materials domestically. In doing so, PIB will also replace the need to ship more than twice the export tonnage of raw materials with the consolidated export of finished steel slab product, thereby improving national productivity and generating significant economic benefits to Queensland and the nation as a whole.

With a strong focus on productivity, longterm sustainability and energy efficiency, TSC has assessed the proposed steel plant meets world's best productivity benchmarks for slab steel production with a labour input of 0.25 manhours/tonne compared to a typical world figure of 0.5 manhours/tonne.

TSC estimates the energy consumption of the facility to be approximately 16GJ/tonne of slab, which is of the order of 15-20% better than typical world wide practice. Further, it will also deliver an environmentally sound plant with low emissions to the atmosphere by world standards. These

environmental benefits on a world scale add to the substantial savings in greenhouse gas emissions from the supply chain consolidation that accrues by shipping finished slab steel outside Australia, rather than shipping more than double the volume of iron ore and coal as raw materials.

The focus on long-term sustainability and energy efficiency brought into play a collaboration between TSC and NRI, to develop sustainable uses for surplus gas, energy and heat from the steel complex. This collaboration has identified the potential to develop significant secondary industries including cement manufacture, bio-fuels and bio-plastics which would naturally follow the establishment of the steel complex. PIB would create the world's first sustainable industrial and residential complex located in Queensland, sustaining upwards of 40,000 people who will be drawn to the region's newfound industrial profile.

The improved efficiency of the supply chain will deliver triple bottom line benefits in terms of improved environmental outcomes through lower carbon emissions and economic dividends flowing from its competitive efficiency advantage.

Separate from the sound economic case for PIB, the proponent notes the economic benefits that will accrue to the nation from the transcontinental rail line which are already apparent from a separate study, by Ernst and Young and Everything Infrastructure for PIB. The study has demonstrated that the proposed rail corridor and 40 tal line provides by far the most efficient freight solution for coal from Queensland's Galilee Basin to Abbot Point, even as a stand alone project without any reliance on PIB's own tonnages.

Thus Project Iron Boomerang will deliver:

- A nation building opportunity to leverage domestic raw materials into a modern, internationally competitive steel industry on a significant scale.
- Australia's largest infrastructure and manufacturing project.
- Improved supply chain cost efficiencies and technology transfer benefits through partnerships with international steel companies with access to world's best technologies
- Improved resource management/consumption sustainability
- Reduced carbon emissions on a global scale
- Facilitation of significant secondary industries at the APSDA
- Significant regional domestic employment in both construction and operational phases
- Increased diversity of economic activity in the APSDA and the region
- A transcontinental, standard gauge rail line with 40 tonne-axle-load efficiency which will open up the enormous economic potential of stranded inland mineral reserves.

Figure 1: Locational Overview of Project Iron Boomerang

EWLP has progressed its planning for PIB to the stage where it requires to secure suitable land within the Abbot Point State Development Area to establish the Queensland smelter park Steel Precinct.

Accordingly, we respond herewith to the Coordinator-General's Request for Information (RFI) which seeks developer interest in locating industries and infrastructure other than coal at Abbot Point (APSDA). In doing so, we present an outline of our proposed nation-building project, which will develop an environmentally and economically sustainable world-class steel industry in Northern Australia.

PIB will contribute to significant regional development in Queensland. It will continue to deliver nation-building benefits to the State and the Commonwealth for the long term and, accordingly, deserves the State's strong support when allocating land appropriately within the APSDA.

The proponent draws attention to the significant area of land with good port access required for PIB (approx 1200 ha) and we identify two site options for PIB within APSDA, referred to as Option 1 and Option2. We considers that each of these identified sites, which we have discussed with representatives of the State over many years, is compatible with our current understanding of heavy industry and other land uses proposed for the Abbot Point SDA and Port.

Further, the proponent also requests that the realisation of Option 1 would require the State's necessary understanding and acceptance that the proposed new coal facilities may be translated several hundred metres to the west of their currently indicated location as shown in the recent AP-X Invitation registration document. This minor adjustment would appear to allow an accommodation of the interests of both the proposed coal handling facilities and the proposed steel plant at the Option site. Alternatively, a suitable accommodation for PIB's 1200 ha site at Option 1 could be achieved by adjusting the proposed location of the proposed standard gauge coal rail corridor which is shown to pass through the eastern end of APSDA. Such an adjustment would appear to be possible and would also assist to secure a reservation for heavy industry at the eastern end of the APSDA, separate from coal at the western end.

The proponent also puts forward herein its requirements at the Port for suitable general cargo wharf facilities at which PIB would receive essential incoming raw materials from bulk cargo ships and high value engineered products for installation in the steel complex construction phase. It

also describes the 'roll-on-roll-off' load out facilities required at the port to facilitate its purpose designed Panamax size ships which will export the finished slab steel products.

The proponent considers that a spirit of openness in discussions about land use at APSDA and development of suitable facilities at the Port would arrive at a suitable accommodation for all concerned and confirms its strong desire to continue to participate with the State in such discussions until a satisfactory solution is reached.

1. Details of Respondent

1.1 Name and Address of Respondent

East West Line Parks Limited

Level 16, 344 Queen Street Brisbane QLD 4000

1.2 Business Registration Details

ACN Number: 118 581 883
ABN Number: 21 118 581 883

2. Details of Project

2.1 Project Name

Project Iron Boomerang

2.2 Type of Industry/Sector

1. First stage steel products manufacture
2. Logistics/ supply chain industry
3. Multi-disciplinary heavy construction
4. Mining Industry (Iron Ore and Coal)
5. International Trade
6. Power Industry
7. Secondary Manufacturing Industries (incl cement, bio-fuels and bio-plastics)

3. Import and Export Facilities

3.1 Import and Export Facilities Required

The following facilities will be required to store and transport the raw materials procured for the steel manufacturing process and the steel slab products produced.

Import or Generate:

Raw materials, additives & utilities	Required facilities within the Steel Precinct
Iron ore and coking coal (resources from Qld and WA)	Transcontinental Rail and related infrastructure (loading/ unloading stacker reclaimers, conveyors, stockyard)
Limestone, dolomite and miscellaneous fluxes (shipped to Abbot Point Port)	Port unloading facilities, conveyor, stockyard.
Natural Gas (regional Queensland resource)	Pipeline and storage
Water (regional Queensland resource)	Pipeline and storage
Oxygen, Nitrogen, Industrial Air and Processing air	Air Separation plant and storage
Coke for blast furnaces and sinter plants	Coke oven plants
Burnt lime for sinter plants and steel plants	Lime plant and storage
Sinter	Sinter Plant
Iron production	5 Blast furnaces each of 4.4 million tonnes of hot metal per annum
Steel	Steel plant

Export (at the port):

Products	Required facilities
Steel as slab (or perhaps as coil)	Overhead crane tong lifters at the steel plant, twin rail tracks to the port, rail wagons for roll-on-roll-off loading of special purpose slab ships.

4. Land Requirements

4.1 Size of Site

PIB's Steel Precinct at Abbot Point will be a manufacturing project on a world scale and occupy a site of approx 1200 ha (approx 4600m x approx 2600m).

In addition, on the back of the surplus gas, energy and heat it produces, manufacturing facilities in related industries are likely be developed requiring a further 800 ha of land.

PIB's pre-eminence as a nation building project requires careful attention be given to ensuring it is appropriately situated. While the significant size of the 1200 ha Steel Precinct limits the number of possible sites on which to locate it within the APSDA, the proponent has identified 2 such options.

