



Lloyds List DCN
 Thursday 6/10/2011
 Page: 6
 Section: General News
 Region: Australia
 Circulation: 3,500
 Type: Not available
 Size: 1,431.58 sq.cms.
 Published: ---T---

Bin: 0000
 Brief: LINCOLNMIN
 Page 1 of 5

Deepwater dreaming: SA iron ore stymied by glacial port progress

South Australia is chock full of minerals. Iron ore is amongst the most bountiful. But for as long as there is no deepwater port, the question remains over whether the state can capitalise on the commodity's boom before it goes bust, reports MIKE FOLEY

IF AS many dollars had been spent on developing South Australia's infrastructure as words printed decrying its lack, there's every chance the state's claims to becoming Australia's next major iron ore province would have already been realised.

Explorers and miners alike need the certainty of ready access to export facilities before they stump up to begin production. But where does the money for construction come from if there are no exports?

Currently, there is no answer. South Australia is a perfect example of the chicken-and-egg scenario confronting prospective mining regions.

The Gawler Craton and Eyre Peninsula's iron ore prospects have tempted over half a dozen

serious exploration ventures and yet just one company is exporting serious quantities – OneSteel, a steel producer turned iron ore miner.

Sadly for the field of juniors emerging on the peninsula, OneSteel will not share its export facility. So proponents in both the south and the north of the province are sweating on access to capesize facilities.

OneSteel's transhipping operation at Whyalla currently handles around 6m tonnes per annum. On the back of its recent \$346m purchase of WPG's iron ore deposits and subsequent decision to invest \$200m in mining expansions, that figure could rise to 10mtpa.

Two port proposals have gained traction in recent years. The furthest advanced is Sheep Hill on the southern end of the Peninsula. Port Bonython is the other, located in the north of the Peninsula near Whyalla.

Magnetite miner Centrex and its Eyre Peninsula JV partner Wisco are behind the \$200m Sheep Hill port at Tumby Bay, north of Port Lincoln. Located towards the bottom of the gulf, it is over 250kms south of Port Bonython. It recently achieved its first milestone, being granted major project status by the state government.

Sheep Hill is currently expected to have capacity of 2.5mtpa by the end of 2014, hitting its straps at 20mtpa at an indeterminate time in the future. As it stands, Sheep Hill is at least two and a half years from final approvals and Centrex says the port may be ready

for exports in 2016.

The other player in the port push is the Spencer Gulf Link Consortium which has a \$600m plan for Port Bonython. The consortium is headed by Port Adelaide's operator Flinders Ports and backed by a bunch of heavyweights – Leighton Contractors, Macquarie Capital, BIS Industrial Logistics and the Australian Rail and Track Corporation.

Bonython would need to handle at least 20mtpa of exports to make it viable, and the project's backers hope for considerably more.

It should be noted, however, that various Bonython projects have been proposed over the years but a sod is yet to be turned. Indeed, it took the state government three years to name the consortium as the preferred proponent.

The Eyre Peninsula houses most of the state's miners that are nearest to production. In the south, Centrex, Iron Road and Lincoln Minerals are each developing a range of projects whose success may hinge on Sheep Hill while the long term viability of northern miners IronClad and IMX Resources will probably rely upon Port Bonython eventuating.

The state's most recent, ambitious and speculative iron ore province is developing west of Broken Hill, largely in South Australia. A collection of junior iron ore explorers within the Braemar province have formed an alliance which is spruiking for development of common infrastructure needed for large-

scale magnetite projects.

Jason Kuchel, director of the South Australian Chamber of Mines and Energy (SACOME), said government should be doing more to attract private investors to port infrastructure.

"We need to find ways of attracting or putting together adequate infrastructure for mining companies . . . to establish a business case for government involvement. Because at the moment, there is a little too much risk for the private sector. The government needs to take a longer term perspective than they have in the past. SACOME have been after the government to consider underwriting some of the risk portion of the ton-nages," Mr Kuchel said.

IronClad is an Eyre Peninsula iron ore junior. According to chief executive, Ian Finch, South Australia's resources sector is being stymied for want of decisive government investment.

"South Australia is missing out on millions of dollars of meaningful exploration" because companies will not invest "high risk exploration dollars" without the means to export their product, he said.

Mr Finch also says miners and the government are in a face-off, with mining projects on hold until ports are in place and government reluctant to invest until working mines have contracted demand for export shipments.

IronClad is nearing final approvals at its Wilcherry Hill mine. Not willing to wait for

→

a deepwater port to materialise, it took an alternative route to export and is preparing to implement a transhipping operation.

