



Lithium Report 2016

Update 1

**Updates On All Companies!
Plus Two Additional Stocks!**



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Preface

Dear Readers,

In the following pages we present to you with pleasure our first special report on the topic "Lithium". This report is the start of a series of such informative reports. Swiss Resource Capital AG has made it its business to topically and comprehensively inform precious metals and commodity investors, interested parties and the individual wants to become an investor in various commodities and mining companies. On our website www.resource-capital.ch you will find 17 companies and information and articles about the topic commodities.

Our series of special reports begins with lithium because we consider this metal to be one of the great future metals in the energy sector and in spite the already happened boom, see big chances and potentials in the long term. The battery development is only at the beginning of a long road and the electric automobile has to capture its place among consumers and in the automobile history. Lithium is the main component of all available large-scale production batteries and accumulators and therefore the crucial link in the electro mobility dream. The necessary charging infrastructure is pushed along and expanded in Germany which might accelerate the future trend.

The Paris car show in the fall of 2016 will be dedicated to the electro mobility and the 2017 shows in Geneva as well as Tokyo should not be different. The issue of the short range should resolve itself with new accumulator technologies within the coming three to five years. This will drastically increase the demand for electric cars. According to experts the demand increase will be based on the formula "500+200" meaning 500 km range plus 200 km reserve. Then, it is believed, the die-hard driver of combustion engines will switch to electric cars. Mercedes is already working on a bus for clean local public transport with a range of over 300 km. Volkswagen wants to invest around € 10 billion in the electro mobility during the next five years and starting 2025

to sell more than one million electric cars per year.

All this will be enormous drivers for the lithium demand and in the interview with the expert and fund manager Tobias Tretter (interview also available on Rohstoff-TV) you will read how and in which directions the developments advance. Commodities are the base of our whole life. Without commodities there are no products and no technical innovations. New technologies need a variety of special metals which are mostly rare and difficult to extract.

With our special reports we would like to give you the necessary insights and inform you comprehensively. In addition, our two Commodity IPTV channels www.Commodity-TV.net & www.Rohstoff-TV.net are available to you free of charge. On the go we recommend our new Commodity-TV App for iPhone and Android which also provides real-time charts, share prices and the latest videos.

My team and I hope you will enjoy reading this edition of the special reports and hope that we can provide you with much new information, impressions and ideas. Only the one who gets broadly informed and takes matters relating to investments in his own hand will be in the winners and preserve his wealth during these difficult times.

Jochen Staiger



Jochen Staiger is founder and CEO of Swiss Resource Capital AG, located in Herisau, Switzerland. As chief-editor and founder of the first two resource IP-TV-channels Commodity-TV and its German counterpart Rohstoff-TV, he reports about companies, experts, fund managers and various themes around the international mining business and the correspondent metals.



Tim Roedel is chief-editorial- and chief-communications-manager at SRC AG. He has been active in the commodity sector since 2007 and held several editor- and chief-editor-positions, e.g. at the publications Rohstoff-Spiegel, Rohstoff-Woche, Rohstoffraketen, Wahrer Wohlstand and First Mover. He owns an enormous commodity expertise and a wide-spread network within the whole resource sector.

Lithium – the substance of the 21st century is just gaining momentum!

Carbon was the past – Lithium is the future

Rarely was a chemical element of similar great importance as lithium will be in the coming decades. Since the announcement of Tesla Motors' plans to build up to 500,000 electric vehicles per year in its mega-factory starting 2017, lithium, in connection with lithium-ion batteries, is on everyone's lips. The metal in its future significance is comparable only with carbon that is not only important in daily life in the form of plastics but also as energy source in form of coal and crude oil. Whereas carbon above all is an energy supplier and energy source, lithium will become more and more the energy storage medium of the future.

What is lithium?

Lithium is a light metal belonging to the alkali metal group. It is the least dense of all known solid elements. It has half the weight of water, is silver-gray and relatively soft. Lithium is highly reactive and therefore found in nature only as a lithium compound. Contact with air tarnishes the surface due to the formation of lithium oxide and lithium nitride. In pure oxygen lithium combusts at 1800C with a bright red flame forming lithium oxide. Lithium reacts with water violently forming lithium hydroxide.

The global lithium extraction is divided in several branches producing the following types of lithium compounds:

1. Lithium carbonate
2. Lithium hydroxide
3. Lithium chloride
4. Butyl lithium and
5. Lithium metal

Usually metallic lithium is produced in a multi-stage process starting from lithium

carbonate, and is traded mostly with a purity of 99.5 %. The metallic lithium is used as a catalyst in the chemical and pharmaceutical industry as well as in the production of aluminum lithium alloys.

The industry distinguishes three basic types or qualities of lithium compounds:

1. "Industrial grade", with a purity of over 96 % for glass, fluxing agent and lubricant;
2. "Technical grade", with a purity around 99.5 % for ceramics, lubricants and batteries; and
3. "Battery grade", with a purity of over 99.5 % especially for high end battery cathode materials.

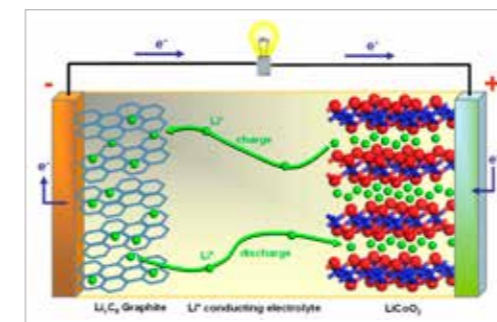
Main application area: batteries and accumulators

The above mentioned specific and versatile properties make lithium a sought-after material used in many application areas. It is not a surprise that the main application area of lithium was constantly changing in the past. Initially it was used primarily in medicine and in the 1950's the element became commercially successful as an alloy component. Due to its low weight and the positive properties regarding to tensile strength, hardness and elasticity lithium became an inherent part of the aerospace technique. During the past 20 years the situation changed. In the course of the beginning of the electro revolution it was recognized that due to the low standard electrode potential of lithium the metal is almost perfectly suited as the anode in batteries. Lithium batteries are characterized by a very high energy density and can generate a very high voltage but they are not rechargeable. This property is found in lithium-ion accumulators where lithium metal oxides, like lithium cobalt oxide, are used as cathode material. For the production of accumulators

and batteries purity grades above 99.5 % are needed. Industrial grade lithium hydroxide is used, among other things, as raw material for lubricants as well as coolants and technical grade lithium hydroxide is used in the production of accumulators and batteries. Lithium carbonate – crystalline, granulated or as powder – for example is used for the electrolytic production of aluminum, in the ceramic and pharmaceutical industry as well as in the alloy technique. For the production of lithium-ion accumulators lithium carbonate with a specific purity is used in the form of a very fine powder (battery grade powder). The extraction and processing of (especially high grade) lithium is considered to be very expensive.