Option 1: On northern side of the Bruce Highway and North Coast Rail line.

Option 2 (2A and 2B): On the southern side of the Bruce Highway and North Coast Rail line, to the west of Mt Roundback.

Figure 2 is a location map of the Abbot Point SDA and Port site showing existing and proposed coal and port facilities and on which we have overlaid the two site options identified for PIB's proposed Steel Precinct. It also shows proposed indicative locations for rail and other infrastructure for the receival of of raw materials and the export of PIB's finished slab steel products.

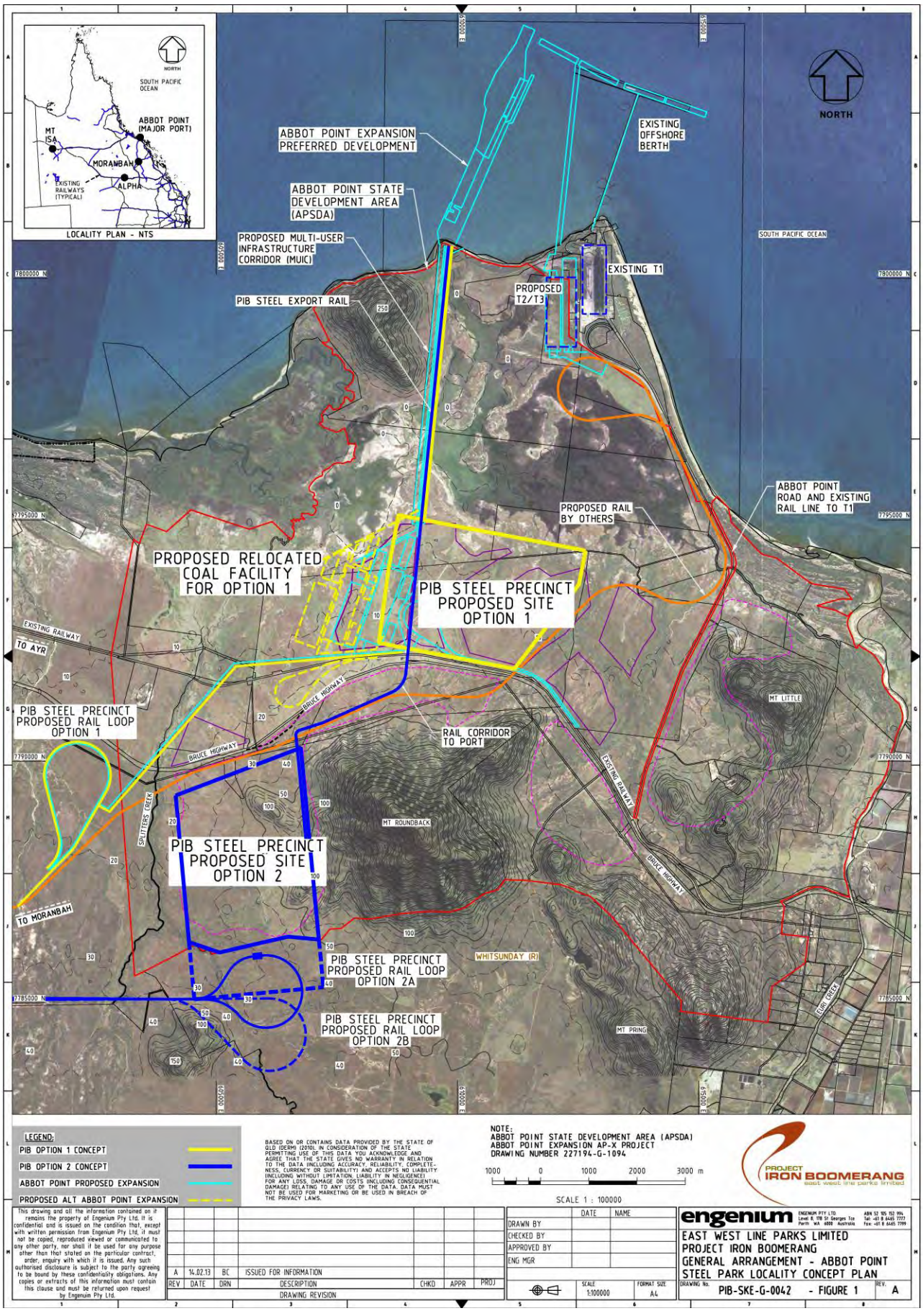

Figure 2: Steel Precinct Site Options

Option 1 is shown in perspective view in Figure 3.

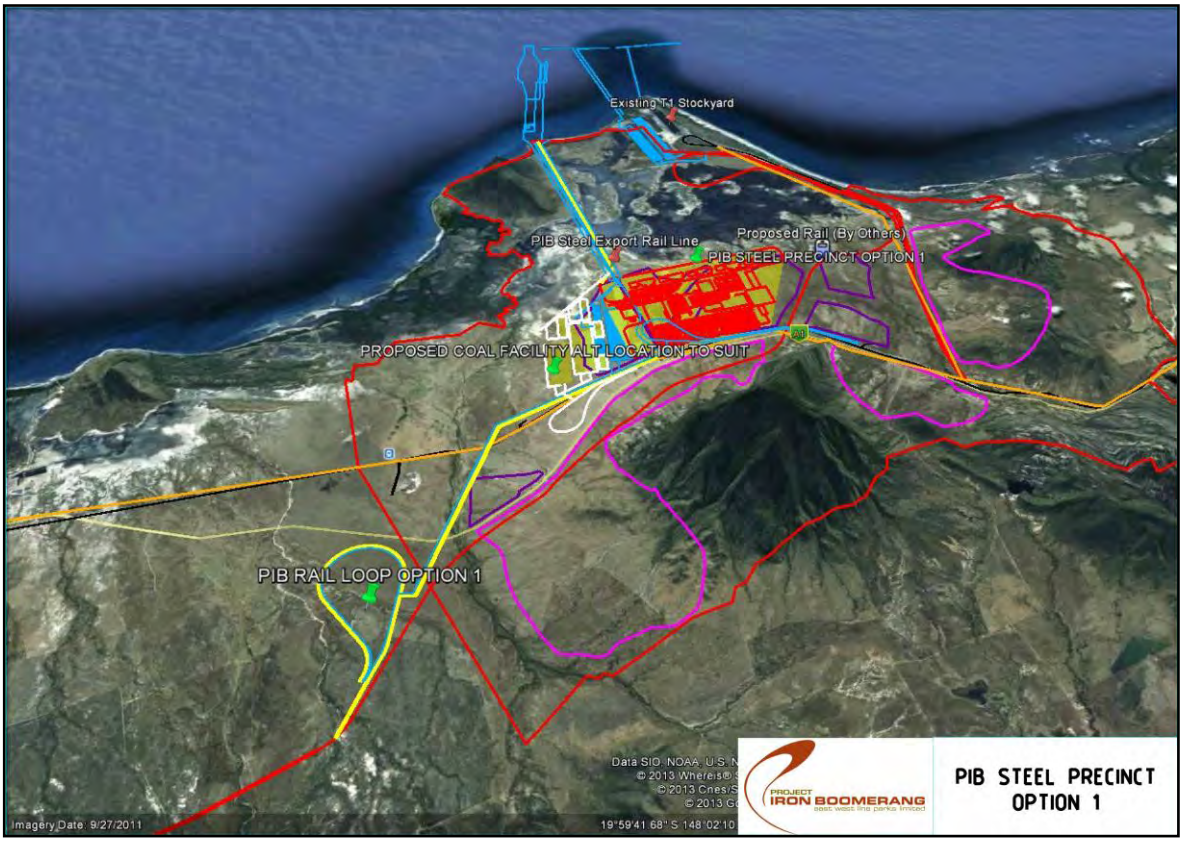

Figure 3: Site Location Option 1

Option 2A is shown in perspective view in Figure 4.

