Struthers Report V22 # 4.0 Graphite, SYR, ERA, NGC, FMS, LLG, ALP, EGZ, GLK Mar 21 2016

Know when to hold-em!
Know when to fold-em!
Know where to set stops!
Know when to run!
Never count your portfolio
Until the sells are done..

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Maybe I was in correct and there was a strong recovery in the U.S. in 2015, at least according to pay increases at the BIG Banks

Top five U.S. bank CEO pay packages in 2015:

JPMorgan (NYSE:JPM) Chief Executive Jamie Dimon +35% to $27M;

Bank of America (NYSE:BAC) CEO Brian Moynihan +23% to $16M;

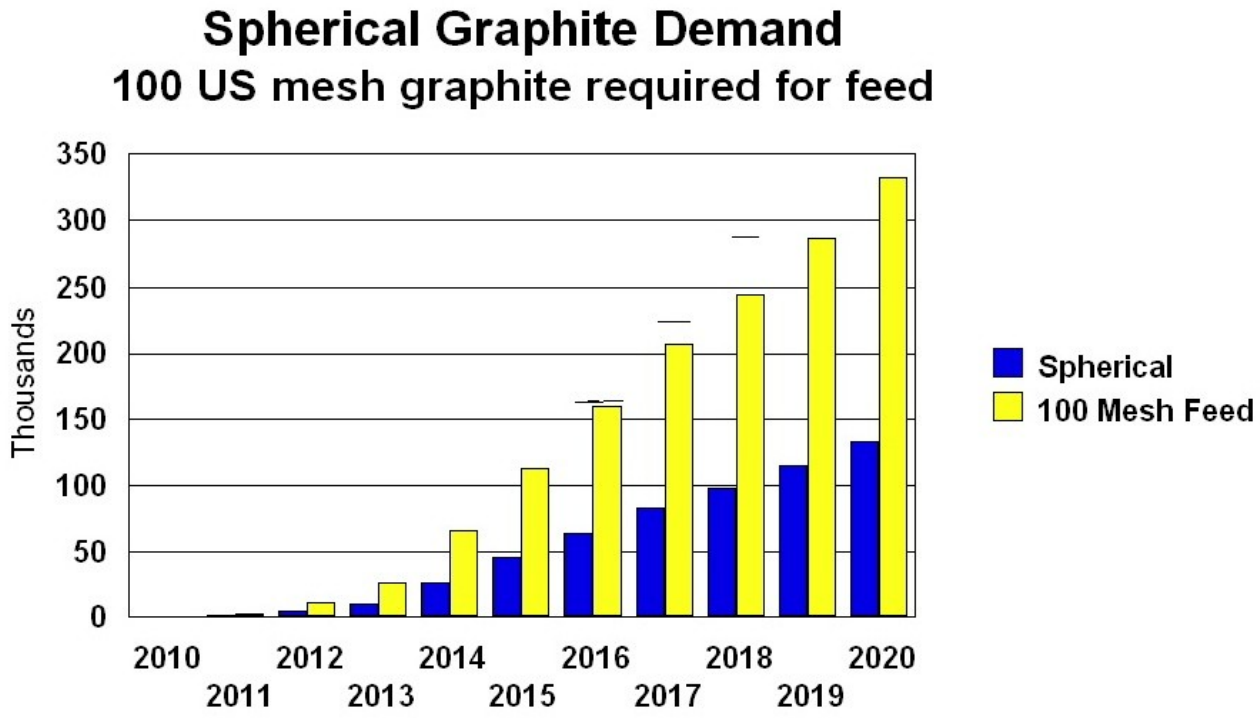
Wells Fargo (NYSE:WFC) boss John Stumpf unchanged at $19.3M;

Citigroup (NYSE:C) CEO Michael Corbat +27% to $16.5M;

U.S. Bancorp (NYSE:USB) head Richard Davis +20% to $21.7M.