Lithium-ion accumulators are considered the non-plus-ultra

Currently research is conducted and works done globally on increasing the power of accumulators for electric cars. In the meantime it has become evident that the lithium-ion accumulator is a clear favorite. One reason among others is that inside a lithium-ion accumulator the voltage is generated through the exchange of lithium ions. Due to the high energy density lithium-ion accumulators deliver – in contrast to conventional mercury or nickel based batteries – a constant performance throughout the discharge period



Source: www.intechopen.com

and not subjected to any memory effect - that is, the gradual capacity loss throughout their service life due to many partial discharges. Therefore lithium-ion accumulators have a clear advantage over conventional nickel-cadmium accumulators.

The production requires large quantities of lithium

The "disadvantage": the production of lithium-ion accumulators requires large quantities of lithium. According to a recent BMW study depending on the model around 80 to 130 grams of metallic lithium per kilowatt hour storage capacity is needed. Initially, that doesn't sound like much but it adds up to a significant amount. For example, the Mini E, a BMW built electric car within a prototype study, has a lithium-ion accumulator with a total capacity of 35 kilowatt hours. The range with one charge is 200 to 250 km. It is clear that such a range does not meet the desired expectations of the producers as well as all of the (future) customers. They would like to have a range of at least 500 km, but best would be 1,000 km.

Application in the area of regenerative energies

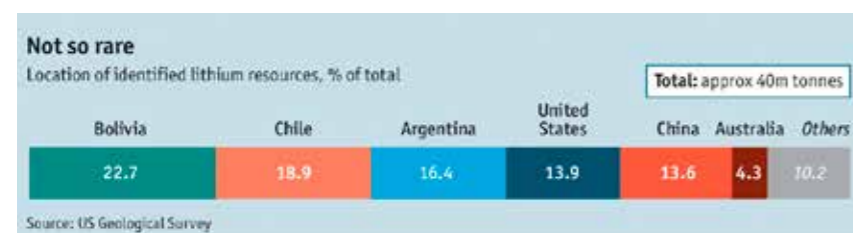
The application of lithium in lithium-ion batteries or accumulators in car manufacturing is only one of many possible uses. Corresponding energy storage systems will be increasingly used for the storage of electricity derived from alternative energy sources. The phenomenal expansion of the power generation in wind farms or solar cells is a giant advantage for the environment but an enormous challenge for the power grids. The reason for this is the extreme fluctuations during power generation by regenerative energy sources. When the wind blows or the sun

shines large quantities of electric energy are “pumped” into the grid in a very short time creating enormous short lived over-capacities that are not used. According to calculations of the Bundesverband Windenergie (Federal Association of Wind Energy) 20 percent of the annual return of a wind farm is lost due to turbine shut-down during power grid overload.

The biggest future field of application for lithium-ion accumulators: Decentralized Energy Storage

Smart-Grid-Systems should prevent a power grid overload but need a large number of short and middle term energy storage systems to store the surplus energy and feed it into the grid when there is a lack of wind and solar power. Lithium-ion accumulators could be the solution to this problem by buffering the surplus energy and feeding it into the grid on demand. Many producers already build efficient lithium-ion accumulators that will be used decentralized in a family home with a photovoltaic system on the roof. An example is the Tesla Powerwall, a solar battery for private homes which is produced in the Tesla mega-factory in Nevada, USA, since October 2015. The electric energy storage system consists of accumulators, charge control and a liquid cooling system. It is possible for private customers to connect up to 9 batteries to reach a total capacity of 57.6 kWh. With this, Tesla got the ball rolling and by doing so is making the decentralized energy storage cheaper as well as efficient and this area to be the most important driver for the lithium market.

(Source: Economist.com)



Supply Situation

Two types of lithium deposits

In general lithium is derived from two different sources.

1. Brine deposits: Lithium carbonate is primarily derived by evaporating the lithium bearing brines with addition of sodium carbonate in salt lakes. For the production of metallic lithium the lithium carbonate is dissolved in hydrochloric acid which produces carbon dioxide that escapes as gas and lithium chloride in solution. This solution is reduced in the vacuum evaporator until crystallisation of the lithium chloride.
2. “Hard rock spodumene” deposits: in this case the lithium compounds are not derived from the salt of salt lakes but from spodumene, a lithium bearing aluminum silicate mineral. The spodumene is mined using conventional techniques and processed to a concentrate that is often transformed to lithium carbonate with a purity of more than 99.5 %. The necessary intensive thermal and hydrometallurgical processes are considered as very expensive. This type of deposit is almost exclusively mined in Australia and the processing takes place primarily in Chinese facilities.

Lithium is abundant

In the past it was wrongly assumed that a global switch from conventional combustion engines to electric motors is impossible due to lack of lithium. That is not quite right. Lithium is not that rare in the earth, accounting for approximately 0.006 % of the earth’s crust, therefore rarer than zinc, copper and tungsten but a bit more common than cobalt, tin and lead. According to estimates of the US Geological

Survey, there are 40 million tonnes of lithium mineable globally, 65 % of that alone in the South American countries of Bolivia, Chile and Argentina. Currently the biggest lithium carbonate production takes place in the Salar de Atacama, a salt lake in the northern Chilean province of Antofagasta. Approximately 40 % of the global lithium production originates in this region.