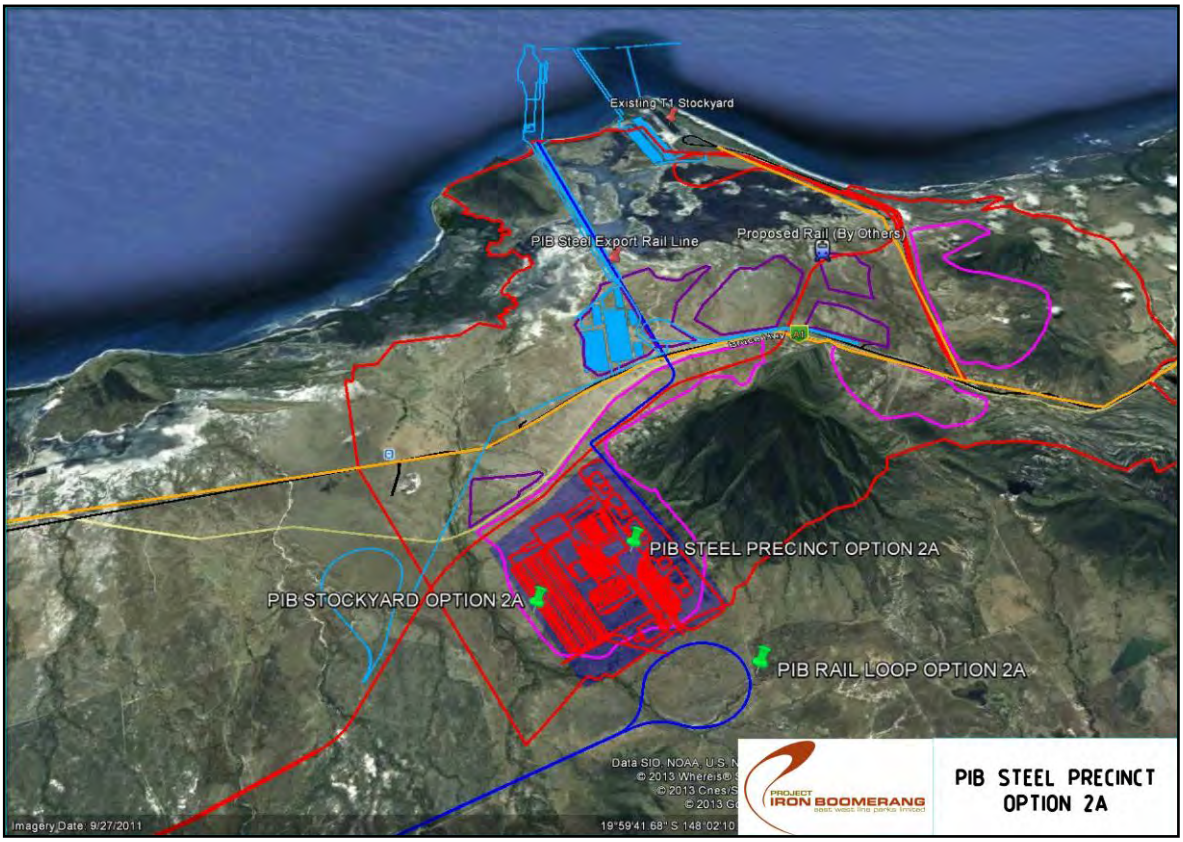

Figure 4: Site Location Option 2A

Option 2B is shown in perspective view in Figure 5.

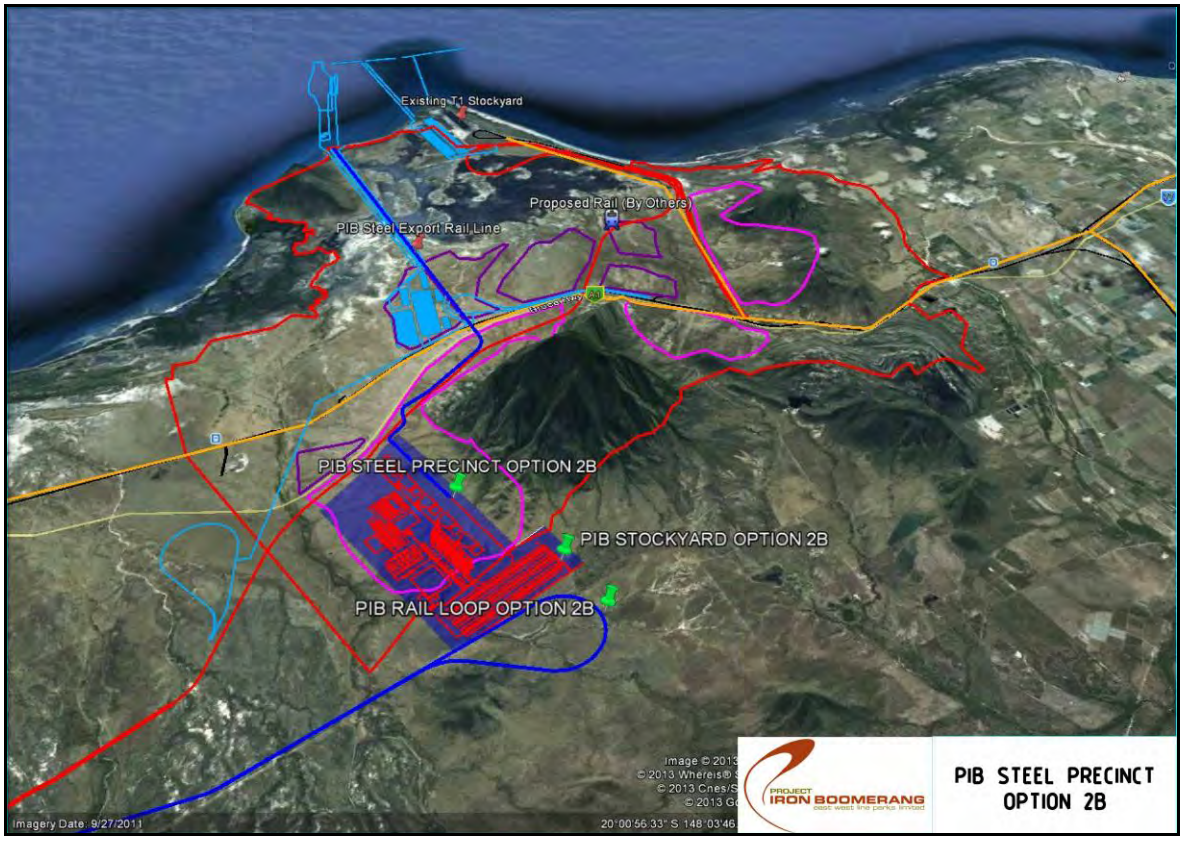

Figure 5: Site Location Option 2B

4.2 Compatibility with Other Land Uses

The proponent considers that each of the sites it has identified as options on which to locate its PIB Steel Precinct are compatible with its current understanding of heavy industry and other land uses proposed for the Abbot Point SDA and Port.