"It's really that chicken and egg argument that has forced us to go down our own individual and particular path. If you look at IMX for instance, and WPG that just sold out completely or you look at Centrex at Sheep Hill, each of us has had to find our own solutions simply because the government are not doing their job. It might be a bit harsh, but I don't mind saying it.

"It is a build-it-and-they-will-come scenario. The government has got to understand companies don't build a mine and then sit around waiting for the infrastructure – waiting for the government . . . that is not how it works. You have got to do it all contemporaneously.

"South Australia is missing out on millions of dollars of meaningful exploration because without the means to export your product, the boards of various companies have got to seriously consider where they are going to put their high risk exploration dollars.

"We were told by the South Australian Government with loud noises that in four years' time we would have a deepwater port at Port Bonython and today we are again being told in four years' time we will have a deepwater port at Port Bonython.

"Companies like ours are very cognisant of the window of opportunity that the current situation in China, that the current prices are offering us and we simply cannot wait for gov-

ernment instrumentalities to hold us back."

On the other hand, Eyre Peninsula Mining Alliance (EPMA) says it is "very happy with the government's support" to date, despite the fact construction is yet to start on a deepwater port project to service its members.

EPMA manager Stephen Marlow said "naturally, we would like to see government do more in terms of infrastructure development. But that is not a criticism. We are happy to work with government and private investors. The way things are moving, we are quite satisfied with that."

But transport infrastructure is not the only shortfall causing a headache for junior miners on the Eyre Peninsula, as managing director of Lincoln Minerals, John Parker, points out.

"Grid power is a big issue. There is only [approximately] 10MW of power available in the grid at the moment. That is enough for a small DSO operation, but not if we go to a magnetite operation.

"Our proposed magnetite operation [at Gum Flat, near Port Lincoln] would need something in the order of 25 to 30MW, meaning we would have to generate all our power on site.

"When you look at the magnetite operations, it is Iron Road, IronClad, Centrex and Wisco. All of which would require greater power supply than is available, so that is a big challenge."

Mr Finch, who also heads explorer Trafford Resources, says that while infrastructure remains a concern the South Australian Government has several positive initiatives.

"I can't really knock them over scrapping the defence title of the Woomera protected area, which is a good initiative. The Plan for Accelerating Exploration (PACE) initiative is very good as well. The main area I am argumentative about is the infrastructure.

"A lot of the politicians in South Australia will be patting themselves on the back, saying 'we are a wonderful country' and 'we are very mining friendly.'

"But they are obviously not entirely sure what they are talking about – because people will only invest high-risk exploration dollars where there are levels of certainty downstream as to the extraction and conversion of that resource into wealth. And that infrastructure question is still to be answered."

IronClad Mining

IronClad's Wilcherry Hill magnetite project is in the southeastern section of the Gawler Craton in the north of Eyre Peninsula, 105kms from Whyalla. It has a JORC compliant resource of 275mt, with further exploration potential.

Chief executive, Ian Finch, says he expects lease approvals to pass imminently.

"The South Australian approvals process has been going for seven months . . . Approvals normally take six to seven months and the word that I have is that [approvals are] imminent.

"What happens then is we submit a mining and rehabilitation program, which is a much smaller document and that has already been prepared. It is all ready to go, but we can't submit it in parallel.

"By November or December we are anticipating that all approvals will be in hand and we can commence our construction phase, which is not big because most of it is mobile plant and we just wheel it in. That should lead to a first shipment in the order of January/February."

Mr Finch said the project will progress in two stages. The first stage is a DSO magnetite operation, which he expects to reach 1mtpa after a year and reach full capacity of 2mtpa in the second year.

"During the course of the DSO operations we will finalise studies for stage two. We will be moving towards [full capacity of] 10mt as quickly as we can, but it will be a series of steps."

IronClad has determined to forge a route to export without access to deepwater port facilities. It has developed a transshipping system in partnership with shipping company Sea Transport Corp. Exports will be made from a ferry terminal near Whyalla at Lucky Bay in the Spencer Gulf, 154kms south of Wilcherry Hill.

Initially, IronClad resolved to bite the bullet on transport costs and take the obvious route to export via Port Adelaide. This entailed a 540km journey to Port Adelaide, which would start with truck haul to Whyalla then finish with a rail journey to Adelaide.

By swapping the truck and rail route to Adelaide for a 154km truck haul to Lucky Bay, and foregoing Adelaide's larger port for a transshipment system, IronClad estimates it can cut operating costs from



\$85 to \$65 per tonne.

IronClad's business development manager, Ralph Winter, described how the transshipping solution would work: "A free floating barge that the ore is loaded onto will be taken out into the ocean, once we have found an appropriate site somewhere between five and 10kms offshore to load panamax vessels. We are using panamax vessels because they are the only ones with a crane that can load the containers in the middle of the ocean.