Graphite Demand set to soar -

Key driver of graphite demand growth will be from Li-ion battery applications which require spherical graphite. I used the data from the Anode company in the Syrah report to make this graph. At first glance the graph below looks very bullish for graphite, but let me explain why it is way too conservative



These 3 points are from Syrah Resources presentation

- Benchmark Minerals estimates that 80,000 to 125,000 tonnes of natural graphite per annum will be required to support Tesla Motor's gigafactory's target annual production of 500,000 electric vehicles.
- LG Chem, Foxconn, BYD Auto and Boston Power have also announced plans to construct megafactories over the next few years
- Production capacity of Li-ion batteries is anticipated to more than triple by 2020

The above graph was looking at growth for batteries in the current electronics market and the rising demand for electric cars, as you see the point above by Benchmark. The major anode producer has forecast spherical graphite demand to increase at a compound **annual growth rate of 26% from 2014 to 2020,** to reach 133,000 tonnes per year by 2020.

But in 2015 along came Tesla and their announcemnt of the Power wall battery. Nobody foreseen such huge demand for this including my self. Tesla has seen demand for its home battery solutions surge, with the result that following the announcement of the Powerwall last April 30th, the company received reservations totaling around US$800 million, according to Bloomberg Business, or for 38,000 systems. As such, the system is said to be sold out until at least mid-2016.

Since then the demand keeps growing

Meanwhile Tesla's storage solutions arm Tesla Energy has seen a surge in demand for its storage solutions. **Musk has revealed that more than 100,000 reservations** have come in for the rechargeable lithium-ion batteries. This could translate to sales of more than $1 billion. Tesla plans to ramp up, produce and sell $40 to $50 million worth of batteries in Q4 according to Forbes. The plan for **2016 is to produce ten times more and 2017 sales should be another five to ten times more** according to Musk. 70% of the demand has come for the commercial and industrial scale Powerpack and the remaining 30% for residential Powerwall.

I don't have the exact specs on battery composition but we know it is a similar battery to what is in the Tesla car. Therefor we can safely assume to produce each Powerwall, 16 kilograms of synthetic graphite, derived from 40 kilograms of flake graphite concentrate, will be required.

If we just use the 100,000 reservations and assume each is a single battery, 40 kilograms X100,000 equals 4,000 tonnes

if 2017 is 5 times that we add another 20,000 tonnes

That is the small line you see on the chart above that I drew in for 2016, 2017 and 2018, adding some conservative amount for Powerwall demand

We know the key goal of Tesla and others is to lower battery cost so it is a safe assumption that flake graphite that can produce spherical battery graphite at less than half the price of synthetic graphite will be the product of choice.

Of course what everyone has been speculating on in the junior graphite space – where will it come from.

I see two obvious choices

After that it is a turkey shoot at a few with maybe a wild card or two

Syrah Resources is #1 and will be the biggest benefactor to this graphite boom

Shares outstanding 231.3 million Recent Price $A 4.10 **Market Cap $948 M**

Their deposit is huge, high grade, low cost and is the further advanced with construction underway.

Feasibility Study highlights include:

- Initial capital expenditure of US$138 million, with a payback period of less than 2 years from commercial production
- The world's largest JORC Compliant Graphite Ore Reserves to support over 40 years of operations at full production
- Reserves: 81.4Mt at 16.2% TGC (13.2Mt contained graphite) Resources: 1,191Mt at 11.0% TGC (128.5Mt of contained graphite)
- Average head grade of ~19% total graphitic carbon ("TGC") during first 10 years of operations
- Nameplate production capacity of 380,000 tonnes of concentrate per annum at 95% TGC
- Internal rate of return of 71%, post-tax NPV10 of US$1.1 billion
- Average unlevered project free cash flow of ~US$160 million per annum during the first 10 years at full production
- Simple, open pit mining operation with extremely low stripping ratio
- Conventional processing via crushing, grinding, flotation, filtration, drying, screening
- Low average cash operating costs of US$286/tonne FOB from Port of Nacala over life of mine

The last qtr report end of January indicates this progress

Development of the Balama Project remains on schedule and budget, with engineering and procurement activities significantly progressed. Commenced pre-stripping of the Balama West orebody and all principal mechanical equipment has been purchased and is in various stages of manufacture. Bulk earth works have been completed at the process plant site and access road construction is nearly complete. Power station contract has been awarded and Process plant concrete works scheduled to commence in February 2016

Marketing Agreements :

