

Salar de Maricunga: Project Review

Executive Summary

June 2011

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1. Introduction

Li3 Energy (hereinafter “the Company”) asked signumBOX to perform a report with the objective of bringing an independent opinion about the Maricunga Lithium Project that is being evaluated by the Company at the Salar de Maricunga in the north of Chile.

The report will address the following aspects:

- Review of Maricunga’s geological characteristics.
- Comparison between Maricunga Lithium Project and other Projects currently being developed in Argentina and Chile.
- Re-estimation of the signumBOX indexes for the Maricunga Lithium project.
- Review of Li3 Energy’s position in terms of its ability to develop the project.
- Development of a positioning analysis of Li3 with the Maricunga project with other industry lithium brine projects.
- According to the positioning analysis, identification of the main weaknesses and strengths of the project.
- Development of an action plan to address weaknesses.
- Estimate a ranking according to the signumbox indexes if the action plan is completed.
- Overview of the production potential of the Salar de Maricunga

2. About Salar de Maricunga: History and geological characteristics

The Salar de Maricunga is located 160 kilometers northeast of Copiapo, the Capital of the III Region in Chile, at 3,756 meters above sea level. The Salar was originated by the intersection of the mountains Claudio Gay and Domeyko and is part of the National Park “Nevado Tres Cruces”.

In 1980, the Chilean Agency of Development, CORFO, performed a sampling program at the Salar de Maricunga, and concluded mainly that exploitation at Maricunga is feasible since lithium and potassium concentrations were interesting.

Preliminary resources were estimated at 1.7 million of metric tons (MT) of potassium and 224,000 MT of lithium as Li. According to that study, the main advantages that the Salar de Maricunga has over Atacama were that Salar de Maricunga were closer to the Copiapo and Caldera ports and that sodium chloride and other potassium salts could be obtained as by-products.

On the other hand, the main disadvantages of Maricunga compared with Atacama were its higher altitude and its lower evaporation rate.

The Chilean Geological Service (Sernageomin) has classified the salars in Chile into three groups according to their potential in terms of lithium concentrations, extensions, and lithium to potassium ratio. This classification excludes the Salar de Atacama, which is by far the largest lithium deposit in Chile.

Salar de Maricunga is part of the first group. Other Salars included in this group are: Pedernales, La Isla and Quisquiro. According to Sernageomin, these salars have lithium concentrations that range from 423 to 1,080 mg/l of Li, cover an area of around 80 to 335 square kilometers and have lithium to potassium ratio ranging from 0.08 to 0.18. The second group includes the salars Punta Negra, Aguas Calientes (Centre), Pajonales, Aguilar, Tara, Parinas and Pujsa. These salars have lithium concentrations that range between 220 and 620 mg/l of Li; cover an area of around 18 to 250 square kilometers; and have a ratio of lithium to potassium ranging from 0.04 to 0.3. Finally, the third group defined by Sernageomin includes the Aguas Calientes (North and South) and Talar Salars. These salars present lithium concentrations that range from 205 to 290 mg/l of Li, cover an area of around 15 to 27 square kilometers and have a lithium to potassium ratio ranging from 0,03 to 0,24. More details are shown in Table 1.

Table 1: Salars in Chile

Region	Category	Salar	Lithium concentration (mg/L)	Area (km ²)	Lithium to Potassium ratio
Antofagasta	II	Aguas Calientes Centro	0.8 - 220	134	0.02 - 0.06
Atacama	III	Aguas Calientes Norte	123 - 290	15	0.17 - 0.24
Atacama	III	Aguas Calientes Sur	1.8 - 205	19	0.03 - 0.04
Atacama	II	Aguilar	257 - 337	71	0.08 - 0.09
Atacama	I	La Isla	16 - 1,080	152	0.09 - 0.10
Atacama	I	Maricunga	1 - 1,050	145	0.14 - 0.18
Antofagasta	II	Pajonales	9.3 - 350	104	0.01 - 0.04
Atacama	II	Parinas	273 - 477	40	0.06 - 0.30
Atacama	I	Pedernales	130 - 423	335	0.07 - 0.08
Atacama	II	Pujsa	2.7 - 620	18	0.07 - 0.08
Antofagasta	II	Punta Negra	0.5 - 380	250	0.02 - 0.04
Antofagasta	I	Quisquiro	2.5 - 640	80	0.14 - 0.18
Atacama	III	Talar	2.5 - 280	27	0.02 - 0.03
Atacama	II	Tara	85 - 600	48	0.09 - 0.14
Antofagasta		Atacama	150 - 8,000	3,000	0.08