"The second stage is to bring a feeder vessel in, which is a motorised barge that has loading capabilities on the barge. That has, roughly, a \$9m – \$10m cost for one and we are weighing up whether to buy or lease.

"The barge will be docked and packed on shore. Also, the system will be fully containerised, which means the container is loaded from the truck onto the barge.

"Once the containers are loaded onto the back of the barge, the tug pulls it out into the ocean. When the container is loaded onto the vessel it hooks on the bevel and tips it lengthways and the ore falls into the hold of the ship.

"The third stage of the operation is to bring in the floating harbour, to give us the capability to load capsize vessels. . . the floating harbour will actually have the capability to hold 90,000 tonnes of product. It can take a capsize vessel and can load through itself and the feeder barge as well, so

we can meet the 150,000 tonne capacity of the vessel."

IMX Resources

IMX Resources is located in central South Australia, far away from the Eyre Peninsula. It exports around 1.7mtpa of DSO through Port Adelaide from its 11.4mt inferred iron ore resource at the Cairn Hill project, 55kms south-east of Coober Pedy.

The company has a range of mineral interests across Australia and also in Tanzania and Mozambique. Within South Australia, IMX is currently exploring its Mt Woods tenements, 10kms south west of Cairn Hill.

Cairn Hill began production in late-2010. IMX says it has a target mineralisation in the

order of eight to 11mt of magnetite with a grade of 45 – 50% Fe for phase two at Cairn Hill, with further infill drilling in the pipeline. It has an overall exploration tonnage in the Mt Woods region of 200 – 300mt of magnetite at 28 – 35% Fe.

Lacking access to a deepwater port, IMX's main impediment to production was infrastructure. Former managing director, Duncan McBain, said that the capital cost of accessing a deepwater port and building the necessary infrastructure were prohibitive.

Railing ore to the capsize facilities at Darwin would have cost \$44m and building a shed with a bottom dump facility would have cost at least \$35m, Mr McBain said.



ALL ABOARD: IMX's container tippler in action at Port Adelaide.



IMX eventually struck upon a low cost solution that allowed it to enter production. It uses existing container handling gear at Port Adelaide, loading ships with its ore via customised containers using a rotary tippler attached to a container crane. The capital cost of this system was around \$9 million, Mr McBain said.

However, IMX warns, in an unambiguous statement of frustration on its website, that this solution merely makes the best of a bad situation. It announces that "the absence of a capesize port at Port Bonython adds around \$8 to \$10 per tonne to the FOB costs [of exports]. Rapid progress on the development of Port Bonython is essential for the expansion of Cairn Hill and for longer term viability of the iron ore industry in South Australia."

Lincoln Minerals

Lincoln Minerals is a junior explorer focused on Eyre Peninsula iron ore. Its portfolio also includes nickel-cobalt, uranium, lead-zinc-copper-silver and gold projects in the same province.

Lincoln's most advanced project is Gum Flat, which lies 20kms west of the coast at Port Lincoln. Gum Flat has an inferred mineral resource of just over 100mt of iron ore, the majority of which is magnetite and a lesser amount of hematite-geothite DSO.

Another deposit of note is Lincoln's 22mt inferred magnetite resource at Eurilla, near IronClad's Wilcherry Hill on the northern Eyre Peninsula.

However, the company's focus remains trained on Gum Flat, which has overcome the initial hurdles to production – identifying a port solution for its initial 500ktpa DSO production.

Lincoln's managing director, Dr John Parker, said the company has lodged applications to local councils for a truck

haul operation that would transport covered containers the 20kms to port. The company plans to load panamax vessels, which Port Lincoln can already accommodate. The covered containers can be loaded by ships' cranes, alleviating the need for significant investment in infrastructure.

Lincoln has recently expanded its plans at Gum Flat by lodging claims for a proposed mine at the Barns iron ore deposit, which is located within the existing project. Six adjoining mineral claims have been pegged, totalling 793ha.

Mr Parker said he expects to have all approvals in place by mid-way through next year, and to be in a position to start shipping by the end of the 2012.

The ultimate aim for Gum Flat, Parker says, is to ramp up to 2mtpa of magnetite concentrate. A scoping study on its magnetite operation predicts the need for a slurry pipeline located on site once production hit 1mtpa.

"The current estimate at the moment is that processing of magnetite is \$50 to \$60 per tonne of ore and at least half of that is made up of power costs, because of the lack of grid power on the Eyre Peninsula," Parker said.

OneSteel

The South Australian steel manufacturer is the state's single major iron ore miner – again despite the lack of a deepwater port. It has a range of tenements in the Middleback Ranges, which run north to south on the upper Eyre Peninsula inland from Whyalla.