PIB proposes to undertake more detailed design and site investigation to determine the most suitable site and to enter into more detailed discussions with the State and other relavant planning authorities to establish the compatibility with other proposed industries and land uses.

The proponent makes the following additional comments in respect to its options 1, 2A and 2B as outlined in the foregoing site location plans and perspective views.

Option 1: Located adjacent to FRSM's proposed SMART Materials Concept plant (refer to parallel RFI Response submission by FRSM Pty Limited), this option would centralise heavy industry within the APSDA on the eastern side of the proposed multi-user corridor. Locating the Steel Precinct adjacent to the corridor provides ready access to the Port via a proposed heavy-haul, standard gauge rail line that PIB proposes to construct within it. Implementing this option requires an understanding and acceptance that the proposed new coal facilities may be translated several hundred metres to the west of their currently indicated location, as indicated in the AP-X Invitation registration document, to accommodate the steel plant. This minor layout adjustment would appear to allow an accommodation of the interests of both the proposed coal handling facilities and the proposed steel plant at the Option site. Alternatively, a suitable accommodation for PIB's

1200 ha site at Option 1 could be achieved by adjusting the proposed location of the proposed standard gauge coal rail corridor which is shown to pass through the eastern end of APSDA. Such an adjustment would appear to be possible and would also assist to secure a reservation for heavy industry at the eastern end of the APSDA, separate from coal at the western end.

Option 2A: Located in the south-western corner of the APSDA, wedged between Mt Roundback and Splitters Ck, this site option does not appear to present sufficient usable land. PIB's further design development and site investigations will determine if it is suitable. In regard to logistics of materials movements, PIB's intent is that key raw materials (iron ore and coal) will arrive via its proposed trans-continental heavy haul rail line terminating at the south-western corner of the APSDA. Finished steel slab product is to be railed to the Port via a heavy-haul, standard gauge rail line that crosses the Bruce Highway and the North Coast rail line and it situated within the proposed multi-user corridor.

Option 2B: This option is put forward as a means of overcoming the probable land shortfall at the south-western corner, as identified in regard to Option 2A, by proposing to locate the raw material stockyards outside the APSDA. The proponent will give further consideration to planning issues associated with this option in conjunction with its ongoing development of the Steel Precinct design.

4.3 Topography and Geology Requirements

The proposed steel manufacturing facility represents the heaviest of industrial applications and will require suitable natural ground conditions and the provision of heavy duty plant foundations.

In its preliminary design undertaken thus far TSC has not as yet determined the particular foundation designs required for any particular part of the steel complex.

While the proponent has done desktop reviews of the geological conditions likely to be encountered at various parts of the APSDA, a full site investigation including an assessment of subsurface conditions, soil strength, depth to rock, and groundwater attributes will be undertaken at an appropriate time to determine suitable types of foundation design solutions.

The Option 2 site poses particularly challenging topography and, wedged between Mt Roundback and Splitters Creek, it is tightly constrained by natural features which may somewhat restrict its appropriateness as a site for the steel complex. Given this uncertainty, this potential site requires a more detailed study by PIB and its partners.

4.4 Flood Immunity Requirements

The proponent is unaware of any detailed flood studies done for the APSDA site and has therefore not yet assessed its proposed site Options 1 and 2 for natural flood immunity characteristics.

The steel complex will be designed with a flood immunity return interval of 1:100 years.

4.5 Extreme Weather Immunity

The plant will be designed to comply with Australian engineering design codes including assessments to withstand cyclonic winds.

5. Project Design

5.1 Overview

The proponent engaged TATA Steel Consulting – UK (TSC) in 2012 to carry out a pre-feasibility study of the Iron and Steelmaking elements of Project Iron Boomerang (PIB) bringing to the fore its up to date costing and robust economic assessment tools and industry comparators. The TSC study report confirms PIB's credentials, as earlier established in its 2007 pre-feasibility study, for making steel more economically - by a significant margin - than at any other benchmark location in the world.

In the process TSC has developed a concept design for the Abbot Point steel complex to manufacture and export 22 Mtpa of high quality slab steel products using World's Best technology. With a strong focus on productivity, longterm sustainability and high energy efficiency the proposed steel complex will also deliver environmentally conscious outcomes with an exceptionally low level of greenhouse gas emissions to the atmosphere. TSC estimates the energy consumption of the facility to be approximately 16GJ/tonne of slab, which is of the order of 15-20% better than typical world wide practice. Further, TSC has assessed that the plant approaches world's best productivity benchmarks for slab steel production with a labour input of 0.25 manhours/tonne compared to a typical world figure of 0.5 manhours/tonne.

In addressing the PIB brief, TSC has determined that the required quantity of steel would best be produced from 5 blast furnaces each with a capacity of 4.4 Mtpa and associated steel plants within a smelter park with many shared facilities and services including Coke Plant, Lime Plant and the key gas outputs from the Air Separation Plant.

The focus on long-term sustainability and energy efficiency brought into play a collaboration between TSC and Nomura Research Institute (NRI), to develop sustainable uses for surplus gas and energy from the steel complex. This collaboration has identified the development of suitable and significant downstream industries including cement manufacture, bio-fuels and bio-plastics which would logically follow the establishment of the steel complex. NRI would also engineer a sustainable township development for upwards of 40,000 people expected to be drawn to the region's newfound industrial profile.

Figure 6. Proposed Steel Precinct - Perspective View by TSC

The collaboration between the proponent and its highly credentialed consultants, TSC and NRI, has yielded significant, high-level planning outcomes for the proposed steel complex and associated township, which are best expressed in the following key metrics table.

Project Iron Boomerang
Abbot Point Steel Precinct and Associated Projects
Products, Output and Utilities Demand/Supply

: to be assessed with related companies and organisations

Industrial Complex & Shared Services

Area	Facilities	Land Area Approx	Capacity (/y) (Supply) Indicative	Indicative Employment Numbers	Approx Demand			
					Water (GL/y)	Power (MWh/y)	Heat (GJ/y)	Natural Gas (GJ/y)
Industrial Complex	Iron Making	1,200 ha	1 Mt	4,000	86	200,000	-	4,600,000
	Iron/Steel Making		22 Mt			7,500,000	-	-
	Cement Making	800 ha	10 Mt	570		875,000	14,500,000	-
	Other hard products		11 Mt					
	Bio-plastic Making		400,000 t	60				
	Bio-fuel Production		36,000 t	80				
	Clean biomass production		25,000t	40				
Shared infrastructures	Water supply			250				
	Power supply		4,500,000 MWh					
	Heat supply		87,000,000 GJ					
	Gas supply							
	Recycling							
	Shared Stockyard							
	Power storage and supply							
	Mega solar / thermal	100ha	360GWh					
	Community Bus/Light Rail Track System							
Public services	School, Shopping Centre, hospital, etc...	12 ha		15,000			4,500,000	

Residential Area

Area	Site	Land Area	Numbers	Demand					
				Water (GL/y)		Power (MWh/y)		Heat (GJ/y)	Natural Gas (GJ/y)
				Potable	Non-potable	Daytime	Night time		
Housing Area	Unit Site	0.1ha	4,800 rooms 480 units	1.283	2.023	27,666	45,308		
	House Site	477ha	9,532 houses						
Park	Sports field, BBQ Area...	110ha							

Figure 7: Key Outputs and Utilities Metrics - Industrial Complex and Residential Area

5.2 Proximity to other Infrastructure

The proponent's intent for PIB in the Abbot Point area is that key raw materials (iron ore and coal) will arrive via its proposed trans-continental heavy haul rail line at a rail loop located at the south-western corner of the APSDA. The finished steel slab products will be sent from the Steel Precint by rail to the Port along the proposed multi-user corridor and exported in purpose designed slab ships.