- 10 year Statement of Sales Intent (SSI) signed with one of the world's largest refractory producers for up to 15,000 tonnes per annum (tpa)
- 20 year Technology Licensing Agreement finalised with Morgan Hairong AM&T Co., Ltd (Morgan Hairong) which grants Syrah the exclusive right to use Morgan Hairong's proprietary spherical graphite coating technology globally (excluding China)
- 3 year Product Sales Agreement signed with Morgan Hairong for Syrah to supply 2,000 tpa of uncoated spherical graphite
- 3 year Marketing Agreement signed with Morgan Hairong for Syrah to supply 5,000 tpa of uncoated spherical graphite and 2,000 tpa of coated spherical graphite
- 5 year SSI signed with Hiller Carbon for 25,000 tpa and up to 35,000 tpa of Balama recarburiser to be purchased and resold exclusively in the United States, Canada and Mexico
- Three year Offtake Agreement signed with Marubeni Corporation to purchase 20,000 tonnes of flake graphite per annum for traditional applications in Japan and Korea (the Territory). Syrah has signed a new Memorandum of Understanding for Marubeni to secure spherical graphite offtake agreements with anode and battery producers in the Territory by 30 June 2016

You can see, some of Syrah graphite will go for batteries and help fill the gap on the chart first page

http://www.syrahresources.com.au/

#2 would be Elcora Materials TSXV:ERA OTC: ECORF
Shares outstanding 69.3 M Recent Price $0.50 Market Cap C $34.7M

Currently Elcora is the only graphite player in production so a little ahead of Syrah but their production is just small at this point with plans to grow.

We don't have any production numbers yet but their off take agreement announced gives us a good idea where they are headed.

Under the terms of the agreement with thyssenkrupp announced February 23rd, they undertake to market nine million tonnes per year (50 per cent of the estimated 18 million tonnes per year) by year five of the agreement. thyssenkrupp has the option to renew the agreement for an additional five years from the initial 10-year period. The high-purity graphite is anticipated to be sold to end-users in the lithium ion battery market and for other high-end technology applications.

So Elcora will supply a similar amount of battery grade graphite as Syrah, although I expect we will see further announcements from Syrah for additional amounts.

We seen results that Elcora's graphene tested out to be twice as good as the next competitor so I am very excited to see results of their battery grade testing they announced March 10th

Elcora Advanced Materials has retained Coulometrics LLC of Chattanooga, Tenn., to conduct a series of tests of both spheronized and non-spheronized graphite material obtained from multiple sources. The purpose of testing and evaluation of the graphite material is to optimize Elcora's processing of lithium-ion-battery-grade graphite and to qualify the company's finished product for prospective lithium-ion-battery manufacturing companies.

In addition to the product evaluation, Coulometrics will complete purification and CVD (chemical vapour deposition) coating of Elcora's graphite material and use this finished product in the assembly of full-size 18650 lithium-ion batteries. The cells will be evaluated for standard electrochemical properties and full-cycle-life testing. The results from this evaluation will represent an important second step toward the full qualification of Elcora's lithium-ion-battery-grade graphite material for prospective lithium-ion-battery manufacturing companies.

Dr. Edward Buiel, President and CEO of Coulometrics, will be leading the evaluation process. **The significance is Buiel is colleagues with Jeff Dahn who now works exclusively for Tesla**

Jeff Dahn is recognized as one of the pioneering developers of the lithium-ion battery that is now used worldwide in laptop computers and cell-phones. Dahn's recent work has concentrated on the application of Combinatorial Materials Science methods to battery and fuel cell materials problems. He is the author of over 500 refereed journal papers and co-inventor of 58 inventions with patents issued or filed. Jeff Dahn was born in Bridgeport, Conn. in 1957 and emigrated with his family to Nova Scotia, Canada in 1970. He obtained his B.Sc. in Physics from Dalhousie University (1978) and his Ph.D. from the University of British Columbia in 1982. Dahn then worked at the National Research Council of Canada (82-85) and at Moli Energy Limited (85-90) before taking up a faculty position in the Physics Department at Simon Fraser University in 1990. He returned to Dalhousie University in 1996.

Dr. Ed Buiel got his PhD ("Development of Carbon Anode Materials for Lithium Ion Battery Applications") under Jeff Dahn of Dalhousie University and co-authored patents with Dahn. Buiel has many patents, publications and conference publications of his own. He is an expert and a colleague of Dahn. **Dr. Ian Flint of Elcora also taught mineral processing at Dalhousie for 10 years**

Tesla announced that they have entered into an exclusive agreement with Dr. Jeff Dahn, a Li-ion battery researcher at Dalhousie University in Halifax, Nova Scotia. After his current work ends Dahn will be exclusive to Tesla for 5 years http://ecomento.com/2015/06/22/tesla-links-up-with-battery-scientist-jeff-dahn/

If you care here is a video of one of Dahn's lectures, kind of long over an hour and boring unless you have an interest in batteries. **Of note Northern Graphite NGC used Bueil and Dahn as well.**

The Elcora chart next page is a bit busy and is normally the indicators I pull up on all my charts. I want to point out that a lot of the technicals are aligned.