Source: Sernageomin.

As from now, three sampling programs have been performed in the Salar de Maricunga: In 1980 by Corfo, in 2007 by a private company, and in early 2011 by Li3 Energy. Main results are shown in Table 2:

Table 2: Maricunga sampling programs

	Li3 Energy (2011)	Private Company (2007)	Corfo (1980)
Lithium (ppm)	752	834	700 - 1,000
Potassium (ppm)	5,455	6,600	7,000 – 17,000
Magnesium (ppm)	5,337	5,500	-
Sulfate (ppm)	380	9,600	-
Mg/Li	7.1	6.6	-
K/Li	7.3	7.9	-
Sulfate/Li	0.5	9.6	-
K/Mg	1.0	1.2	-

Sources: Li3 Energy and CORFO.

In comparison with other salar-brines in Chile, Maricunga has the highest lithium and potassium concentrations after Atacama.

Table 3 shows brine composition for different salars in the world, including Salars in China (which are mainly located in the Tibet and Qinghai Province), Salars in the US, Uyuni in Bolivia, Atacama in Chile and other salars in Argentina.

Table 3: Main Salars in the world

Deposit	Company	Country	Li concentration ppm Li	K concentrations % K	Reserves Tones Li	Mg to Li ratio
Salar de Hombre Muerto	FMC	Argentina	200 - 900	0.55% - 0.65%	750,000 – 900,000	1.37/1
Salar de Rincon	Rincon Lithium	Argentina	300 - 400	0.60% - 0.65%	1,000,000 – 1,500,000	8.6/1
Cauchari	Lithium Americas	Argentina	300 - 400	0.40% - 0.50%	900,000 – 1,000,000	2/1 - 2.5/1
Olaroz	Orocobre	Argentina	200 - 300	0.40% - 0.50%	1,000,000 – 1,200,000	2.4/1
Salar de Uyuni	Conmibol	Bolivia	300 - 600	0.70% - 0.75%	5,500,000 – 7,500,000	22/1
Salar de Atacama	SQM / Chemetall	Chile	1,000 – 1,500	1.80% - 1.90%	6,000,000 – 7,500,000	6/1 - 6.5/1
Taijanier Lake	CITIC	China	200 - 400	6.5% - 8.0%	900,000 – 1,000,000	20/1 - 22/1
Zhabuye	Tibet Zhabuye	China	450 - 600	2.0% - 3.0%	1,000,000 – 1,500,000	-
Silver Peak	Chemetall	US	100 - 300i	0.5% - 0.55%	40,000 – 60,000	1.4/1

Sources: Keith Evans, Donald Garret, CORFO, SQM, Lithium Americas and Orocobre

3. Lithium projects in the world

In signumBOX we have identified 85 lithium projects in the world that are currently being under evaluation: 51 projects that plan to produce lithium concentrate from pegmatites and 49 projects

that plan to produce lithium from salar-bearing brine deposits. The majority of the projects based in lithium brines are located in Argentina, in the US and in Chile.

