



# HALLGARTEN & COMPANY

## Initiating Coverage

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## Elcora Advanced Materials (TSX-V: ERA) Strategy: LONG

Key Metrics			
Price (CAD)	\$	0.32	
12-Month Target Price (CAD)	\$	0.64	
Upside to Target		100%	
12 mth high-low		\$0.285-\$0.56	
Market Cap (CAD mn)	\$	23.3	
Shares Outstanding (millions)		72.8	
Fully diluted (millions)		89.3	
		<b>FY16</b>	<b>FY17e</b> <b>FY18e</b>
Consensus EPS			n/a n/a
Hallgarten EPS (CAD)			(\$0.03) \$0.016
Actual EPS (CAD)		(0.06)	
P/E		n/a	n/a 14.9

# Elcora Advanced Materials

## Nothing Beats Production

- + Elcora is the ONLY one of the current crop of listed graphite players that has commercial production of highest-grade natural graphite (20 tons per month rising to 400 tons per month by year end)
- + By upgrading and exploiting an existing producing mine in Sri Lanka, Elcora has fast-tracked itself to graphite producer status
- + Operational distribution and marketing agreement for graphite in place with Thyssen-Krupp Metallurgical Products
- + A demonstration plant (in Halifax, NS) producing “true graphene”
- + Supply agreement for graphene with a leading battery components manufacturer
- + Targeting value-added in graphite anodes for the Lithium-ion battery market
- + Targeting the surging demand for high quality spheronized graphite exemplified by the Tesla Gigafactory, which when complete, will require 93,000 tons of flake graphite per annum to produce 35,200 tons of spherical graphite for use as anode material
- + First commercial anode graphite (spheronized) plant under construction in Halifax N.S. at an economical \$5mn
- + Receiving strong financial and regulatory support from both the provincial and national governments of Canada
- ✗ Graphite price movements and stockpiled quantities remain essentially at the discretion of the Chinese
- ✗ Market could be flooded mid-term in the unlikely event that graphite wannabes get their acts together

### **Rightsizing in both Challenging & Improving Markets**

The first flush of the graphite boom of 2013 consisted of a variety of companies promising to “build it big”. Needless to say that boom retreated faster than most others and thus far none of the “big” players have arrived at production. Then there is Elcora. Instead of going for big it right-sized its production and ended up as the first of the new crop to actually produce. Its current products are natural graphite, graphene, and anode (spheronized) graphite. All of these with a focus on “green” production methods.

In 2016, even as gold was recovering, several of the bootstrapped gold producing juniors were seeing strong investor interest because they were providing what the market wanted: production that was turned on with minimum fuss, minimum financing and minimal dilution.

In recent times we have been highlighting what we call the microproducers. Companies in this group do not have small ambitions for the long run, but they definitely believe in cutting their coat to suit their cloth during times of tough financing in the interest of being among the first to production. However, microproducers are not just a phenomenon of the tail end of the Great Slump. We believe that microproduction is a new paradigm with relevance to the recovery in the specialty metals and base metals spaces as well.

Elcora meets these criteria both in its actual mining operations and its planned value-added push into graphene and engineered graphite anode production.

### **Exotic Isle - Graphite in Sri Lanka**

Sri Lankan graphite deposits are some of the richest on the planet. Under British colonial rule in the early 1900s, the nation was a significant graphite producer and exporter.

In the area where Elcora's property is located there were around 100 graphite pits operating in the approximately eight km ridge of hills that extend from Ragedara to Kahatagaha. Graphite was extracted through pits at shallow depths. This is evidenced by more than ten abandoned mine openings located on the seventy acres of mine land at Ragedara, namely Vihara Pathala, Maillagaha Pathala, Hurigahawala, Hunduwala, Bangalawala, Nugagaha Pathala, Mahawala, No 2 Pathala, etc.

During the period 1900–1920 and 1930–1950 production by above named graphite pits contributed a considerable portion for the graphite exports from the island. Independence came in the 1950s and then there was a distinct socialistic trend in governments in the following decades culminating in the nationalization of the graphite sector in 1971.

Owners of Ragedara & Kolongaha mines (H. L. De Mel & Company) and Kahatagaha mines managed to continue their operations until the 1950s. Due to the steep drop in graphite exports after 1950, more and more pits were abandoned. Under these circumstances, the owners decided to abandon the Ragedara mines and confined their operation only to the Kolongaha mines. As mentioned, in 1971, the graphite mining industry was nationalized and the State Graphite Corporation (SGC), later called State Mining & Mineral Development Corporation (SM&MDC), was established to run the mines which were in operation at that time namely Bogala, Kahatagaha & Kolongaha,

The private sector was allowed back into Sri Lanka's graphite industry in the early 1990s, but by that time, problems with the civil war were preventing development on a large scale. Additionally many of the State owned mines had been over-exploited, allowed to deteriorate and had not been subject to meaningful exploration to find new reserves. The opening of the mining sector in recent years presents an opportunity for foreign companies to pursue Sri Lankan graphite on a significant scale.