Significant items of modular construction and other raw materials, including limestone, will arrive by incoming ship at a general cargo wharf at the Port and be moved along the multi-user corridor to the Steel Precinct. Still other goods and services including for plant construction and maintenance will rely on existing rail and road networks servicing the area.

The proponent's Option 1 locates the Steel Precinct on the eastern side of the APSDA in a proposed heavy industrial zone along with EWLP's proposed SMART Materials Concept Project. There it would be situated adjacent to the multi-user corridor with good accessibility to and from the port. With this option, the proponent's current planning is to have raw materials delivered from the transcontinental rail loop to the stockyard by conveyor, although a rail connection within the APSDA remains an alternative possibility to achieve this.

Sited at Option 2, in the south-western corner of the APSDA, the Steel Precinct is further removed from the Port precinct and has different solutions for rail access within the APSDA (ref Figure 2). The aforementioned Figure 2 shows indicative locations for proposed rail and other infrasructure for the receival of raw materials and the export of PIB's finished slab steel products for Options 1 and 2. The following sections provide more information in regard to conveyor, rail and port facilities.

5.3 Plant Layout Structure - Preliminary

Figure 8 provides an indication by TSC of the general layout proposed for the Steel Precinct.

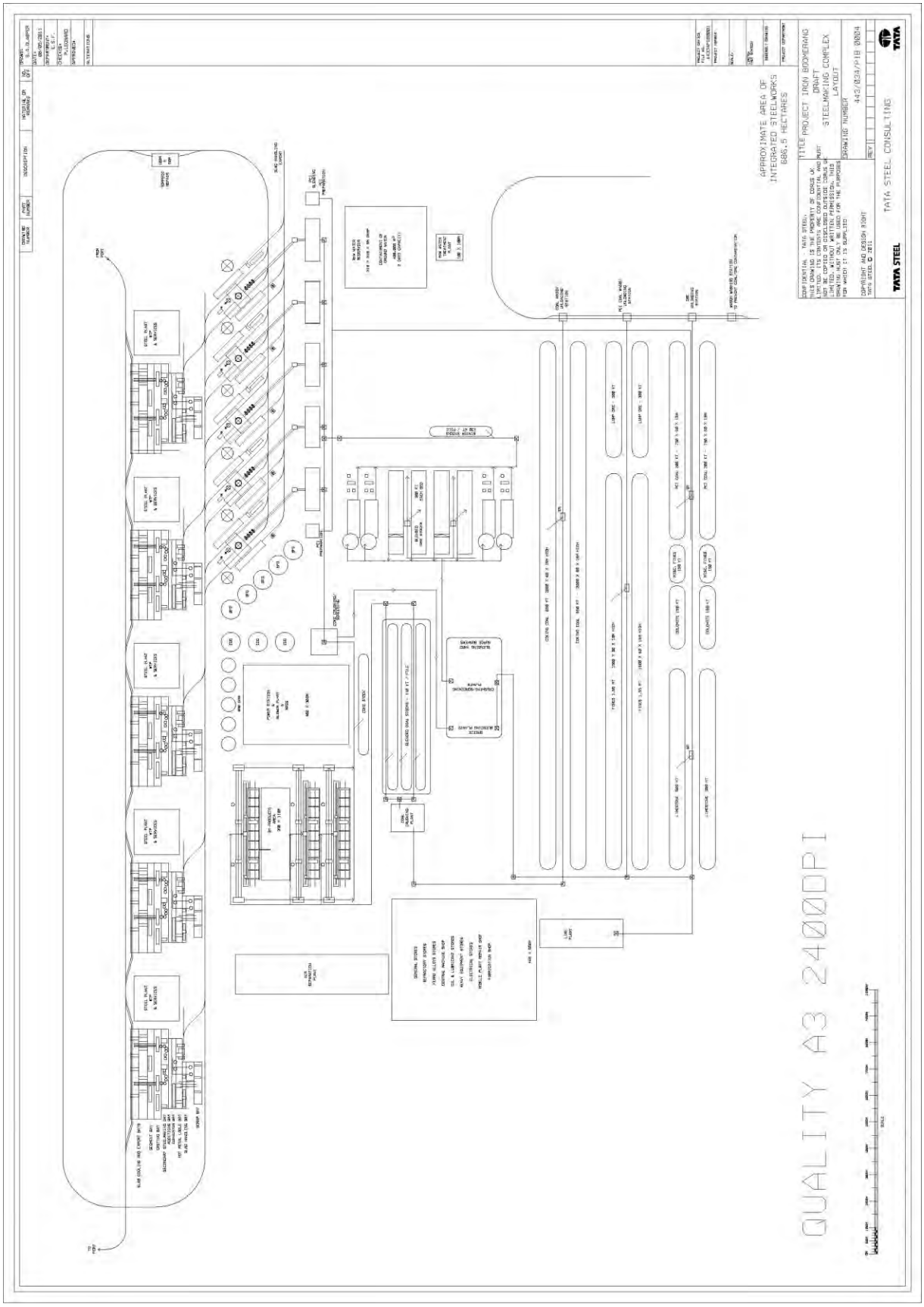

Figure 8: Steel Precinct General Layout - TSC

5.4 Proposed Timing

The following time schedule briefly summarises the proponent's progress thus far on its Abbot Point Steel Precinct development and lays out its plan to advance this nation-building PIB project through the BFS and other studies and then on to detailed design, construction and phased implementation works to completion.