In Chile six companies have interest in salar deposits, but so far none of them have asked for governmental permission.¹

Table 4: Main lithium projects from salar-bearing brines

Company	Project	Country
AmeriLithium	Paymaster Canyon	US
	Clayton Deep Project	US
	Full Monty Project	US
	Americana Property	Canada
	Lake Dumbleyung	Australia
Canasia Industries	Alberta Lithium Project	Canada
Channel Resources	Fox Creek Project	Canada
COMIBOL	Salar de Uyuni	Bolivia
Dajin Resources	Salinas Grandes / Guayatayoc	Argentina
Eramet/Bollere/Minera Santa Rita	Salt Lakes in Argentina	Argentina
First Liberty Power	Lida Valley	US
First Lithium Resources	Valleyview Lithium Project	Canada
	Teels Prospect	US
International Lithium	Mariana Project	Argentina
	Fish Lake Valley	US
	Mud Lake	US
	Sarcobatus flats	US
Li3 Energy	Maricunga	Chile
Lithium Americas	Cauchari-Olarzoz	Argentina
	Incahuasi	Argentina
	Arizaro	Argentina
	Pocitos	Argentina
Lithium Exploration Group	Valleyview Lithium Project	Canada
	Salta	Argentina
Lithium One	Sal de Vida	Argentina
Litio Mex	Litio Mex	Mexico
Lomiko Metals	Salar de Aguas Calientes	Chile
Mammoth Energy Group	Salar de Maricunga	Chile
	Salar de Pujsa	Chile
Mesa Uranium	Green Energy Lithium Project	US
Minera Copiapó	Minera Copiapó	Chile
New World Resources	Salar de Pastos Grandes	Bolivia
Orocobre	Olaroz Lithium Project	Argentina
	Salinas Grandes	Argentina
	Guayatoyoc	Argentina
Panamerican Lithium	Cierro Prieto	Mexico
	Various Salars	Chi
Renholn Resources	Various Salars	Argentina
Rodinia Minerals	Clayton Valley	US
	Salar de Diablillos	Argentina
	Salinas Grandes	Argentina
	Salar de Centenario	Argentina
	Salar de Ratones	Argentina
Salares Lithium	Salares 7	Chile
Sentient Group	Rincón Lithium	Argentina
Ultra Lithium Corporation	South Big Smokey	US

¹ According to the available public information as from May 15th, 2011.

	Berland Lithium project	US
West Star Resources	Silver Creek Property	US
	Simonette Property	US

Besides Li3 Energy, five companies have interest in developing lithium projects in Chile based in Salar-bearing brines: Lomiko Metals, Panamerican Lithium, Salares Lithium, Minera Copiapó and Mammoth Energy.

- Lomiko Metals owns eight of the nine claims of the Salar de Aguas Calientes (one claim is owned by SQM).
- Panamerican Lithium has rights in 9 salars in Chile (also in Salar de Maricunga) and is currently evaluating the Laguna Verde project.
- Salares Lithium is evaluating the Salares 7 projects, which involves 7 different salars in the north of Chile. Salares Lithium merged its assets last year with Talison Lithium, Australian lithium concentrates producer, for the development of the project. The Company recently announced positive drilling results in terms of lithium concentrations at the Salar de la Isla and Salar de Las Parinas in the north of Chile.
- Minera Copiapó has some claims in the northwest part of the Salar de Atacama. This Company is owned by Francisco Javier Errázuriz, a Chilean entrepreneur that also owns Cosayach, a Chilean company that produces iodine and nitrates from the caliche deposits in the north of Chile. Errázuriz would be interested in extracting potassium – besides lithium- from the Salar in order to produce potassium nitrate.
- Mammoth Energy Inc. has announced its interest to invest also in the Salar de Maricunga and recently announced its interest in evaluate the Salar de Pujsa, also in the north of Chile.

4. About the Maricunga Lithium Project

On December 2010, Li3 Energy signed two non-binding exclusive letters of intent with a group of private companies for the acquisition of 60% of the companies, which collectively own the Maricunga project in the north of Chile. This property comprised six concessions and covers an area of 1,438 hectares in the northeast part of the Salar.