Currently Lithium production is focused primarily in four countries and by four companies

Currently, around 80 % of the total lithium production worldwide originates in these three South American countries plus Australia and production is split between four companies. As a result, the whole lithium market is lacking transparency. This is the reason the big battery and accumulator producers like Panasonic and the leading electric car manufacturers, above all Tesla Motors, are looking for long-term supply contracts with relatively small development companies that in part are not producing before 2020. As a result of this supply oligopoly, lithium is currently not traded in the market and the actual trading prices are strictly confidential. One reason often mentioned by the supplier is that the available and produced lithium qualities are too different for a standardized market place.

Lithium production will increase sharply

In 2015 the global lithium production (for standardization reasons LCE = “lithium carbonate equivalent” a universal conversion factor for all above mentioned lithium compounds) was approximately 175,000 tonnes LCE. According to projections, this number will increase to 360,000 tonnes LCE by 2020 and over 650,000 tonnes LCE by 2025. The latter is not based on concrete mine expansions or new mi-



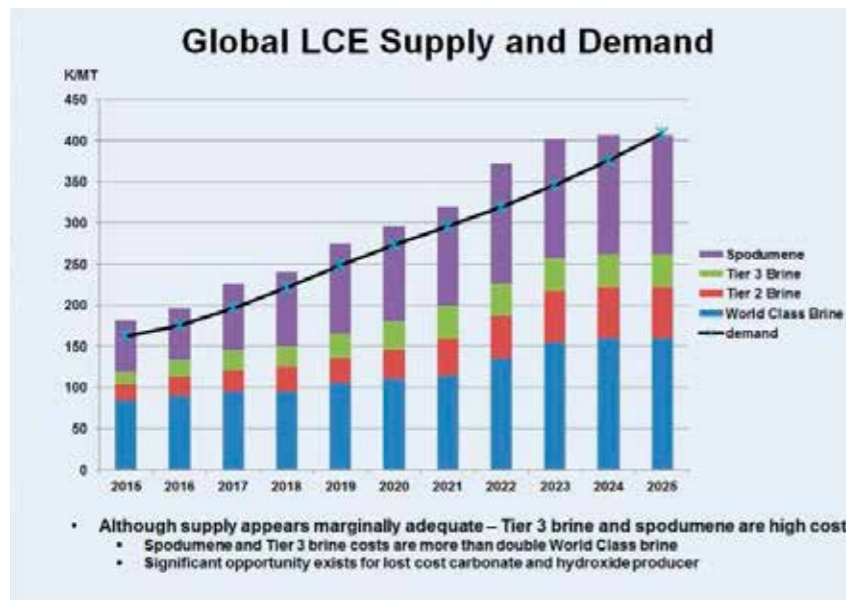
nes and we can assume that the production in 2025 will be between 360,000 and 650,000 tonnes.

Currently, around 80 % of the total lithium production worldwide originates in four countries. (Source: USGS Mineral Commodity Summaries / Lithium X)

The price is always crucial but relatively negligible for the accumulator production!

In the end the price is only important for the economic extraction of the existing lithium deposits. In the past months the price has risen sharply. In mid 2015 the price for a tonne lithium carbonate was around US\$ 6,000 and has climbed to the presently over US\$ 20,000 and surely just a snap shot. We can assume that the price will settle, in the middle to long term, between US\$ 10,000 and 12,000 per tonne lithium carbonate. Either way, this is a lucrative business for the producer because the mining costs at current projects are US\$ 3,000 to 6,500 per tonne.

From a quantitative point lithium accounts for a significant part of a battery, but accounts for only roughly 4-5 % of the costs of a battery. Hence the lithium price is insignificant for the production of lithium ion batteries and could be kept at an economic level for the lithium producer.



(Source: www.kirillklip.blogspot.com)

Development companies work under high pressure at new projects, ...

As the big companies **Albemarle**, **SQM**, **FMC** and **Tianqi** have plans to increase their production and at the same have no interest in falling lithium prices, many development companies work on the advancement of new lithium projects and the delineation of concrete deposits and resources.

... in part at new lithium hot spots

Therefore, besides the typical lithium regions South America and Australia, new regions in North America and especially Canada, Mexico and (due to the proximity to the future top consumer Tesla Motors) the US state Nevada emerge as lithium hot spots. In the past years the **Clayton Valley** in Nevada has become the Lithium-Eldorado because it hosts Albemarle's Silver Peak Mine, the only operating brine lithium mine in North America. The Clayton Valley is one of the few areas worldwide where commercially mineable

lithium brines are found. Recently, **Pure Energy Minerals** closed an offtake agreement with Tesla Motors. Besides **Albemarle** and **Pure Energy Minerals**, more than a dozen development companies are now active in the Clayton Valley including **Advantage Lithium**, **Lithium X Energy**, **Nevada Sunrise** and **Zadar Ventures**. Some promising companies like **MacArthur Minerals** and **Zadar Ventures** are also active in Australia. The (main) Australian hot spot is in Western Australia in the Pilbara Region. As well as **MacArthur Minerals**, **Altura Mining** and **Pilbara Minerals** are active in this region and each of these two companies already have a large resource. A second smaller lithium hot spot is in Australia's southwest. There, in the so called Ravensthorpe District, **Galaxy Resources** is operating the Mt Cattlin lithium mine. **Zadar Ventures** has an option to acquire two lithium claims in the Ravensthorpe District. The third hot spot is in **Argentina's northwest** where **Orocobre** operates the Olaroz lithium mine. In this region, some development companies like **Millennial Lithium** and **Lithium X** are active. An additional lithium hot spot seems to be emerging in **Canada**. Active at the moment are, among others, **Avalon Advanced Materials**, **Nemaska Lithium**, **Fairmont Resources** and **Jourdan Resources**.

Summary supply side

The lithium production is (still) in the hands of a few producers. The worldwide biggest lithium producer Albemarle acquired Rockwood Holdings, the owner of the two largest lithium deposits in Chile at the beginning of 2015. Albemarle and three other companies, SQM, FMC and Tianqui (i.a. Albemarle's joint venture partner in Australia) share the lithium market mostly between each other. Although there is seemingly enough lithium on the planet, the extraction can be costly and time consuming so that higher prices are not an automatically leading to a supply

increase. The supply should increase in the coming years but forecasting is difficult for the period after 2020 due to current lack of data for potential mine extensions or construction of new mines. Increased exploration activities by (smaller) development companies are indications of the potential establishment of new mines. As of the middle of June 2016, besides the established majors, in total around a dozen companies already have a lithium resource.