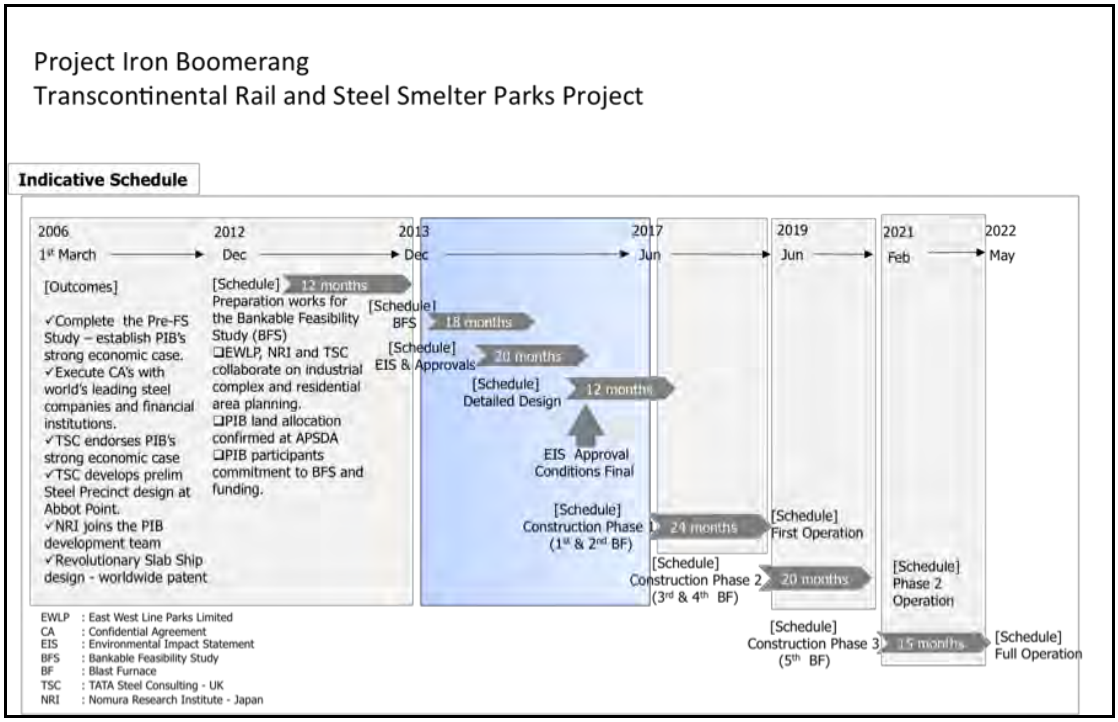

Figure 9: Project Schedule

5.5 Waste Facilities

The steel plant proposed by PIB and its international design partners TSC and NRI will employ the most advanced technology. In terms of environmental performance, the equipment will be selected to meet Best Available Techniques (BAT) references for Iron and steel production. Any discharges from the site in terms of water, air and solids will be pretreated to meet BAT requirements. The scale of the complex will allow for the optimisation of energy use and the export of surplus energies for the surrounding areas consumption, thus minimising the impact of greenhouse gas emissions. By-products from the iron and steelmaking production processes will be reused by other downstream processes such as cement manufacture and for other construction materials.

5.6 Conveyor and Rail Infrastructure requirements

5.6.1 Conveyors

With the Steel Precinct located at either the Option 1 or Option 2 site (refer to Figure 2), the proponent intends to deliver key raw materials by its proposed transcontinental, standard gauge, heavy haul rail line and for their unloading to occur at the rail loop at the south-western corner of the APSDA.

For the Option 1 site, the proponent currently plans that the iron ore and coal will then be moved by conveyor across the existing Bruce Highway and North Coast rail line to the materials stockyard area within the steel manufacturing precinct.

The approximate tonnages to be handled by conveyor in this manner are as follows:

	Approx Daily Tonnage	Unit	Approx Annual tonnage	Unit
Iron Ore	90,000	T/day	32	MT/Year
Coal	42,000	T/day	15	MT/Year

With the Steel Precinct located at Option 2 these tonnages would be transferred by conveyor for the relatively short distance from their unloading point at the transcontinental rail loop to the materials stockyard.

In addition to these tonnages, on current planning, limestone and dolomite (approx 28,000 T/day,10 MT/Year) will arrive by ship to the Abbot Point Port and be moved along the multi-user corridor to the Steel Precinct either by rail or conveyor. However, it remains possible that some of this significant tonnage will arrive at Abbot Point via the transcontinental rail line unloading loop, in which case it will be transported by conveyor to the materials stockyard area in the same way as the aforementioned iron ore and coal. It is also possible, in service of the wider PIB operations, that limestone having arrived by ship at Abbot Point will be loaded onto empty wagons and backloaded to the Pilbara via the transcontinental rail line. As such, whether the Steel Precinct is established at the Option 1 or Option 2 site, it is possible that an internal conveyor (or rail) will be required to transport incoming raw materials from the Port to the south-western corner of the APSDA.

5.6.2 Rail Connectivity

1) External Rail Connectivity to the Steel Precinct

- As aforementioned, with the Steel Precinct located at either the Option 1 or Option 2 site (refer to Figure 2), PIB proposes that key raw materials will be delivered by its transcontinental, standard gauge, heavy haul rail line to the rail loop at the south-western corner of the APSDA.

  The approximate volumes arriving in this manner are, the same as in 5.6.1 above, as follows:

	Approx Daily Tonnage	Unit	Approx Annual Tonnage	Unit
Iron Ore	90,000	T/day	32	MT/Year
Coal	42,000	T/day	15	MT/Year

- For the Steel Precinct located at the Option 1 site, after unloading at the transcontinental rail loop, as an alternative to the conveyor proposed in 5.6.1 above, it is possible that these raw materials will be delivered to the Steel Precinct stockyard by a rail line connection within APSDA, which would cross the Bruce Highway and North Coast rail line.
- As aforementioned in 5.6.1 above, significant tonnages of limestone and dolomite (approx 28,000 T/day,10 MT/Year) will arrive either by ship for unloading at the Abbot Point Port or, in part, via the transcontinental rail line for unloading at the rail loop in the south-western corner of the APSDA. Whether from the Port or the

transcontinental rail line unloading loop it is possible that the limestone transference will occur by rail as an alternative to the aforementioned conveyors.

- In regard to other external rail connectivity, the proponent also plans to use the existing North Coast railway for delivery of other materials to the Steel Precinct and to facilitate ongoing maintenance activities.

2) Rail between Steel Precinct and the Port

The following table provides approximate intended daily and annual tonnages of finished steel slab product to be railed out from the steel precinct to purpose built slab ships.

	Tonnage produced per day	Unit	Production tonnage per year	Unit
Slab Steel	62,000	T/day	22	MT/Year

A dedicated standard gauge heavy haul rail line and associated infrastructure is proposed to be constructed between the Steel Precinct and the Port. As shown in Figure 2, for site Options 1 and 2, it will be located within the nominated multi user corridor to the Port and elsewhere, as appropriate, within the APSDA.

This dedicated rail line may also be used by PIB for the delivery from the Port to the Steel Precinct of items that will arrive by ship, including significant fabricated items for modular construction during the precinct development phase and also, as an alternative to a conveyor, certain raw materials (including limestone) required in the ongoing steel manufacturing process.

5.7 Pipelines Required

1) Gas

The collaboration between TATA Steel Consulting – UK (TSC) and Nomura Research Institute (NRI) has identified the requirement in the steel manufacturing process for approximately 4,600,000 GJ natural gas per year, separate from that which would be needed to feed gas fired power plants should that be the preferred means of power generation. The proponent's planning to date has made the assumption that natural gas will secured from current gas reserves in Queensland and supplied by pipeline to the APSDA.

2) Water

TSC further identified the annual requirement for water in the steel manufacturing process and associated uses of approx 87 GL. The proponent's planning to date has made the assumption that this will be secured from available water resources in Queensland and supplied by pipeline to the APSDA.

5.8 Cooling Ponds/Towers

At this stage, design of the water treatment plant and the specifics of heat exchangers either by cooling towers or closed circuit cooling systems has not been developed and will be subject to further discussion and development with technological equipment designers.

Port Design

6.1 Port Capacity Required

As referred to in 5.6.1 above, significant quantities (up to 10 Mtpa) of limestone and dolomite will be received at Abbot Point Port for use in the steelmaking process. Unloading facilities will be required at the port to transfer this product to conveyor or rail systems for delivery to the Steel Precinct.

Also, during the establishment and construction phase of PIB, a general cargo wharf will be required to take delivery of large modular constructed plant items and load them onto suitable road or rail transport for transfer within the APSDA and installation in the Steel Precinct.

The 22 Mtpa of finished steel products for export will be loaded onto wagons at the Steel Precinct and railed through the APSDA and the multi-user corridor to the port. The wagons will transport approximately 650,000 steel slabs per annum (or an equivalent tonnage in coils) and be suitable for roll-on roll-off loading directly onto a purpose designed Panamax size slab ship which will offload the slabs using overhead cranes built into the ship's structure.