In early May 2011, the Company signed a Memorandum of Understanding (MoU) with Posco, a Korean steel manufacturer for the jointly development of the project and also for a offtake agreement. According to Li3's press release, the MoU includes (among other things):

- An agreement to explore and evaluate a joint business opportunity utilizing brine, including but not limited to the extraction of lithium and other useful resources from brine;
- The evaluation of establishing a pilot plant in Korea and or in Chile, in which POSCO may invest capital in exchange for equity in Li3;
- Subject to the results of the Pilot Plant evaluation, establishment of a full-scale commercial plant to produce lithium carbonate products;
- Li3 has granted to POSCO an option exercisable until June 30th, 2011 to purchase for \$0.27 per unit, up to \$25 million dollars of units of Li3's restricted securities, with each unit consisting of one share of common stock and a three-year warrant to purchase one-half of one share of common stock for \$0.40 per whole share.

In late May 2011, the Company announced that it had closed the announced acquisition of a 60% ownership in a group of six private companies that collectively own the Maricunga Project in northern Chile.

There are other three companies interested on the Salar de Maricunga:

1. Panamerican Lithium: On Feb. 2011 the Company entered into an agreement with Sociedad Garesté for the acquisition of five mineral concessions at Maricunga, which encompass 1,200 hectares. Both companies also signed a Letter of Intent that considers joint venture agreements at the Salar de Maricunga and also at the Llanta aquifer project. The closing of the agreements is subject to the results of the due diligence and subject to regulatory approval.
2. Mammoth Energy Group: In March 2011 the Company signed a Letter of Intent with Salt Gold Inter Chile Limitada, a Chilean Company that owns concessions at the Salar de Maricunga encompassing 12,500 hectares.
3. Salares Lithium / Talison: Salares Lithium is studying a project named "Salares 7" in the north of Chile, and has expressed its intention to also invest in the Salar de Maricunga. There is no more information available.

It is important to comment that in Chile current regulation does not allow the exploitation of lithium for new companies, since it is considered as a strategic mineral. It is highly likely that this situation will change in the future; the Chilean government has expressed its intention to allow to newcomers to exploit lithium in other Salars besides Atacama.

5. Comparison between the Maricunga project and other projects situated on salar-brine deposits

In order to compare Li3's project in Maricunga with the rest of the projects that are currently being developed, it is necessary to have an objective accurate evaluation of the rest of the projects/deposits.

For that purpose we have developed the signumPerformance Index (SPI) that allow us to rank the projects and compare in an objective way. The SPI has been developed according to the DEA methodology (Data Envelopment Analysis), which is a linear programming methodology that measures the efficiency of multiple – decision units (in this case projects).

The SPI is composed by two sub-indices: a General Index and a Geological Index.

General Index

The General Index is built for every lithium brine project with the objective to measure some basic characteristics of the project. It is a weighted average for some parameters, which are evaluated with grades that range from 1 to 5 (being 1 the lowest qualification and 5 the highest).

The parameters considered in this index are: Property of the project, percentage of ownership, project stage, environmental and other permits, political risks of the country, infraestructure, off take agreements, among others.

The General Index for Li3 Energy's Maricunga is projected at 3.23. More details are shown in Table 5:

Table 5: Maricunga project General Index

Parameter	Evaluation	Grade
Property of the project	Yes	5.0
% of ownership	60%	4.0
Studies	NI 43-101 (initial results reported)	3.0
Environmental permits	No	0.0
Other permits	No	0.0
Political risks	Low	5.0
Infraestructure	Yes (electricity/water/international road)	5.0
Other products	Not yet (Iodine/nitrates potentially)	2.5
Off-take agreements	Yes (Posco)	5.0
Stage of development	Exploration and sampling	2.0
General Index	-	3.23

Source: signumBOX estimates.