Project reporting service Project Monitor reports OneSteel produces 6mtpa of hematite for export and 1.5mtpa of magnetite concentrate for internal use from its Iron Knight, Iron Duchess and Iron Duke mines.

Expansion is set to continue for the company. A new mine, Iron Chieftain, three kilometres to the east of Iron Knight, is expected to commence production in late 2011. Production is predicted to total 10 million tonnes of hematite over eight to 10 years.

A processing plant is also to be established nearby at the dormant Iron Baron mine. Project Monitor says the plant will concentrate hematite ore currently lying in dumps at Iron Baron and that mining is also likely to resume. Completion is expected by February 2012.

OneSteel's recent purchase of WPG's iron ore assets, for

\$346m, should take its iron ore exports up to 10mtpa. OneSteel has acquired the flagship Peculiar Knob DSO project with around 19mt at 64% Fe, the Buzzard and Tui hematite deposits with a combined resource of 18.4mt at 61.6% Fe and a range of targets on the 398km² Hawks Nest tenements. OneSteel plans to spend \$200m increasing the capacity of its transshipping facility at Whyalla.

Iron Road

South Australian-focused iron ore explorer and aspiring miner Iron Road is most advanced on its path to production with the Central Eyre project, but also has other iron ore projects in the pipeline.

Iron Road is exploring magnetite targets at its Gawler Iron project, supported by the South Australian Government's PACE program. It also has two less advanced exploration projects near Koolyanobbing and Meekatharra in WA.

Central Eyre is located smack bang in the middle of the Eyre Peninsula at Warrambo. Exploration centres on two magnetite deposits: Murphy South and Boo-Loo.

Iron Road reports that pre-feasibility studies confirm Central Eyre can sustain a 12mtpa



INFRASTRUCTURE: Illustration of the sort of low-cost onshore facilities IronClad plans to build

→
magnetite concentrate operation. It has identified a 1.2bt resource to date and targets a final resource of three to six billion tonnes.

Central Eyre's viability will likely hinge on the Sheep Hill port. A slurry pipeline is the obvious form of transport from pit to ship. A desalination plant and power supply loom as the next infrastructure hurdles Iron Road must jump on its journey to production. According to Project Monitor, Iron Road is seeking a JV partner for its Central Eyre project.

Centrex Metals

Centrex, the developer of the Sheep Hill port project, is an Eyre Peninsula-focused iron ore explorer seeking to enter production.

It is developing tripartite plans to enter production and holds a range of exploration licenses right across the region. Wilgerup, a wholly owned venture near Lock in the central

Eyre Peninsula, is the most advanced project.

The company told the ASX in June it is targeting an annual production of up to 1.5mtpa DSO. Centrex is developing two other projects in JV arrangements with Chinese steel producers.

At the Bungalow project, Baotou Iron and Steel has the option of taking a half share in the enterprise. Bungalow is located on the northern Eyre Peninsula and drilling is underway to identify a maiden magnetite resource.

Most significantly, Centrex is developing six prospects on the southern Eyre Peninsula with Wuhan Iron and Steel (WISCO) in the Eyre Iron JV. Centrex holds a 40% stake and WISCO the moiety. WISCO's participation bolsters Centrex's infrastructure options and funding firepower.

The most advanced of the prospects is the Carrow deposit. A pre-feasibility study is un-

derway, based around 10mtpa of magnetite ore.

In an exciting recent development, Eyre Iron has announced a significant milestone for its Fusion deposit, which is located 40kms from Sheep Hill.

An initial resource estimate of 319.4mt of magnetite has been established, bringing Eyre Iron's total to 478.6mt.

Braemar Alliance

Bordering NSW and South Australia, the Braemar iron formation stretches for around 250kms from Peterborough to Broken Hill in NSW. Combined, the province has speculative potential of up to 50bn tonnes of mineable reserves and a 100-year production life.

The Braemar Alliance comprises public companies Carpentaria Exploration, Havilah Resources, Minotaur Exploration, Royal Resources, U3O8 and private companies Sinosteel PepinNini Curnamona Management, Bonython Metals Group

and Wentworth Metal Group.

The alliance formed due to its members' common need for infrastructure, primarily a deepwater port on the eastern side of the Spencer Gulf, looking across the water to the Eyre Peninsula. The Braemar alliance is currently negotiating to acquire land for the construction of a deepwater port, somewhere in the vicinity.

The alliance's members also need power and water. Fortunately, rail is already catered for with the heavy duty rail link that bisects the province and runs to Port Pirie.

To date, only Carpentaria and Royal have reported JORC resource estimates, while Minotaur and Havilah are currently working towards initial estimates.

This article originally appeared in the September/October edition of our sister publication the Australian Journal of Mining.