The slab ships will be stern loaded as indicated in Figure 11. Logistics arrangements including tonnages and frequency of ship movements are included in section 10.4 hereof. The full scale operation of the steel plant facilities will ultimately require the availability of 3 berths in the stern facing configuration for 'roll-on-roll-off' loading and unloading.

Figure 10: Purpose Built Slab Ship

The expected tonnage of the steel products is as follows:

	Production volume per day	Unit	Production volume per year	Unit
Iron Products	62,000	T/day	22	MT/Year

6.2 Ship Loading Separation distances

The slab ship addresses the wharf end on and is stern loaded in roll-on roll-off fashion from the rail wagons, thereby making more economical use of berthline facilities than the typical sidelong mooring.

The special purpose slab ship is a Panamax size vessel intended to be stern loaded by 'roll-on-roll-off' rail wagons.

At berth it will be moored aside a finger wharf with the stern facing the main wharf. The minimum side to side distance in the other direction to the next finger wharf is 100m as indicated in Figure 9.

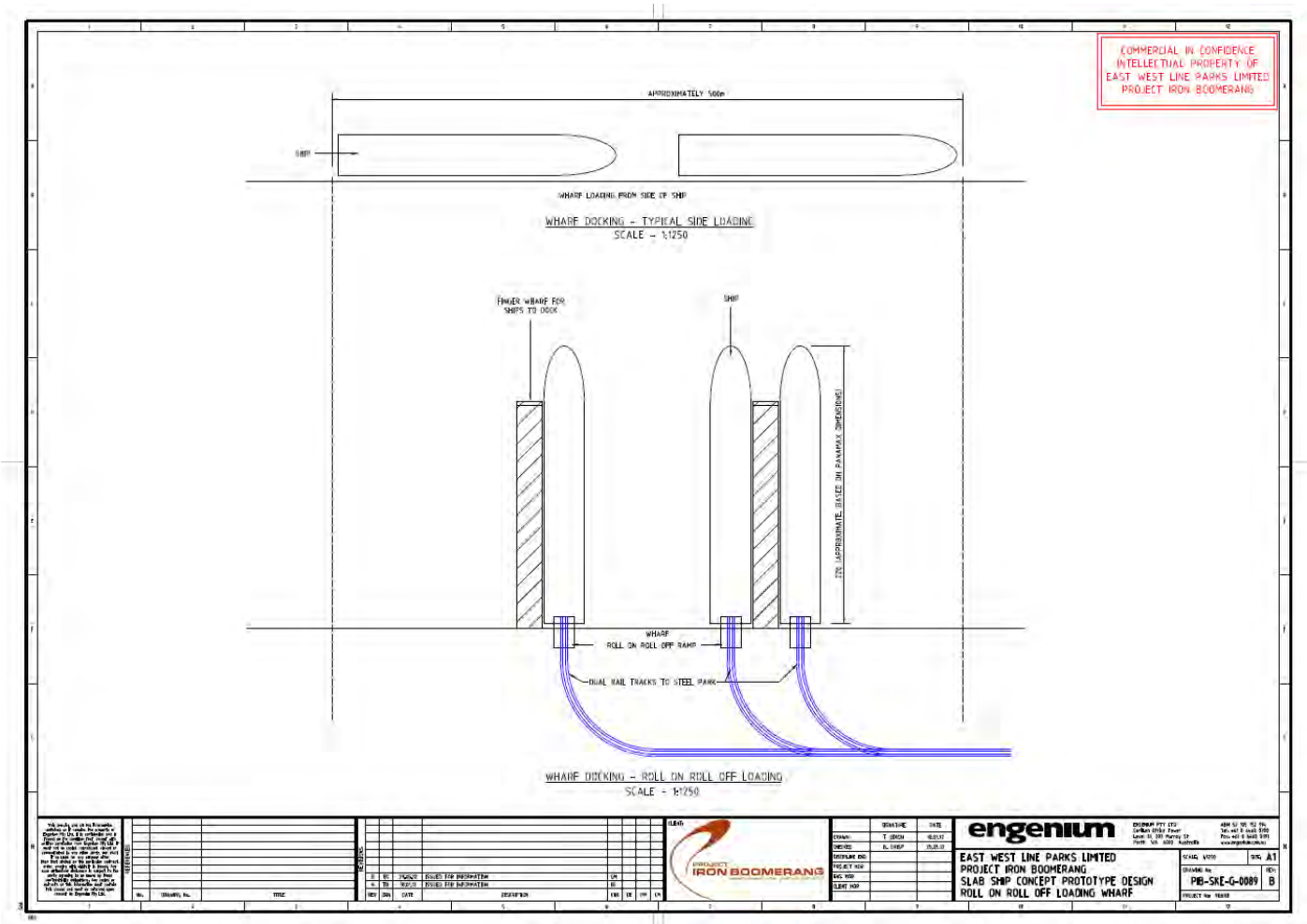

Figure 11: Berthing Arrangements at Wharf

6.3 Shipping Separation distances

Normal navigation rules for Panamax vessels would apply. The proponent understands that at berth alongside the wharf, the required tail to tail distance is the length of the Panamax ship plus a minimum clearance of 33m.

Under steam, the proponent understands the minimum side to side clearance for the Panamax size ship 100 metres and the required tail to tail clearance is the length of the Panamax ship plus a minimum clearance of 500 metres.

6.4 Channel Clearance for Passing Vessels

Similarly, the proponent understands the minimum width of the channel to allow Panamax size vessels to pass side by side is 165.1 metres (5 times the beam/width of the ship)

6.5 Safety Exclusions Zone Requirements

Not applicable to this project.

6.6 Dangerous Goods Exclusion Zones Requirements

Not applicable to this project.

7. Impact on Community and Benefits to the State

7.1 Key Benefits for the Region/State/Nation

The key benefits likely to be delivered by this project are:

- New Capex investment in industrial facilities at APSDA worth approximately of $15 billion (and a similar amount at the Pilbara complex).
- Associated new Capex on the PIB transcontinental rail line of up to $14 billion.
- Export Sales of high quality steel slab products from APSDA of $10 billion pa (and a similar value from the Plibara complex).
- Development of secondary industries at the APSDA with potential sales value of $5 billion pa.
- Increased diversity of economic activity in the SDA and the region.
- A nation building opportunity to leverage the locally available primary materials into an Australian-based industrial steel production complex.
- Improved supply chain logistics for raw and value added materials.
- Significant new employment in both construction and operational phases.
- Technology transfer benefits through the partnerships with international steel manufacturing companies with access to world's best technologies.

The proponent's focus on long-term sustainability and energy efficiency brought into play a collaboration between TSC and Noruma Reaearch Institute (NRI), which has actively sought sustainable uses for surplus gas and energy from the steel complex. This collaboration has identified the development of significant suitable downstream industries including cement manufacture, bio-fuels and bio-plastics which are a natural fit with the steel complex.

With reference to the Key Metrics table in Figure 7, page 14 from section 5.1 above, one of the significant planning outcomes for the proposed steel complex and associated industry is that a township of up to 40,000 people would be drawn to the region's newfound industrial profile.

7.2 Labour Force Requirements and Community Impacts

1) Labour Force Requirements

   Construction Phase: 5,000 - 8,000 direct employees

   Operation phase: 4,000 direct employees

   Ancillary industry: 1,000 direct employees

2) Community Impacts

   The proponent has assessed there is potential requirement for an additional 15,000 employees in supporting industries in the region as a consequence of establishing the steel complex and associated industries.