Demand situation

The demand is rising rapidly!

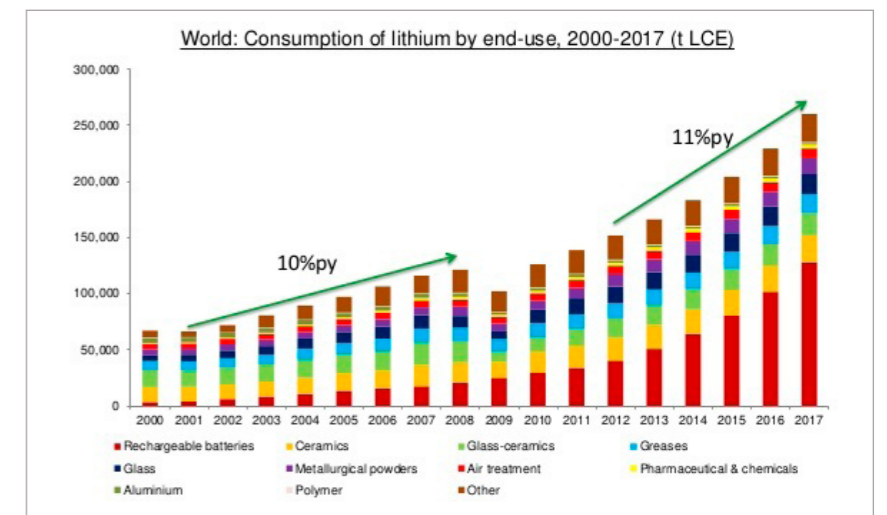
One reason for the current rapid price development is a constantly rising demand. In 2000 the demand was at approximately 65,000 tonnes LCE and reached 175,000 tonnes LCE by 2015.

Leading analyst firms like Canaccord that have been dealing with the lithium market for many years anticipate an increase in lithium demand to 350,000 tonnes by 2020 and to up to 700,000 tonnes by 2025. The driving factor will primarily be the demand from the battery and accumulator sector in association with the automotive industry. Today, one third of the lithium demand comes from this sector; by 2025 it will probably reach 75 %.

China the biggest consumer

At the moment China is the biggest lithium consumer. The country accounts for one third of the total demand. Experts estimate this will not change soon because China produces the most accumulators, batteries, glass, lubricants, air conditioning units and synthetic rubber by far. This stimulates the immense lithium consumption of the country. According to expectations China will have the strongest yearly increase in lithium demand of

all important market participants during the coming 5 to 10 years due to an expected tripling of the quantity of rechargeable batteries. In this context, it is interesting that in China from 2014 to 2015 the number of electric and hybrid vehicles sold tripled to 171,000 (this is only one percent of all sold vehicles). Additional important suppliers of lithium-ion batteries including South Korea and Japan will also guarantee a robust increase of the lithium demand. The highlights are by far the electronic giants Sony, Panasonic, Samsung, LG and ATL in Hong Kong. India should not be underestimated. The country will advance strongly its ceramics, glass, engineering and founding industry.



(Source: Roskill Information Services Ltd.)

North America is Tesla Country

Outside Asia, North America in particular will dominate the lithium demand. Tesla Motors will above all play an important part. The company is constructing a so called "mega-factory" in Nevada.

Starting in 2017 lithium-ion cells and battery packs for up to 500,000 electric vehicles per year will be built there. Tesla Motors alone would consume just over 13 % of the annual lithium production. However, Tesla doesn't currently buy lithium

directly but lithium accumulators. In the future it could be possible that Tesla will purchase the necessary lithium from its previous cathode partner Panasonic. On the other hand, there is the possibility to buy the needed lithium hydroxide and lithium carbonate directly from the relevant producer. The company has closed relevant offtake agreements with only two lithium developers in Nevada and Mexico. These two companies (**Pure Energy Minerals** and Bacanora Minerals plus their joint venture partner Rare Earth Minerals) will most likely not start with production before 2019 and satisfy only part of Tesla's demand. This indicates that Tesla has no reliable lithium supplier between 2017 and 2019 and they still have to secure additional offtake agreements for the time afterwards to guarantee acceptable prices and to become independent from middlemen like Panasonic.

Additional mega-factories in the planning stage

Tesla is not the only lithium consumer who plans a bigger production of lithium-ion accumulators. LG Chem has already begun production for Chevy in Michigan in October 2015. Also Foxconn,

BYD (largest producer of rechargeable accumulators especially for cell phones) and Boston Power are building their own mega-factories for, among other things, so called power banks, i.e. decentralized energy storage units. Therefore the produced capacity of lithium-ion accumulators could more than triple by 2020.

Summary demand side

The demand for lithium will be defined primarily by three different parties:

1. The Asian electronic groups, which aim primarily for the mass production of powerful lithium-ion batteries and accumulators for the daily use in multimedia devices etc.
2. The car manufacturer and (initially) above all Tesla Motors which is preparing itself to become THE absolute dominant producer of electric vehicles.
3. The producer of power banks i.e. decentralized energy storage units which are used in the private and industrial sector where electricity is produced by photovoltaic cells as well as wind power stations and used for their own needs.



That's how it will look like when it will be completed: Tesla's Gigafactory will produce up to 500,000 rechargeable batteries per annum.

This constellation will increase the lithium demand by 100 % and beyond during the coming 5 years whereby the power banks will generate the biggest demand increase and could eclipse the other sectors.