Geophysical Index

The Geophysical Index was built for each project with the objective to measure the specific characteristics of the deposit. This index is also a weighted average of parameters, which are also evaluated with grades that range from 1 to 5. The parameters considered in this index are location of the project, surface, lithium concentrations, amount of resources, magnesium to lithium ratio, among others.

The Geophysical Index for Li3 Energy’s Maricunga project is equal to 3.60. More details are shown in Table 6:

Table 6: Maricunga project Geophysical Index

Parameter	Evaluation	Grade
Location	Chile - III Region	5.0
Area	5,000 - 9,999 hectares	4.0
Type of deposit	Salar	5.0
Li concentration	701 - 900 ppm	3.5
Li concentration (verification)	Initial sampling	3.0
Resources (MT LCE)	1,000,000 – 1,500,000	4.0
Mg/Li ratio	7.1	2.0
Co-products	Yes (potassium)	5.0
GEOPHYSICAL INDEX	-	3.60

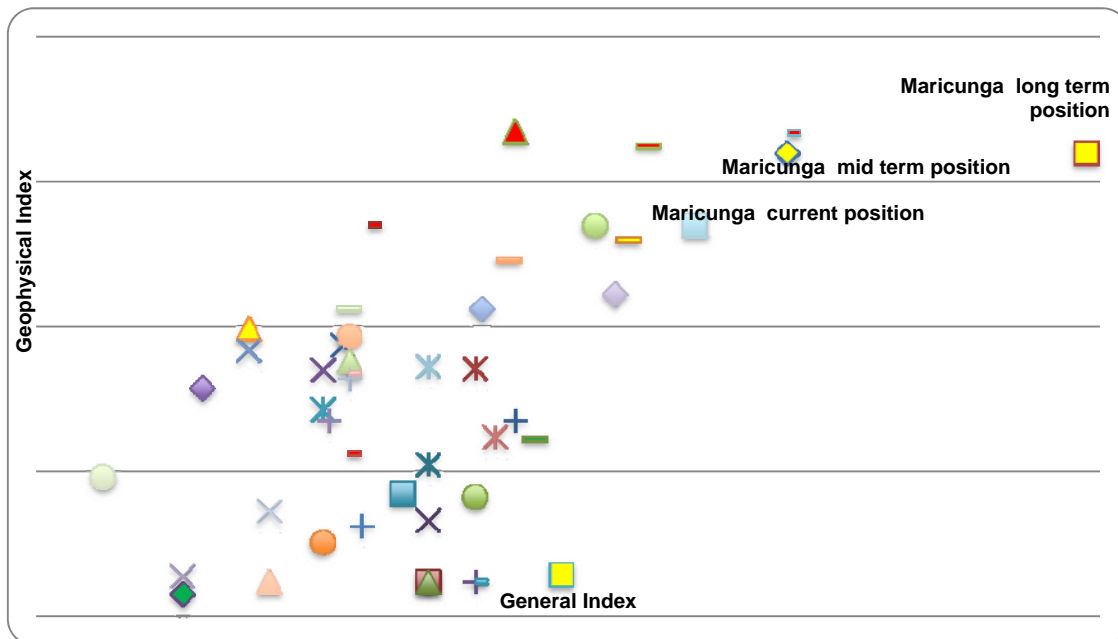
Source: signumBOX estimates.

We did the same exercise for the rest of the deposits being developed listed in Table 4.

Figure 2 shows both indexes calculated for all of the projects shown in Table 5: main projects in Chile are in yellow, main projects in Argentina in red and projects in Bolivia in green.

Although Li3 Energy has not the permit to exploit lithium in the Salar de Maricunga, its project has a General Index slightly higher than the average, and moreover, its Geophysical Index is 50% higher than the average. That means that the Company has the potential to improve its performance as they progress in the project and have obtained the relevant permits.

Fig. 1: Lithium projects based on salar-bearing brines – General and Geophysical indexes



Source: signumBOX estimates.