## Production

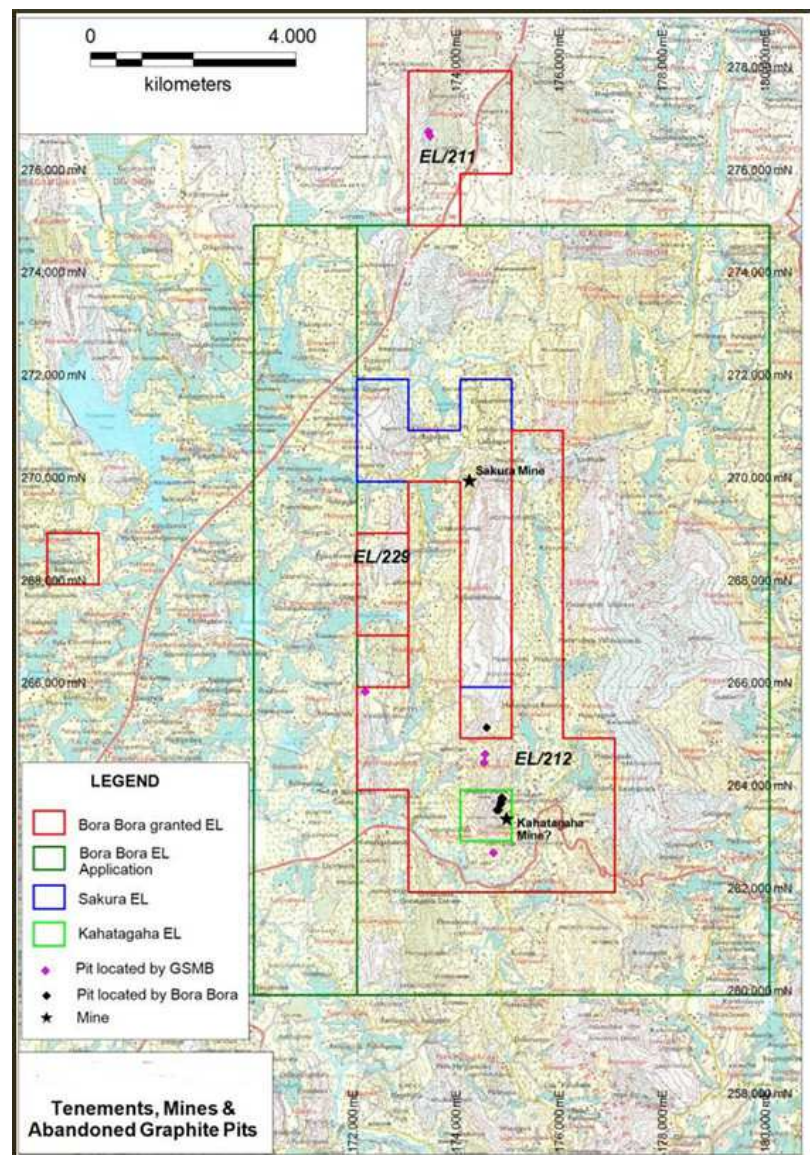
Sri Lanka is known to be underlain up to 90% by Proterozoic high grade metamorphic rocks with Proterozoic sediments, particularly along the coastal regions. According to the US Geological Survey Sri Lanka currently produces a very small amount of graphite, about 4,000 metric tons per annum. Sri Lanka's graphite is a unique product. The country produces lump and chippy dust graphite and is the world's only source of these particular materials. Lump and chippy dust graphite are the highest-value graphite products found globally. These unique and comparatively higher margin vein (lump) deposits currently make-up less than 1% of the world graphite production. In 2016, prices for Sri Lankan lump and chip graphite averaged \$1,820 per metric tonne, significantly higher than prices reported for other products, such as flake or amorphous graphite.

Production in recent years has been sourced from two graphite mines: Kahatagaha Kolongaha graphite mine operated by Kahatagaha Graphite Lanka Ltd., owned by the Government of Sri Lanka and Bogala Graphite Ltd., a 90%-owned subsidiary of Germany's Graphit Kropfmühl AG (a part of the AMG advanced materials grouping) that owns the Bogala graphite mine, a historic operation dating back to 1847.

