

  All things Scandinavian seem to be the buzz these days with their fiction writing and television programs being much sought after. Of course the region has been in demand before. The 1960s and 1970s brought us Swedish interior design (and porn, need we mention) and then there was Abba, while the 1990s bought us Nokia. Farther back though in the 1940s and earlier Sweden was one of the major sources of iron ore in Europe and its production of this mineral was hotly contested during World War Two (as was its ball-bearing output).

Now there is somewhat of a Nordic Renaissance going on in mining and this, in a way, is a reinforcement of the revival going on in Spain. Norway, Finland and Sweden have become hot spots with their traditionally propitious geology being revisited in a swathe of metals, both base and specialty (and even precious) as a way of creating jobs and bolstering export income.

Much to our surprise Australian companies have featured prominently in pushing into these parts where the weather could not be more daunting for those used to Southern climes. Talga Resources, which is listed on the ASX, has joined the rush and becomes the second graphite player of note to target Sweden (the other being Flinders, which is also run by Australians despite its TSX-listing).

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The thing that first hit me in the eye with Talga's presentation was the use of the word "scalable" before all others. After "production", "scalable" is our second most favorite word at the current moment. Though "cheap" is also a favorite...

The Graphite Project(s)

Talga Resources has five 100% owned graphite projects comprising multiple deposits, all of which are located in Norrbotten County in the far north of Sweden.



Talga-Project-map

The two most advanced projects, Nunasvaara and Raitajärvi, both contain JORC Indicated resources, and preliminary economic studies on these deposits have commenced.

Nunasvaara, which forms part of the Vittangi Project, is a microcrystalline flake deposit, with what the company claims is the highest-grade JORC/NI 43-101 resource in the world (7.6mn tonnes @ 24.4% graphite). Raitajärvi, located some 150kms south-east of Vittangi is a coarse flake deposit, with 49% of contained flake classified large to jumbo size (4.3mn tonnes @ 7.1% graphite).

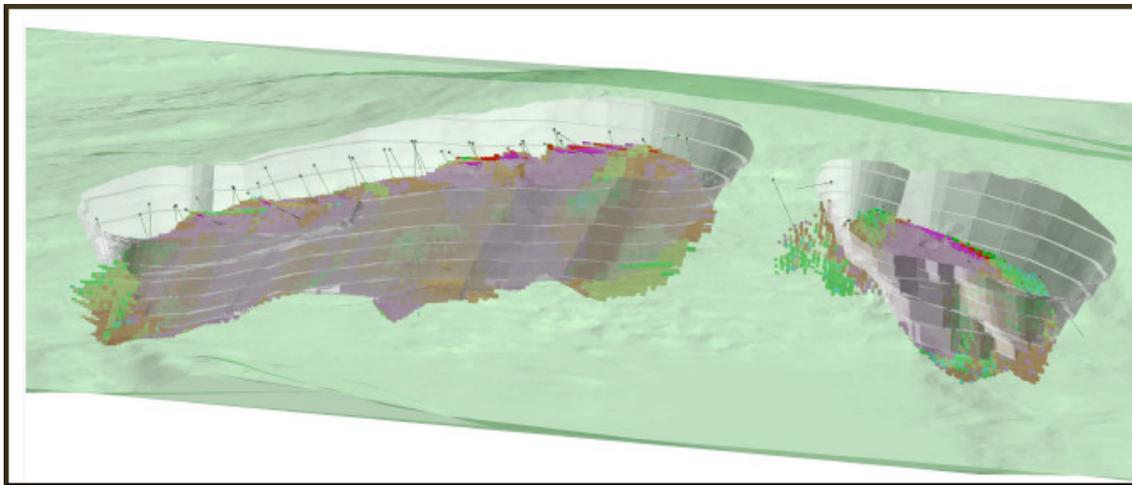
The Scoping Study

Talga came out with a Scoping Study for its main target, the Vittangi deposit, in October of 2014. The main findings were:

- Targeting dual production of ~46,000tpa graphite and ~1,000tpa graphene over approximately

20 years

- Low Capex of around AUD\$29mn and capex payback 1.4 years
- Around AUD\$84/t feed costs for 2% graphene recovery and ~77% total graphite recovery
- Indicative pre-tax NPV in excess of AUD\$490mn based only on current JORC Indicated portion of resource – from surface
- Project was deemed viable on graphite production alone, with graphene a by-product icing on the cake
- The company hopes that economic metrics will become even more robust as graphite and graphene recovery yields increase with future optimisation work
- Permitting underway for pilot plant production
- Metallurgical work undertaken on fresh rock – samples not subject to naturally elevated graphite purity by virtue of oxidation
- Conservative Study numbers – graphene price severely discounted to then current minimum pricing and low-end yields assumed



Pit_design

Above can be seen the pit design of the Nunasvaara graphite deposit, including haul ramps. This model does not encompass the potential for extensions/combinator of the pits. The Scoping Study contemplated simple pits to depth. The company feels

that economics may be significantly improved should shallow resources along around 30kms of strike be proved viable.

The metrics of the operation would be:

Plant throughput (tpa)	250,000
Diluted Feed Grade	23.6%
Graphite production (tpa)	~46,000
Graphene production (tpa)	~1,000
Life of Mine Strip Ratio	4:01
Graphite price assumption (USD\$/t)	\$480
Graphene price assumption (USD\$/t)	\$55,000
Capital cost (AUD\$m)	\$29.30
Mine Life (years)	19.7
Discount Rate	12%
Pre Tax NPV (AUD\$m)	\$490mn
Payback from construction start	1.4 years

Other Considerations

There are also three other graphite projects, Piteå, Jalkunen and Pajala which according to the company all contain significant historically drilled graphite intersections requiring follow up exploration. Jalkunen though has a JORC Resource totalling 31.5Mt @ 14.9% Cg, Graphene and <100 µ flake.

However, with the two main projects, the company has more than enough to keep itself busy for the meantime. A further attraction of the two main targets is that both Nunasvaara and Raitajärvi have been declared areas of

providing protection against competing land uses.

The company also has some iron ore projects in the same region, and northern Sweden has been an epicentre of iron ore production for hundreds of years. However, with the current glut and price slump these shall probably stay, literally, in the freezer for the foreseeable future.

The whole area is laced with rail infrastructure due to the historic iron ore trade in the vicinity. As can be seen from the accompanying map Talga's graphite deposits are located adjacent to existing transport infrastructure including high quality sealed roads and open-access heavy haulage rail.

In Passing

When coming to write on Talga, I initially thought the name was new to us but in fact I have written, in passing, on this company before with reference to its project, the Bullfinch Gold deposit in Western Australia. It had come into focus before when we wrote about Tellurium because the Bullfinch deposit has readings of up to 107ppm of Te.

Conclusion

The three words that best sum up Vittangi are cheap, cheap, cheap and they are music to investors' ears in these days where all other things being in a project's favour, the capex number often spoils the show. Like many others in the graphite space, Talga needs to bag an offtaker/sponsor to get a leg up on the competition. At least in its case, the low capex is a draw while the positioning in Europe is also a plus. Flinders has shown it can be done in Sweden with minimal outside interference and for the Swedish government the area where Talga are working is an even higher priority to see economic reactivation and job creation.

The time has come to move to pilot production and then maybe a Feasibility Study (unless that phase can be short-circuited) and a partner found to kick-start the capex. At that point the company will have its ducks (or maybe geese as its northern Sweden) in a row for the move to production.

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