As it can be seen, projects in Argentina currently have higher performance than Li3's project in Maricunga. Main advantages that these projects have over Maricunga are:

- In Argentina lithium exploitation is allowed
- These projects are in a more advanced stage of development: Lithium Americas and Orocobre have released their Preliminary Economic Assessments reports and Lithium One has started production at its pilot plant
- Most of these Companies have off take agreements with final-direct lithium users, such as Toyota and Mitsubishi

Nevertheless, Argentinian brine deposits have lower lithium and potassium concentrations. Regarding the other projects in Chile, the most important advantage that they have over Maricunga are the agreements that they have signed with international companies.

But, all of them (except Minera Copiapo) have lower lithium and potassium concentrations. After Atacama, Maricunga is the second lithium deposit in Chile in terms of its quality (For more details see Table 8 of the full report).

Since Maricunga’s lithium project is in an early stage of development, and is based on the second best lithium deposit in Chile, it has further space to improve in both indexes.

We have estimated the general and geophysical indexes considering two potential situations: a mid-term situation and a long-term situation.

- A mid term situation considers the following developments:
 - ✓ Li3 Energy would complete its prefeasibility study; and
 - ✓ Li3 Energy would confirm lithium and potassium concentrations at the Salar de Maricunga
- Besides the steps that the Company would might reach in a mid-term situation, a long-term situation considers even further developments:
 - ✓ Li3 Energy would obtain operating permits from the government
 - ✓ Li3 Energy would obtain environmental approval
 - ✓ Li3 Energy would start the construction of a pilot plant

Table 8 shows both indexes estimated for the situations explained above. Both situations are also shown in figure 1.

Table 8: General and Geophysical indexes for Maricunga’s project

	Index	
	General	Geophysical
Current situation	3.23	3.60
Mid-term potential	3.83	4.20
Long-term potential	4.95	4.20

Source: signumBOX estimates.

We believe that in a mid term situation Li3 Energy would improve its knowledge of the Salar and also would progress in the development of the project, so with these conditions it would be possible for the Company to improve its position in both indexes.

Nevertheless, since geological conditions at the Salar de Maricunga are given, it is difficult to improve even further in the geophysical index in a long-term perspective. But, if the Company obtains the relevant permits for the operation of the Salar and for the extraction of lithium, if the Company signs off take agreements and build a pilot plant, it might achieve a qualification close to 5 (five) in the general Index, which is the highest qualification for a project.

As we commented above, the SPI was estimated according to the DEA methodology with the General and Geophysical indexes shown above for the current, mid term and long term situations for the Maricunga lithium project being developed by Li3 Energy.

Current situation

Given the general and geophysical indexes estimated for the current situation of Li3 at Maricunga (3.23 and 3.60, respectively), the signumPerformance Index (SPI) estimated is 72%.

That means if we consider an “optimal” project with a SPI of 100%, the Maricunga lithium project is 28% further from that project.

It is important to stress that this is a ranking that compares the projects in a relative way.

Mid-term position

If Li3 Energy makes progress with the project and reaches the mid-term potential described above, the SPI would then be equal to 84%.

It is important to comment that a mid term situation considers progress in both general and geophysical indexes.