## Arriving on the Scene

All graphite was largely the same until Zenyatta came along marketing the idea that it had a better grade of graphite and that the only other places this could be had (historically) was in the North of England (at a mine famous for its pencil "lead") and in Sri Lanka.

Elcora made its move into the graphite space when it acquired



a position in Sakura Graphite (Pvt) Ltd that controls 99 acres in Sri Lanka, which includes the Ragedara graphite mine.

The map shows the relationship of the claims of Elcora, the Australian listed graphite explorer Bora Bora (ASX:BBR) and the aforementioned Kahatagaha Kolongaha graphite mine. The Bora Bora concession is now up for grabs and has been offered to Elcora which is evaluating the opportunity.

In February 2014, Elcora announced that it had signed a binding letter of intent to acquire 40% of the outstanding shares of Sakura Graphite (Pvt) Ltd. Then on June 30, 2014, Elcora completed the purchase of 40% of the issued and outstanding shares of Sakura

The industrial mining license, exploration licenses and environmental license for the mine are currently being held by J.D.K. Wickramaratne for the sole benefit of Sakura and will be transferred to Sakura upon renewal. In addition, Elcora will earn 20% of the net income from the mine as the mine operator, and an additional 30% of the net income from the mine for managing the processing of the graphite, for the life of the mine. In order to maintain its 40% interest in Sakura, Elcora had to provide the capital expenditures required to put the mine back into commercial production (not to exceed US\$12mn) over the period through October 31, 2016. However, getting the mine back to commercial production and building an on-site graphite processing plant has not involved anything like that amount of expenditure.

Elcora issued a total 6,827,442 common shares at a price of \$0.19 per share to shareholders of Sakura inconsideration, plus 6,827,442 warrants. Each warrant entitles the holder to purchase one common share of Elcora at a price of \$0.19 for a period of five years. Sakura is entitled to appoint one director to Elcora's board, but has not done so as yet.

### **The ThyssenKrupp Deal**

Before launching into the details of the Ragedara asset and its evolution, it is key to put the development in the context of Elcora's evolving relationship with the largest German metals combine.

Back in February of 2016, Elcora, and its joint venture partner Sakura Graphite (PVT) Ltd., entered into a 10-year exclusive distribution agreement with ThyssenKrupp Metallurgical Products. While offtakes are a frequent feature of specialty metals/minerals company promotion that seldom lead to anything, in the case of Elcora however the product is already flowing to the offtaker.

Under the terms of the agreement ThyssenKrupp has been appointed the exclusive representative and distributor of Elcora's high purity (greater than 96% purity) graphite production for the territory covering the European Union, Russia, Turkey, USA and Canada. ThyssenKrupp has the right to purchase 50% of the vein graphite or other graphite produced by Elcora during the term of the agreement.

ThyssenKrupp's intention is to supply high purity graphite through its metallurgical products division, which complements its existing sales of chromite, bauxite and refractory grade graphite.



Under the terms of the agreement ThyssenKrupp undertakes to market 9,000 mt p.a. (50% of the estimated 18,000 mt p.a.) 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. Interestingly though Elcora is already selling all of its production to ThyssenKrupp with the bulk of the product going to the lubricant market and precursor battery companies.

### **Ragedara**

The Ragedara Graphite deposit is located in the South-East part of Sri Lanka, approximately 10 km northeast of the town of Kurunegala in the District of Kurunegala in the south central part of Sri Lanka. The property is approximately 110 km north or three hour drive from the capital Colombo and half an hour from Kurunegala city.

The Ragedara property has an unrestricted exploration license covering four square kilometres and a mining license for unlimited monthly production. Historically, the Ragedara mine operated (under state-ownership) between 1974 and 1985 and produced as much as 18,000 tons per year of high purity graphite.

### **Geology**

The Ragedara graphite mine area belongs to the crystalline basement terrain of the country and is underlain by gneissic rocks. Graphite veins and related fractures and joints indicate that the majority of them have an East-West strike trend with a steep dip to the South. The graphite flakes and needles in the veins are oriented at high angles to the vein walls. Field investigations revealed upward splitting of graphite veins which indicate potential thicker veins at a depth.

The graphite mineralization in the Ragedara mine area is of the natural crystalline vein type and comprises several veins of graphite, black-blue and lead gray in color. At the left can be seen an example of graphite from the “chill-zone” at Ragedara.



Veins are tabular or lenticular in shape and have widths of a few centimeters to few tens of centimeters. The largest vein observed at Ragedara was close to 2m wide; the largest one found in Sri Lanka being 6m wide. The massive crystalline graphite shows uniformity throughout the veins and is composed of massive to millimeter size closely packed black graphite flakes. The very clearly marked host rock contact shows evidence of a chill zone demonstrated by the presence of 1m to 20m long acicular graphite.