   NRI brings also a specialty in sustainable township development and has proposed that PIB would create the world's first sustainable industrial and residential complex located in Queensland. NRI considers that a sustainable residential township for the 40,000 anticipated additional people would be established on 580 ha land.

Figure 12: NRI Image of Township

8. Airspace

8.1 Airspace Impacts

The Steel Precinct comprising blast furnaces and many associated purpose designed plant elements for the iron and steel making processes will extend across the 1200 ha site within the APSDA.

At this stage the buildings have not been designed in detail, however to give an indication the following estimate is provided.

Building	Approx Height (m)
Sinter Plant	50
Sinter Stack	80
Blast Furnace	80
Coke Ovens	30
Coke Ovens Stack	80
Steel Plant	80
Lime Plant	50

The proponent has not at this stage addressed operational airspace restrictions however considers it unlikely that the Steel Precinct buildings and exhaust stacks will present as an interference to aviation.

9. Throughput

9.1 Product Type and Volume

The essential requirement of the Abbot Point steel smelter park is to produce 22 Mtpa of slab steel products at. TSC has produced a confidential design report for the steel complex and determined the key inputs to the process are as outlined below.

9.2 Key Inputs and Outputs of Production

- Key Inputs

On the basis of TSC's concept design for the steel complex, the following approximate quantities of key inputs are planned for the steel production process.

Items			Indicative Daily Consumption	Unit	Indicative Annual Consumption	Unit
Raw Materials	1	Iron Ore	90,000	t	32	Mt
	2	Coking Coal	42,000	t	15	Mt
	3	Limestone & dolomite	28,000	t	10	Mt
	4	Natural Gas	13,000	GJ	4,600,000	GJ
Additives & Utilities	1	Water	250,000	m^3	87,000,000	m^3
	2	Electricity (gross)	20,000	MWh	7,500,000	MWh
	3	Oxygen	13,000	t	4,700,000	t
	4	Nitrogen	8,000	t	3,000,000	t
	5	Argon	250	t	90,000	t
	6	Burnt Lime	8,000	t	3,000,000	t

- Key Outputs

The fundamental output requirements for the Steel Precinct are the following:

	Daily production	Unit	Annual Production	Unit
Steel Products	62,000	t/day	22	Mt/day

10. Logistics

10.1 Freight Infrastructure Requirements

The proponent summarises its reliance on road and rail infrastructure and shipping for key freight items as follows.

- Iron ore and metallurgical/coking coal, the key raw materials for the steel manufacturing process, will be railed to the steel complex at APSDA on the standard gauge, 40 tonne-axle-load transcontinental line, which the proponent will provide as a central plank in delivering PIB's economic efficiency.
- Limestone and dolomite is most likely to be shipped to the steel complex via the Abbot Point port.
- Other raw material inputs may be transported by the QRN rail network to the APSDA.
- Road transport will be relied upon heavily during the construction phase.
- Finished steel slab products will be railed within the APSDA site onto purpose built slab ships for export from Abbot Point Port.

10.2 Rail/Train Transport Requirements

Item	Annual Consumption (Mtpa)	Train Payload (t)	Train Frequency
Iron Ore (from WA)	32	32,700	2.92 per day
Coking/Metallurgical Coal (Bowen Basin)	15	19,500	2.92 per day
Other raw materials	tba	varies	varies

10.3 Road/Truck Transport Requirements

The proponent is not planning for significant deliveries by road of the main raw materials items used in the steelmaking process. However, it will rely heavily on road transport and infrastructure during the construction phase of the project and for delivery of lesser volume inputs to the steelmaking process and in the ongoing operations maintenance activities of the steel complex and its associated infrastructure at the APSDA.

10.4 Shipping Requirements

1) Imports

Item	Annual Consumption (Mtpa)	Ship payload (t)	Ship frequency
Limestone & dolomite	10	56,000	1 per 2 days
Construction Items	tba	varies	varies

3) Export

The suggested berthing arrangement for the proposed stern loading of the Panamax size special purpose slab ship is provided in section 6.2 hereof. Logistics arrangements including tonnages and frequency of ship movements are included in the following table. The full scale operation of the steel plant facilities will ultimately require the availability of 3 berths in the stern facing configuration for 'roll-on-roll-off' loading and unloading.

Item	Annual Production (Mtpa)	Ship payload (t)	Ship frequency
Steel Slab Products	22	65,000	1 per day (with 2 days for loading)

11. Utilities

PIB's Steel Precinct at Abbot Point will have the impacts and benefits as outlined in section 7.1 above for the region, state and nation.

The tabulation therein summarised the demand and supply for utility services within the steel complex.

11.1 Water Infrastructure Requirements

Required water infrastructure	Annual water consumption
Water Supply Facility	87,000,000 m^3
Water Treatment Facility	
Water Storage Facility	

The proponent's planning to date has assumed that this will be secured from available water resources in Queensland and supplied by pipeline to the APSDA.

11.2 Energy Infrastructure Requirements

Required Energy infrastructure	Annual Power consumption (gross)
Power Supply Facility	7,500,000 MWh
Power Transmission Facility	
Power Storage Facility	

The focus on energy efficiency within the steel complex and township by TSC in collaboration with NRI, has identified that secondary generation and capture of heat and electricity within the key manufacturing processes will reduce this gross annual power generation requirement for the steel complex by at least 2,200,000 MWh.

11.3 Gas Infrastructure Requirements

Required Gas infrastructure	Annual Gas consumption
Gas Supply Facility	4,600,000 GJ
Gas Transmission Facility	
Gas Storage Facility	

The proponent's planning to date has assumed that natural gas will be secured from current gas reserves in Queensland and supplied by pipeline to the APSDA.

12. Suppliers and Customers

12.1 Product Source

The sources of input materials PIB intends for the steel manufacturing process are outlined in section 3.1 of this Response.

In particular, the raw materials will be drawn from the Bowen Basin coking coal fields of Queensland and iron ore mines in Western Australia's Pilbara region. PIB will deliver these key input materials directly to the steel complex at Abbot Point via its transcontinental heavy haul rail line, which is strategically located to maximise the proximate procurement choice to steel manufacturers to the richness of these resources.

12.2 Supplier Information

The PIB economic model is that each of the steel manufacturers which own and operate the 5 blast furnaces will share ownership of the smelter park complex.

PIB is currently engaged in confidential discussions with the world's major steel manufacturers, in particular those in Japan, Korea and China and will confirm the particular manufacturing partners it will be moving forward with at an appropriate time.

12.3 Customer Information

PIB expects that the steel manufacturers that establish within its Abbot Point facility will plan to export their finished steel slab products worldwide to their existing and new customers.

13. Project Status

The schedule outlined in section 5.4 of this Response briefly summarises the proponent's progress thus far towards the realisation of PIB and lays out its plan to advance the project through the future studies, design and phased construction and implementation works to completion of the Abbot Point Steel Precinct elements.

The proponent is developing the project in strong partnership with leading steel industry facilitators including world renowned steel complex designers and steel economics consultants, TSC and NRI.

Based on the demonstrated strength of PIB's economic case and well advanced technical plan we have developed mutually strong relationships with the world's major steel manufacturers, in particular those in Japan, Korea and China. We have made significant progress towards putting in place the project planning and essential strategic partnerships which will ensure this economically sustainable nation building project progresses through its BFS stage and is successfully developed.

The proponent will begin negotiations and development of the significant scope of linear infrastructure, including essential utility services required, in line with its overall project timeline.