Conclusion

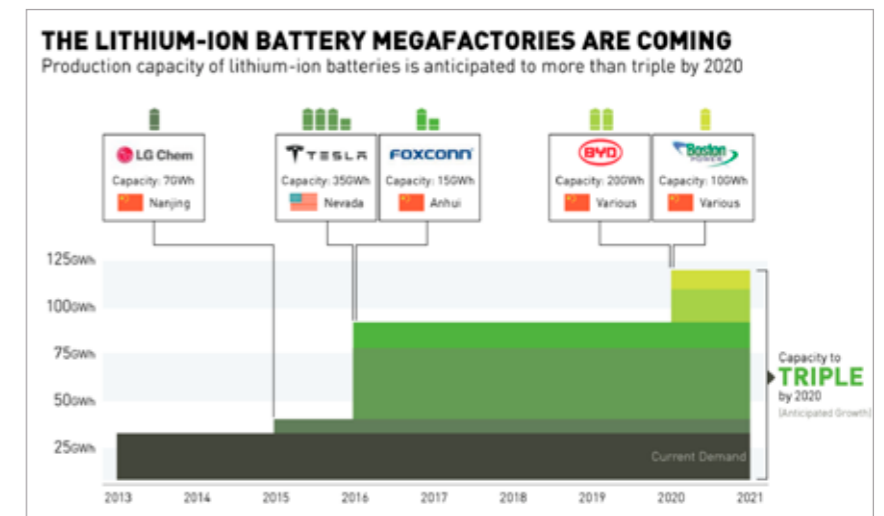
Currently, the lithium market is clearly a supply oligopoly-market. This means few suppliers face many customers. Unlike rare earth element the market power is not with one country (China) but with four suppliers who have significant projects in four countries: Australia, Argentina, Bolivia and Chile. Currently, several (smaller) development companies advance and try to bring to production good projects not only in the previous production countries but also in Canada, USA (above all in Clayton Valley a downright playground for lithium developers), Australia, Zimbabwe, Mexico, Serbia and some other countries. One reason is the rapidly growing demand which, in the course of the electro revolution, is exploding.

The low price for crude oil is playing, if at all, a minor part because lithium is used above all as a medium for energy storage and not for energy generation. A great unknown is still Tesla Motors the leading producer of electric vehicles. Their mega-factory will need large quantities of lithium carbonate and lithium hydroxide but the company actually has no reliable lithium source for the period from 2017 to 2019. During this period Tesla has to rely on the partner and cathode supplier Panasonic. Starting in 2020 Tesla Motor's hunger for lithium could lead to additional demand and higher prices.

On an overall basis a supply deficit is emerging on the market because the demand increase will exceed the supply expansion in the future. Because there is no end of the demand increase in sight past 2025 and there are no big noteworthy lithium production projects in the pipeline,

that condition could last for a foreseeable time.

In addition, the few suppliers have a significant market power but are possibly not interested in a lower market price. This is the reason why smaller lithium companies will have very good development and production opportunities. Besides, from a quantitative point lithium ac-



(Source: Benchmark Mineral Intelligence / www.visualcapitalist.com)

counts for a significant part of a battery, but it accounts for only roughly 4-5 % of the costs of a battery. Hence the lithium price is insignificant for the production of lithium ion batteries and could be kept at an economic level for the lithium producer. The lithium companies whose projects are at a very advanced stage should see the biggest upward price potential in the coming months and possibly consolidation that is via takeover scenarios.

Interview with Tobias Tretter – Manager of Structured Solutions Lithium Index Strategic Fund



Tobias Tretter has been active in the mining sector since 2000. During his activity at Dr. Jens Ehrhard Wealth Management he supported the management of the DJE Gold & Resources Fund, which was awarded as the best performing commodity fund of 2003. From 2005 to 2008 he co-managed the Stabilitas Funds, which have been awarded as the "best performing Gold Fund" in 2006. Since 2009, Mr. Tretter acts as CEO and responsible person for the Index- and Portfolio-Managements of Commodity Capital AG. He is managing the Commodity Capital Global Mining Fund, the Structured Solutions Lithium Index Strategic Fund and the Managed Accounts of Commodity Capital. Tobias Tretter holds a business diploma degree from the University of Bayreuth.

Mr. Tretter you are manager of Structured Solutions Lithium Index Strategic Fund. Which strategies do you follow and what does the fund represent?

The fund was established in 2010 because we were aware of the potential for the resource Lithium at that time. We couldn't realize our original idea of a physical backed ETF of the metal Lithium because of its specific properties; it is indelible and cannot be stored in a safe: The only interesting possibility for our clients was a public fund which invests directly into the 25 biggest producers and developers of lithium deposits. We don't want to invest directly into the battery producers, because in contrast to the lithium producers they will not profit from the higher lithium prices in the long term, but rather have to pay these. Our investors should have the possibility to benefit directly from the coming boom for lithium batteries brought on by the demand for lithium, based on electric cars or powerwalls, without the risk of single investments. With the fund, we have created for investors a possibility for diversified investments in the lithium sector.

Is such a fund which is focussed at a niche resource not too specialized and thereby too risky?

Yes and no. The fund is very specialized and the success of the lithium sector put us right. The risk as well potential opportunities in other sectors are the reason we are restructuring and diversifying the fund. In the future, the fund will not only invest in lithium but also in companies from other sectors which profit from the lithium battery boom. Particularly the resources graphite, cobalt or magnesium are very interesting. For example, cobalt used as cathode has some superior properties like a faster recharging of batteries. But cobalt is not fully used by the

battery producers because the biggest part of the global production comes from the Congo and is thereby not a reliable source of this metal. Also the mining conditions in the Congo are very questionable and not only investors but buyers as well avoid this production. The demand for reliable sources and ethically and environmentally clean mined cobalt is enormous and will be another trend in the years to come. We are diversifying the fund a bit more and will diversify even more in the future. Regarding the risks we think that it is not too risky. The fund is a niche product and thought as an addition in a broad diversified portfolio. If an investor believes in the success of electric cars and powerwalls he has the choice to buy shares of one or two companies in the sector or a specialized fund. Due to the specifications of the sector the investors should prefer funds or certificates to direct investments in order to minimize the risk of a single stock.

In the past 10 years we have observed once in a while the formation of bubbles in "trend resources". The uranium bubble and the hype around the rare earth elements, graphite etc. comes to mind. Why should it be different for lithium?