The general strike trend of veins is N85°W with an angle of dip of 75° to the south. The thickest parts of the veins coincide with intersections of fracture planes in the rock that are generally having moderate to steep dip angles.

The lateral extension of the veins along strike is variable and the workable part can extend from a few meters to about 50m. Along the longitudinal axis of the veins, the graphite shows evidence of a pinch and swells behavior thus affecting the width of the veins. The down dip extension cannot be estimated, but could be more than several hundred meters as commonly happens in other similar graphite mines in Sri Lanka. Kahatagaha mine which is situated about 8 km south of the present location has graphite veins extending more than 675m deep which are still being worked commercially.

The graphite grade in the Ragedara veins ranges from 92-99% graphite. Historically, some of the veins have also contained fist-sized silica than can be selectively mined from to graphite resulting in two potential products.

### **Exploration**

In early 2015 Elcora completed an underground survey of the existing workings of the mine site, It also undertook a Phase 1 underground drill program and commenced expansion of the underground workings. The underground survey was conducted starting at the surface level and on the 52, 125 and 164 foot levels. The company also undertook ventilation studies.

In December 2015, Elcora announced that it has progressed to advanced underground drilling work to define the twelve historically worked veins at depth and to find additional veins at the mine. Historically, the peak production of these 12 veins was 18,000 tonnes per year with indications that, in the past, the Ragedara mine may have produced between 50,000 to 100,000 tonnes of high quality graphite. The mine was abandoned in 1987 due to improper mine planning and infrastructure. The vein structure remains open at depth both downward and into the mountain.

Two drilling locations were used at the 0 m level exploring into the hill, which discovered three veins ranging between 15 and 24 cm in width within 10 m of the old workings. These veins are currently being mined.

An additional drilling location was added at the 38m level to pass under the historical working of the mine. This has already resulted in locating the five veins with widths of 66cms, 40cms, 20cms, 20cms and 15cms. Additional holes were drilled to further define these veins and the current shaft was deepened to provide access for future work.

### **Resource**

At this point in time, there is no established resource nor is there any known body of commercial ore on the property, and no estimates of future production capability or the economics of any extraction

activity can be made. However, the company has in hand a non-NI43-101 compliant resource estimate that focusses on the individual veins at Ragedara. This is shown below:

Metallurgical tests undertaken by SGS indicated the possibility of separating the massive crystalline graphite into small grains and flakes in several fine size categories. A dry mechanical process of 15 to 45 min with the use of ceramic grinders followed by sieving shows that more than 63% of the graphite is greater than 32 mesh with a grade of 97.5% C(t), 20% of the graphite between 32 and 80 mesh with a grade of 97.6% C(t), and the smaller residual material with a grade of 97.2% C(t).

Ragedara Mine - Resource Estimate				
Number of Economic Veins	Width (m)	Length (m)	Depth (m)	Graphite tonnes
19	0.3	25	25	8,051
25	0.4	40	25	22,600
20	0.5	60	50	67,800
15	1.0	70	200	474,600
10	1.2	100	200	542,400
10	1.5	100	300	1,017,000
10	1.8	100	300	1,220,400
<i>Of which</i>				
Indicated				193,230
Inferred				3,159,621
<b>IAS Ragedara Base Case</b>				<b>271,200</b>

## The Mine

In the three years prior to 2014 Sakura developed the project with clean-up and dewatering of the mine, with much of the mining equipment having been upgraded over the two years before Elcora acquired its stake.