In my March 1st update, I mentioned that the stock down to $0.50 was the 61.8% Fibonacci retracement level, but I was not ruling out a further downward move to about $0.45 to fill the gap.

On Friday we seen that move so technically the gap is now filled. I hope some of you had some bids in down there as I believe the volume was 60 or 70k at those levels. That move also gave us a pretty decent hammer candlestick (often seen at bottoms). RSI has dipped below 50 which historically has been a good buy level with this stock and Stochastics are also in the buy zone.

We may still see a bit more consolidation before going higher, but downside looks limited now.

In the turkey shoot we have a handful of companies all with advanced graphite deposits, pre feasibility and final feasibilities and tests/claims showing they have suitable graphite for battery grade.

Alabama Graphite **CSE: ALP**
115 million shares Recent Price $0.115 Market Cap **C $13.2 million**

Focus Graphite **TSXV:FMS**
143 million shares Recent Price $0.15 Market Cap **C $21.5 million**

Northern Graphite **TSXV:NGC**
49.2 million shares Recent Price $0.44 Market Cap **C $21.6 million**

Mason Graphite **TSXV:LLG**
86.5 million shares Recent Price $0.48 Market Cap **C $41.5 million**

All these companies will tell you why their graphite is unique and better than the other guy, but in the end they all have the same challenge to get off takes, financing and construct a mine – so even if something happened now - anyone of them would still be over a year for mine construction and production.

That said, I believe 2 or 3 of these will get to production.

Focus Graphite

Northern Graphite

Mason Graphite

I show all 3 charts here because they are basically the same. They all broke down trend lines and moved up above their 200 day MA and are consolidating recent gains. The 200 day MA could now act as support.

Alabama Graphite

Alabama's chart is different as the down trend is not broken yet and there has been no up move, perhaps it is coming with the rest of the sector so bottom fishing at 11 or 12 cents might work out in time.

Wild Cards

Energizer TSX:EGZ Recent Price $0.08 Market Cap C$ 27.5 million

They have a deposit and feasibility in Madagascar but the stock is very diluted with about 344 million shares out. So financing will be more of a challenge with out dilution and a market cap at $27.5M it is valued pretty high compared to the others. Only Mason is valued higher and I really don't see any particular good reason.

Great Lakes Graphite TSXV: GLK Recent Price $.09 Market Cap C$ 9.1 million

They have plans to import graphite concentrate from Brazil and to upgrade to value-added micronized natural-flake graphite products as well as micronized synthetic graphite products. These products are targeted at a number of industries and markets, including grease, lubricating fluids, drilling fluids, brake pads and battery components. Pricing for micronized flake graphite products is anticipated to be in the range of $2,500 (U.S.) to $3,000 (U.S.) per tonne. They hope to be like a value add, but we will have to see production results from their processing plant to further their odds of success.

Summary

There are other graphite companies out their, but in general they require more work to advance their projects further towards feasibility. The financing market is still challenging so they will face more dilution and timelines are hard to predict.

By the time they move farther ahead - the more advanced juniors mentioned above could be filling the production needs.

It is possible that a couple of these companies could leap frog ahead so I will continue to watch these companies. And I have not talked much about other Australian juniors, but some of these will challenge the advanced Canadian juniors. I do have some info on some of these on my graphite section on the web site and I plan to update that soon.

http://www.playstocks.net/index.php/play-home-articles/graphite-graphene

I think a good Investment strategy at this point is about **70% of funds in the leaders Syrah and Elcora.** Syrah will have much more graphite production but Elcora adds the twist as the only junior with a graphene production facility coming on stream.

Syrah has very low costs, and we have no PEA from Elcora but given low costs in Sri Lanka and the high purity of the graphite right out of the mine, I think Elcora will be very cost competitive.

The **remaining 30% of funds could be divided up in the advanced juniors i**n the turkey shoot!!!