With all the three mentioned "hypes", each one was a hype among the investors which was not based on the rising demand from the industry. Yes, there was a rising demand for uranium until the terrible events in Fukushima. Since then the operators of nuclear power plants in Japan are more the sellers than the buyers and are the main reason for the falling uranium prices. There was never a bottleneck in the production of rare earth elements but instead it was during processing in the Chinese refineries. And with graphite the problem is that the demand rises parallel to the demand for lithium but it is possible to produce synthetic

graphite but with lower quality. It is also difficult for experts to estimate which resource project has the right quality for the end consumer that is the battery producer.

With lithium the fundamental situation is totally different. I believe that Goldman Sachs gave the best answer in their study at the beginning of the year with the headline "is lithium the new gasoline". I would not go that far and compare lithium with the situation of the oil in the 1970s, but one thing is for sure; the switch to electric cars and regenerative energy sources and a decentralized storage of energy is with the currently available technology not possible without lithium ion batteries. This is very well recognized by the huge investments from the industry in new battery factories which will all need lithium. From a quantitative point lithium accounts for a significant part of a battery, but accounts for only roughly 4-5 % of the costs of a battery. Hence the lithium price is insignificant for the production of lithium ion batteries. The only important point is the sufficient supply of lithium. In view of the massive expansion of the battery production there are reasons for questioning if it will be possible to satisfy enough of the demand with new production in the coming years.

What do you look for specifically in your evaluation of a lithium company or a lithium resource?

In a lithium company like any other company the investor should look at management first. What is their track record, how much has management personally invested and which investors are supporting the company. Many of the "new" lithium exploration companies that in the past years were active during each of the above-mentioned "hypes" try their luck with a new project now in the lithium sector. These will continue to be unsuccessful

and disappear as they have done before. It is important to look carefully at the relevant quality of the management.

Regarding the projects, you have to distinguish primarily between brine projects - the extraction from dried-out salt lakes - and hard rock projects - the conventional processing of hard rock. Besides the grades, profitability etc. it is of vital importance for the investor to look particularly at the ratio of magnesium to lithium. A too high amount of magnesium renders it unprofitable or impossible to leach out the lithium carbonate from the salt. A good example is one of the biggest lithium resources: the Salar de Uyuni which contains approximately 50 to 70 % (!) of the global lithium resources, but due to the ratio of above 20:1 of magnesium to lithium and the lower evaporation rate a production is not profitable with the recent extraction methods. Furthermore, environmental aspects have to be respected. Especially for the extraction from salt lakes some conditions have to be considered. For the conventional production by evaporation in big ponds a lot of land is necessary and the operator has to ensure that there is not too much damage to the natural environment.

Most of these projects often fail because Mother Nature did not close off completely the basin that the lithium is extracted from and the water that is pumped into the ground follows the easiest way out of the basin and does not stay there to absorb the lithium and to be pumped back up to the surface as brine. Just look on Google Maps at the geography of the project and decide for yourself if the basin seems closed or not for you.

Besides the grades, profitability etc. it is of vital importance for the investor to look particularly at the ratio of magnesium to lithium.

Previous main mining regions are South America and Australia with smaller operations in China and the USA. Where do you think the future main mining regions for lithium will be?

Currently the biggest part of the lithium production comes from the tri-border region Chile, Argentina and Bolivia. Because of the low lithium price the production from the salt lakes is cheaper and thereby profitable. There are lithium occurrences around the world and we will see a variety of new lithium production sites in the future. Currently the focus of the industry is on the Clayton Valley near Las Vegas in the USA. There we have similar conditions like in South America and the new mega-factory of Tesla is not far in Reno. Besides the USA we also observe projects and companies in Canada as well as Europe, for example in Portugal or Rio Tinto's project in Serbia. In general I believe that the number of hard rock projects will increase due to the higher lithium prices and worldwide production will further diversify, but the main mining regions will still be South America and Australia.

How important are the planned mega-factories for the production of lithium ion batteries for the lithium market in the future?

The mega-factories are the key or the engine of the lithium demand and play an essential part for the demand of lithium. Tesla's mega-factory alone will double the global production of lithium batteries. Not only Tesla but BYD, Foxconn, LG or Daimler are also building new mega-factories and investing several billion US\$ in the upgrading/installation of new battery productions, so that by 2020 the production will triple to 87 GWh. But this is not only for the production of batteries for future electric cars but also for the decent-

ralized storage of regenerative energies using batteries as well.

As mentioned before the lithium price plays a minor role in the costs of the battery production so that primarily the availability of lithium is the important factor and to a lesser extent its price. For sure the mega-factories don't want to stop their production because of the temporary lack of lithium. Currently the lithium market is a bit of a race against time. Certainly there are enough lithium resources worldwide. The massive increase of the production of lithium batteries and with it the demand for lithium in the coming years could cause problems for the mining companies which didn't invest in the past years due to the general crisis in the mining sector. In the coming years the question for the lithium sector will not be: "How high is the lithium price" but "where do I source my lithium and how is the availability".

Mr. Tretter let us get back to your fund. Which are the biggest single positions in your fund and why?

Generally we closely follow – also with our global mining fund – the life cycle of the resource companies and see by far the best chance/risk ratio for junior companies which just have started production or will start the production in the near future. These are the companies which have already successfully overcome the biggest risks and are potential takeover targets for major mining companies. Therefore, besides the established big producers, particularly Orocobre and Nemaska Lithium as coming producers are represented. While Orocobre is close to the start of production at the Olaroz brine project in Argentina, Nemaska owns one of the highest grade and biggest hard rock projects worldwide in the politically stable province of Quebec. Besides these

two future producers, lithium companies from the Clayton Valley in Nevada in particular drew attention in the past months. As already mentioned the doubling of the battery production due to Tesla's mega-factory plays a significant part. And what could be more obvious that Tesla gets the necessary lithium from the immediate neighbourhood in the Clayton Valley. Currently there is Albemarle, the only lithium producer in North America and the supply and legal security will play an important part at Tesla where they will source the necessary lithium. Pure Energy is for sure in the pole position. They are the most advanced and have already a purchase agreement with Tesla. Also promising is the lithium explorer Lithium X. Besides projects in the Clayton Valley they are also active in Argentina and have with Paul Matysek and Frank Giustra an exceptional management team with an outstanding track record.