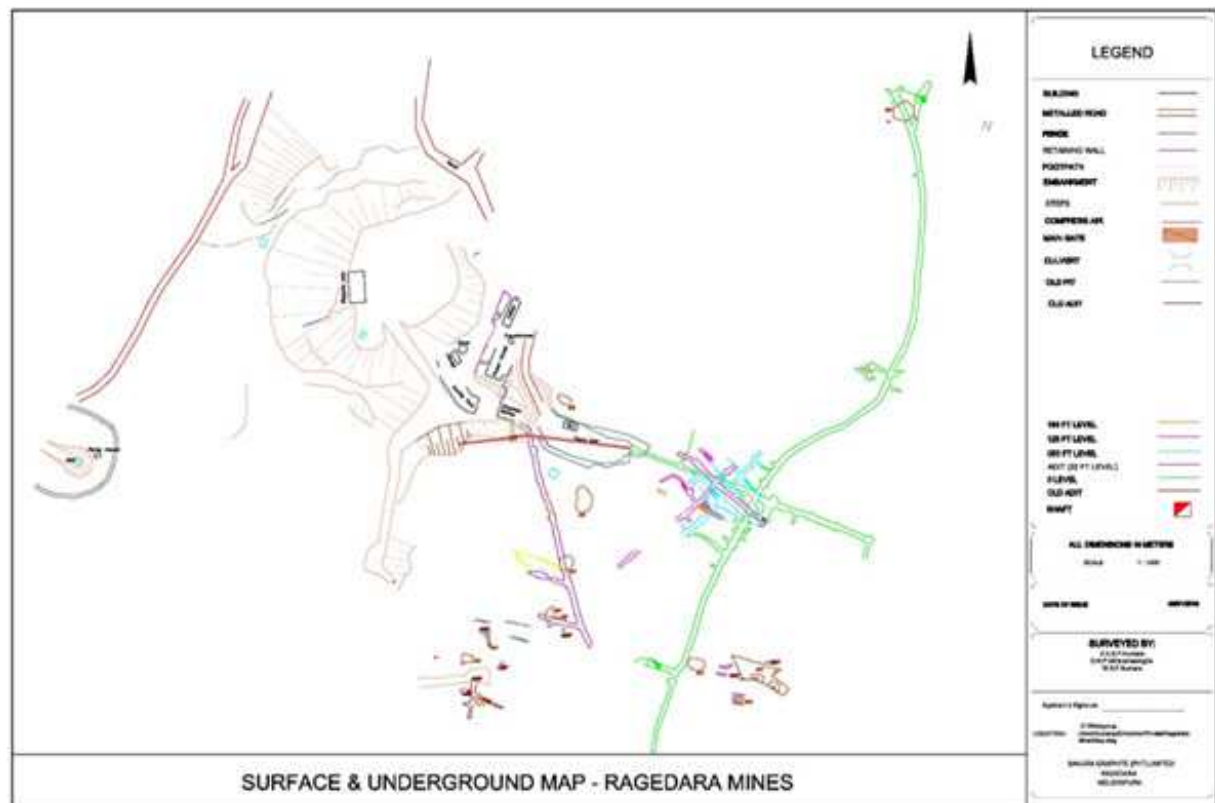
The zero level (green) adit runs approximately parallel to the veins and joins the main drift 173' from the entrance. Just past this junction is the main shaft. Running from the drift are a number of veins mined out at this level. The same veins are found at the 53 and 125 foot levels displaced to the south as they are dipping at about 80 degrees. Limited older workings are found at the 164' level as CO<sub>2</sub> levels are considerably elevated at this depth which limited traditional mining as it was done, rather frighteningly, without ventilation using coconut oil lamps.

Since Elcora became involved with the Ragedara mine the focus has been on supporting the underground exploration and construction work, including construction of emergency exits from the underground workings, and the mitigation of safety hazards such as low hanging ceilings and inadequate ventilation in some areas, and establishing proper safe locations within the workings.

In November 2015 the completion of the construction of its Ragedara Graphite Processing Plant was announced and that it had started processing the stockpiled graphite at site, of which there was some 250-300 tonnes, with an average grade of 80-95%.



The map below shows the site.



During 2016 Elcora appointed Klaus Leiders as the General Manager for the Ragedara mine. He is a German national and a mining engineer and brings extensive experience to the Sakura Joint Venture. He oversees all facets of the operation, including the processing plant and the mine. Another key role will be to interface with customers like ThyssenKrupp.

In early October 2016 Elcora announced the first shipment of processed graphite extracted from its Ragedara mine. The shipment was distributed by ThyssenKrupp Metallurgical Products.

The mine is currently operating on one shift per day producing one to two tonnes of high quality graphite per shift aggregating approximately 20 tonnes per month at average at a cost of \$136 per tonne of graphite.

### The Ragedara Graphite Processing Mill

This was a key part of the upgrade of the mine as there had hitherto been no modern processing facilities for the mine's output. Elcora has custom designed its processing technology targeting the high-grade graphite at Ragedara. This technology minimizes the use of chemicals and result in no environmentally damaging products, by products or waste, which makes the plant very environmentally friendly and safe.

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The project involved the construction of a new housing for the plant. Long-order equipment was being modified to hydraulic drives allowing Elcora greater operational flexibility, including variable speed and torque on the equipment. Another task was the fabrication of custom designed graphite flotation vessels. On top of this the company needed to hire and train process engineers.

The now complete facility performs four refining activities: grinding, flotation, dewatering, and product load-out. The fully refined graphite has a purity of over 99% and size range between 5 microns to 1 millimeter.