Which companies with an actual low weighting in your fund or that are not represented in your fund do you currently have on your radar screen and why?

Every single day there are new companies which want to benefit from the outstanding perspectives in the lithium sector. However, I expect a stronger consolidation of the lithium exploration companies in the next 24 months. This will ensure that the "promotion" companies disappear and the investors will focus once again on the companies with the best management teams and the best projects. One of the "new" companies where we see a significant potential is Millennial Lithium. The company has quietly acquired a very prospective lithium brine project in the Puna Region where the projects of Orocobre, Galaxy and Lithium X are located. Furthermore, the company could hire Ian Scarr an absolute expert who was responsible for multiple

discoveries for Rio Tinto worldwide including the Jadar lithium project in Serbia, one of the most prospective lithium occurrences in the world.

Mr. Tretter a last question and I would ask you for a brief answer: You have mentioned your selection of criteria is among other things management and the magnesium/lithium ratio. Which three purely economic or project specific criteria should interested lithium investors keep in mind?

As the saying goes among geologists: "grade is king"! The higher grade a project, not only is the return increasing there is also more scope for solving potential problems or cost increases. But you have to bear in mind that in general brines have definite lower grades than hard rock projects and they are easier and cheaper to mine.

Also pay attention to the infrastructure. Water and electricity are key factors which can lead to success or ruin of a project. Pay attention to the availability and the respective costs.

I should mention as last point that political framework like the support of the local residents is an important investment criterion and is frequently responsible for the failure of a project. In fact most of the investors can not visit the projects themselves but in most cases it is already very helpful to read the local newspapers online.



Interview with Tobias Tretter on Commodity-TV:
<http://bit.ly/2cmzn5D>

The higher grade a project, not only is the return increasing there is also more scope for solving potential problems or cost increases.

Millennial Lithium

With infrastructural advantages on the fast lane to become a lithium producer



Graham Harris, Chairman

Millennial Lithium is a Canadian development company focused on lithium projects in Argentina. The company has a better connection to the existing infrastructure than most competitors and aims to start production within three years.

Pastos Grandes Lithium Project – location and acquisition

The company's flagship project is Pastos Grandes a lithium project in Argentina's northwestern province of Salta. Pastos Grandes is a salt lake which is part of a row of similar lakes which stretch like a string of pearls across the provinces Salta and Catamarca. The project is located at a distance of approximately 50 – 60 km from the lithium projects of Lithium X, Lithium Americas, Galaxy Resources and Orocobre.

Overall the Pastos Grandes project consists of three different parts:

- ▶ In the middle of September 2016 Millennial Lithium acquired 100 % of an exploration licence covering 1,219 hectares from the private lessor Jorge Moreno. As consideration for the project area covering 1,219 hectares, Millennial Lithium will pay in total US\$ 2.2 million, issue 500,000 of its shares plus additional shares worth US\$ 500,000 payable and issuable in increments. In addition, Millennial Lithium has to spend US\$ 1.6 million for exploration activities within one year. Furthermore the project is subject to a 1.5% Net Smelter Royalty which Millennial Lithium can buy back for US\$ 3 million.
- ▶ In the meantime an application was granted to a state-owned mining company for additional 2,233 hectares of land.

- ▶ Applications for the use of additional 4,236 hectares were filed with the provincial government in Salta. This area has not seen any exploration activities to this date.

Pastos Grandes Lithium Project – well connected to the existing infrastructure

The biggest advantage is the relative proximity to the province capital of Salta. While the projects of most competitors are located in the middle of nowhere, Millennial Lithium has with its project a direct connection to the City of Salta with its 350,000 inhabitants located some 235 km away. Salta is the capital of the province of the same name in Argentina's northwest. There is also a 490 km road connection to the Chilean port city of Antofagasta, which not only has a deep water harbour but is also one of the leading mining cities in South America. Situated some 12 km north of the project area the small town of Los Pastos Grandes provides freshwater supply as well as a diesel generated 220 volt power supply. A 600 megawatt, 375 kV power line connecting Salta with Mejillones in Chile runs 53 km north of the project area. Some 26 km northwest of the project runs a natural gas pipeline.

Pastos Grandes Lithium Project – previous exploration activities

In the years 2011 and 2012, the previous leaseholder Eramine Sudamerica SA invested over US\$ 4 million in the exploration on the 1,221 hectare part of the overall project. Historic sampling showed primarily very high grade lithium of 400 to 600 milligram per litre (mg/l) with some samples containing up to 3,000 mg/l. Consequently, Eramine Sudamerica SA drilled six exploration holes in total to de-

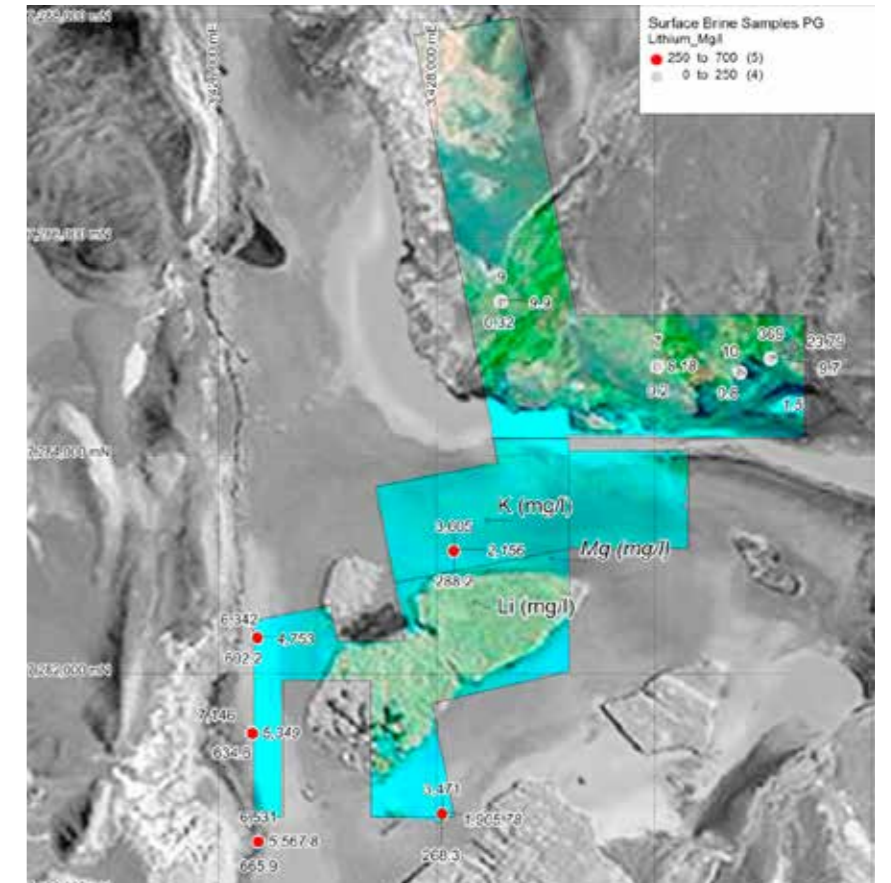
termine the extension of the brine as well as the aquiferous layer. In this context pumping tests were performed. In addition geophysical studies and acoustic tests were developed. Also evaporation tests in a pilot plant were carried out on site. Eramine Sudamerica SA analyzed in three of its own brine samples lithium grades of 602.2 – 665.9 mg/l and 6,342 – 7,146 mg/l potash.