A team of seven fulltime employees are currently working at the mill. The mill can operate both in batch mode or process a continuous flow of material in a closed-circuit mode. The current processing capacity is 2,500 tonnes per year; with final product purity reaching over 99%. This capacity can be increased to 10,000 tonnes without significant further investment once the mining production increases.

The team defined the targeted graphite particle size distributions and finalized the designs for various stages of the process circuit accordingly. As part of the plan, Elcora is capable of producing a particle size distribution suitable for lithium ion battery applications.

Below can be seen the mixing tanks at the Ragedara processing plant.



The Sakura JV expects to ship 5,000 tonnes of graphite this year at prices which will range from \$1,500 to \$2,500 per tonne.

The second module with a capacity of 2,500 tonnes per year will cost less than \$1mn to build and Elcora has sufficient cash on hand to fund the development of this plant.

### **Value Added**

Graphene, which Elcora is planning to put into production through its wholly-owned Graphene Corp. subsidiary, is one of those products. Thus far it has delivered graphene in sample quantities to global national, industrial and defense, research laboratories and battery components' manufacturers.

Elcora's move into the anode paste market is part of its long-term strategic plan to be a vertically-integrated graphite and graphene company that mines its own graphite, conducts research and development, processes the raw material, and sells both it and products made from it.

Anode paste is made with carbon and is used in the manufacture of rechargeable lithium ion batteries and the world market for the material is currently about 250,000 tonnes per year. The market today is dominated by Chinese producers using acid treated graphite with fluctuating quality.

Anode graphite test samples sent out by request to a dozen Lithium Ion battery manufacturers, globally, and a full-scale anode graphite production facility is under construction in North America.

### **The Strategic Partners**

Although it began as a miner Elcora has decided upon alliances with technology and manufacturing vendors to deepen its knowledge of the value-added aspect of graphite. To this end, it has formed alliances, including one with a spinoff of the 2D Materials' Center of the National University of Singapore, and with manufacturing engineering companies specialized in battery anode production and testing and one that is a world class manufacturer of battery manufacturing machinery. Elcora will work with those companies to develop an anode production line using Elcora in-house spheronized graphite.

The well regarded laboratory, Coulometrics, has tested Elcora's graphite for use in Li-ion batteries for electric cars. Test results have shown that Elcora's graphite has excellent suitability for anodes.

### **Graphene Corp**

As Elcora is Halifax-based it might seem an obvious choice that it resolved to place its research and value-added operations in that city. However the decision was based on more than convenience, with the port being a major drawback as well as incentives and assistance offered by the provincial government of Nova Scotia.

In April 2016 Elcora received approval from the Atlantic Canada Opportunities Agency for funding under the agency's Business Development Program. ACOA contributed so far \$500,000 towards purchasing of equipment, renovations, hiring staff and marketing in order to commercialize Graphene Corp. in Halifax. The contribution was in the form of an interest-free loan. The expected project result is to identify the

optimum commercially viable product and markets for high grade graphene. The interest-free loan is repayable over five years commencing in July 2017.

In late October 2016 Elcora reported the first shipment of graphene from its 100% wholly owned subsidiary, Graphene Corp. The graphene, produced from its plant in Bedford, Nova Scotia has been sold. The graphene meets all the high-quality specifications as tested by the Centre for Advanced 2D Materials (CA2DM) at the National University of Singapore (NUS). The plant is ramping up production of graphene in powder and in wafer shape to meet demand following positive review of the product by its clients.

### **Halifax Graphite Anode Facility**

The company has now progressed to financing an anode paste facility and the expansion of its Anode test program to encompass graphite sources other than those owned and operated by the company. These include, particularly, high-grade natural graphite sourced from the East Africa and the US. The move to other graphite sources is to ensure sufficient supply flexibility for anode production, and to minimize supply risk. Elcora's separation process is specifically designed to be flexible and coupled with flexible supply will in turn ensure an uninterrupted supply to Elcora's clients.

The intention of Elcora is to establish a \$5mn plant that will produce 2,000 tonnes of anode paste per annum, hopefully moving up to a 20,000 tonne per annum facility. The funding for this was secured through a combination of equity finance, Federal government loans and grants. The first phase is expected to start producing by the end of this year and to employ roughly 25 people, mostly engineers and lab technicians.

Anode paste typically sells for US\$10,000 to US\$20,000 per tonne and Elcora's product is expected to come onto the market at somewhere between \$12,500 to \$15,000 per tonne. This might imply revenues of \$25-30mn per annum.

### **Funding**

In mid-June 2016 Elcora closed a non-brokered private placement financing by issuing 2,208,750 units at a price of \$0.40 per unit for aggregate gross proceeds of \$883,500. The units issued included 1,104,375 share purchase warrants entitling the holder to purchase one additional common share of Elcora at an exercise price of \$0.52 for three years following the closing of the private placement.