Pastos Grandes Lithium Project – further exploration activities, production planning

Millennial Lithium is currently working on its own NI 43-101 resource estimate. The completion is expected by the end of September 2016. The company has budgeted US\$ 3 million for its initial exploration program. The start of the program will be in fall 2016. The management under President & CEO Kyle Stevenson anticipates the production to begin in approximately three years and an extraction of 10,000 to 15,000 tons of lithium per year due to the good infrastructural location and the simplicity of the potential mining operation.

Cauchari East Lithium Project

At the end of September 2016 Millennial Lithium announced that the company will acquire an additional lithium project called Cauchari East. Cauchari East covers an area of 2,990 hectares on the eastern side of the Cauchari-Olaroz Salar, adjacent to Orocobre's producing Salar de Olaroz and Lithium Americas Corp.'s advanced stage Cauchari-Olaroz project. Millennial's new project displays geological characteristics common with the producing and respectively well advanced projects of the neighboring competitors and shows an especially high potential in the deeper salar layers. Surveys comple-



Properties optioned by Millennia at Salar de Pastos Grandes.

ted by Orocobre on their project indicate that the brine-hosting aquifers extend into the eastern part of the salar and also beneath the Cauchari East Project. Pending approvals, the Company will start with exploration activities as fast as possible in order to make a quick assessment of resources.

To acquire a 100% interest in Cauchari East the company has to pay CA\$ 2 million in cash and to issue its shares worth CA\$ 2.5 million to the previous lessor. In addition, Millennial Lithium must pay CA\$ 4 million for exploration expenditures within three years.



Lincoln Lithium Project in Nevada

In addition to Pastos Grandes and Cauchari East, Millennial Lithium owns a second lithium project called Lincoln in Big Smoky Valley, Nevada. The licences are in immediate vicinity to claims of Ultra Lithium Inc. and Avarone Metals Inc. In June 2016 on Avarone Metals Inc.'s Moab lithium project located west and adjacent to Lincoln Avarone could not only confirm the presence of lithium close to the surface but also boron and potash. Also, in June 2016 Ultra Lithium could prove the presence of two potential lithium bearing brine targets at their South Big Smoky Valley brine lithium project south of Millennials licences. In line with rock sampling and auger drill tests, the company found up to 53mg/kg lithium, 270mg/kg boron and 6,100mg/kg potash.

Top management for a rapid project development

A top management team was formed for the rapid advancement of some projects. Chairman Graham Harris was over five

years the Senior Vice President and Director of the Canadian investment house Canaccord. He raised over 250 million dollars for public and private companies. Harris is also the owner of Sunrise Drilling which is a key advantage for the exploration.

President & Director Kyle Stevenson is, among other things, founder of High North Resources Ltd. an oil and gas producer in Alberta, Canada. In addition, he founded Waterproof Studios, an animation and visual effects studio that cooperates with leading movie companies. He is also the founder of RuralCom Networks, a leading Canadian telecom service provider.

Director Brent Butler was, among other things, Managing Director at Kinross Gold Australia Pty Ltd.

Director Andrew Bowering is co-founder of Sunrise Drilling and generated over 100 million dollars for several exploration and development companies. He also supervised several big acquisition programs.

At the end of July 2016 Millennial Lithium was able to hire Iain Scarr as VP of Exploration & Development. Among other things, Scarr worked at Rio Tinto for 29 years where he played an important role in many discoveries in North and South America as well in Africa. He was also responsible for the commercial justification



of the Jadar lithium-boron project in Serbia. At Lithium One he was responsible to guide the Sal de Vida lithium brine project in Argentina through the feasibility phase with Galaxy Resources. At Galaxy he advanced the Rincon project to the definitive feasibility study. Scarr is a real asset for Millennial. He has an immense wealth of experience and an extensive network in the lithium sector.

Summary: at full throttle towards production

Even though there is a long way to the anticipated production start it can be seen that the management under President & CEO Kyle Stevenson and Chairman Graham Harris has kicked into high gear. Only two to three months maximum after the new start (since renaming from Redhill Resources to Millennial Lithium) the first significant resource estimate will be available. For the first exploration campaign at Pastos Grandes US\$ 3 million are budgeted! There is certainly the potential for a high grade lithium resource in Argentina. The good infrastructure in the area (in contrast to the many competitors) could accelerate a potential production. With the help of their first own exploration results and a resource estimate, Millennial Lithium's market value should rise sharply.

Factsheet

ISIN: CA60040W1059
WKN: A2AMUE
FRA: A3N1
OTCQX: ATWGF
TSXV: ML

Shares issued: 27.3 million
Options: 1.0 million
Warrants: 11.8 million
Fully diluted: 40.1 million

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Chairman:
Graham Harris



(Source: BigCharts)