### **Board & Management**

**Denis Choquette** is the Chairman and a director. He was a founding partner of GTR Capital, Choquette has utilized his expertise to provide mergers & acquisitions services to its clients throughout North America, Europe and Asia. He has been actively involved in Elcora's operation since 2011, especially in the re-opening and management of the Sakura Graphite mine in Sri Lanka. His knowledge of the

graphite industry was key in raising equity for the mine and turned it into production. He has been a key player in setting up a joint venture with Elcora Resources Corp in 2014.

**Troy Grant** is the President and CEO, and a Director. He was formerly a Vice President of Corporate Finance with Citadel Securities. At Citadel Securities he raised in excess of 100 million in capital dollars. Mr. Grant was Institutional European Sales with Grafton Securities. In this role he liaised with UK and European mining institutions, introducing Canadian mining companies to the European marketplace as well as playing an advisory role on strategic directions.

**Dr. Shane Beattie** is the CTO of Anode Technologies. He has more than 15 years of experience in energy storage and anode development. He earned his Ph.D. working with Jeff Dahn at Dalhousie University. More recently, he was the Technical Director at Warwick University's Battery Pilot Scale-up line. He is responsible for expanding the company's existing capabilities to include testing of pouch cells, evaluating different graphite sources, supervision of the anode facility construction and related personnel, and interfacing with clients. He brings valuable experience working with several automotive companies using Li-ion technology and with cell manufacturers.

**Dr. Ian Flint** has over 25 years' experience in graphite metallurgy, engineering and processing. He also has a strong background in equipment and circuit designs, the development of materials, physical processing, hydrometallurgy and pyrometallurgy. Prior to joining Elcora, he worked at Bissett Creek, Victoria Graphite, Quinto, Crystal Graphite Corp., Integrated Carbonics, and Worldwide Graphite. He also taught for over 10 years at Dalhousie University on mining engineering and graphite processing.

**Theo van der Linde**, a director and CFO, has 17 years' experience in finance, administration and public accounting. He currently acts as a mining consultant as the President of Executive Management Solutions Ltd.

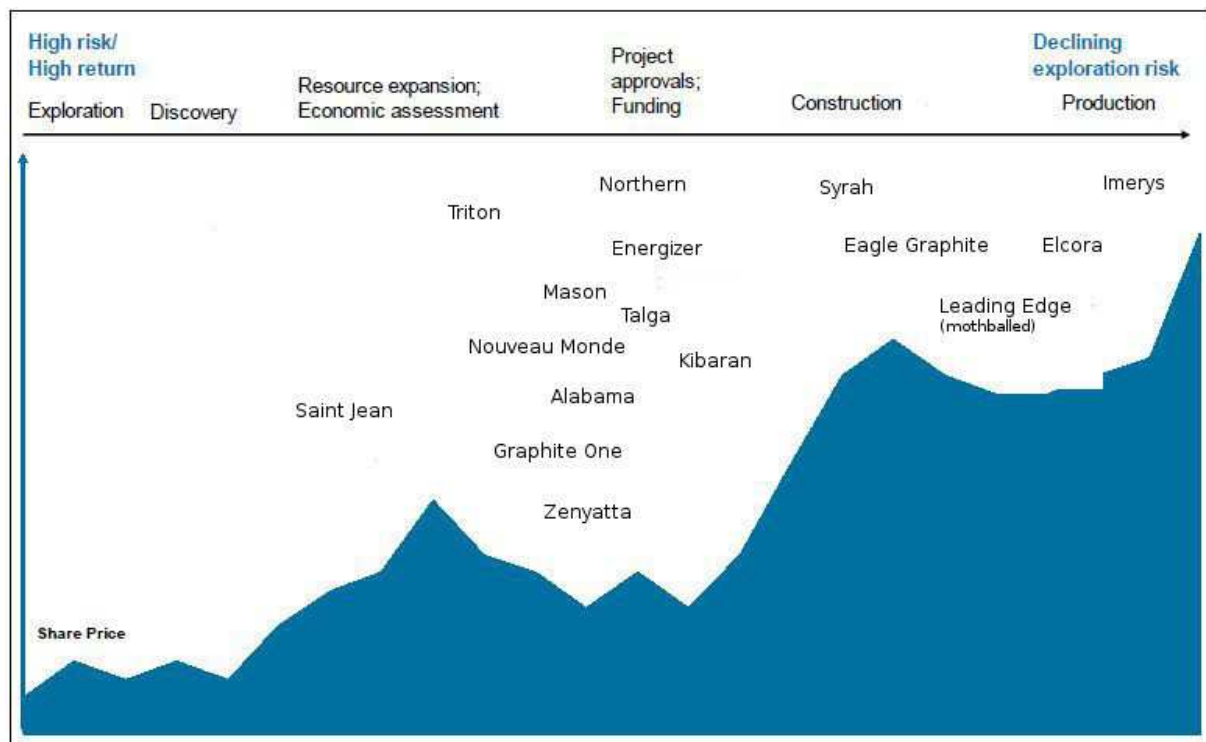
### **Graphite Players – In the Running?**

On the following page can be seen our "lifecycle" chart adapted for the Graphite space. Imerys, the grandfather of the industry is clearly ahead but with its main mine nearing the end of its life the question is who shall be the supplier (if any) to its processing plants.

Elcora as a producer is obviously next in the running and Eagle Graphite have a (relatively recently) mothballed graphite mine in British Colombia.

Syrac with its construction advanced in Mozambique also figures in the "real" end of the spectrum. They, interestingly enough are also talking of an upgrading operation in Louisiana.

After that come a bunch of developers, that are milling around in search of offtakers or financiers.



Hopefully Leading Edge will return to fray and meanwhile we discovered Eagle Graphite that has a (halted) mine with a stockpile and processing plant in British Columbia that has previously generated no attention.

In preparing our estimation of where the various players are in the race to the graphite “finish line” we have discarded some well-known names, such as Great Lakes, Lomiko, Focus and Canada Carbon, from the running.

Great Lakes appear to have dropped any mining pretensions (to focus on processing) and Canada Carbon is going to be a marble miner first (so hard to quantify). Focus is not our radar screen and Lomiko seem to be eternal explorers. Saint Jean Carbon has recently scored an incredible own goal which may very well remove it from this race.

### Risks

The biggest advantage that Elcora has at the moment is that many companies from the 2013 graphite boomlet were talkers rather than doers. This means that most of the potential “competition” is stuck in the starting gates at the running of the Graphite Stakes while Elcora has grabbed a lead in the race. However, it is still necessary to highlight general and specific risks which in the case of Elcora we perceive as being:

- ✗ Graphite price weakness



- ✗ Financing difficulties
- ✗ Country risk in Sri Lanka
- ✗ Excessive supply from too many projects coming on line mid-term

Price weakness is less a case of potential demand faltering (which is highly unlikely) but rather of some sort of malevolent price-spoiling action emanating from China. If it did it would be self-harming in the first instance. With Elcora and Syrah both targeting the value-added chain, lower prices (temporarily) may damage mining margins but it's unlikely they would hurt anode sales prices.

Financing is a perennial issue in mining markets but with the mine in Sri Lanka up and running (and under-budget) and with the funds for building the Halifax plant all lined up, the company is moving into that sweet spot where it does not need more money per se but has the luxury, as a producer, of being able to expand from cashflows or funding from offtakers that now realise that the company is "real".

Exotic locations like Sri Lanka come with their tribulations, but the civil war in the country is now retreating farther into the past. Also left behind are the strange nationalist/socialist economic policies that ruled for decades after independence. The lessons have been learnt that these did not help the mining sector in particular.

As noted many of the remaining graphite projects won't be going anywhere due to excessive capex numbers attached to their aspirations. Syrah will most likely be the only "big" producer to come to market with the other likely entrants being non-disruptive smaller capex wannabes. Thus Elcora is likely to be part of a small band of producers, rather than trampled in a rush of bigger players.

## Conclusion

In our worldview production trumps all and Elcora has both its more traditional graphite mining business and now its graphite anode business to exploit both the upstream and the midstream of the graphite business. The swift pace of implementation at Ragedara has meant that Elcora joined the very exclusive group of graphite producers during 2016. In doing so it has pulled well ahead of the other claimants to leadership in the graphite space.

While graphite shows little potential for the same type of price squeeze that has propelled other battery metals higher, there is a distinct feeling that major Western end-users want to see a non-Chinese graphite supply (and elaboration) industry evolve so they will not be vulnerable to Chinese policy gyrations or attempts at market manipulation. Elcora with its goal of producing graphite anode material in Nova Scotia is aiming to snatch for itself a niche in the Lithium Ion battery value chain in North America.

Beyond the initial mine, the fact that the company wants to also move in on the midstream of the Lithium-ion battery surge with an anode plant shows that it has grasped the reality that the margins are in the value-added. Elcora is a **Long** position rating in the Model Mining Portfolio with a 12-month target price of CAD\$0.64.

Monday, April 3, 2017



## Important disclosures

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