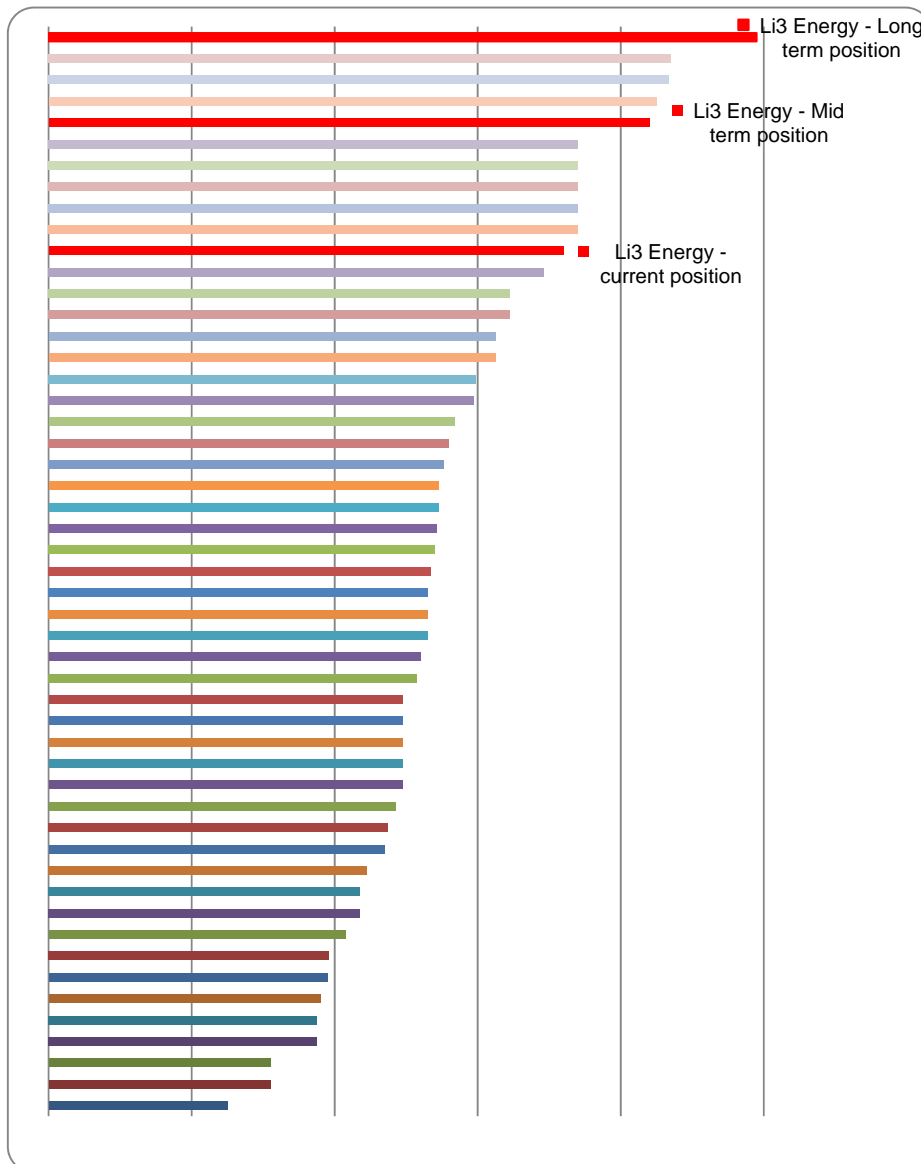
Long-term position

If the Company progresses even further and obtains the permits the SPI might reach 99%.

It is also important to remind that in a long term position the company can only make progress with the development of the project, because the geophysical index cannot be improved further since the geological conditions of the deposit are given. The Company makes only progress with its knowledge of the deposit and the accuracy of the data, but we assume that this progress can be achieved by the company in a medium term situation.

As it can be seen the Maricunga Lithium project **has the potential** to become number 1 in the ranking of lithium projects based in salar-bearing brine deposits. It is important to comment that this ranking is performed with all of the current-known information available as for May 31st, 2011. Since new information is available and since the companies make progress with their projects, the general and geophysical indexes change, changing as well the correspondent SPI.

Fig 2: Ranking of lithium projects (based in salar-bearing brines) according to the SPI



6. Overview of the production potential of the Salar de Maricunga

The objective of this section is to give a preliminary assessment of the production potential of brines of the Salar de Maricunga, which are based on the brine compositions provided by Li3 Energy.

The brine used in this process contains little boron, which reduces processing complexity and may reduce treatment costs.

The final brine composition appears to be suitable and used as raw material for the production of lithium carbonate. Nevertheless, its calcium content is high, which will affect the consumption of sodium carbonate used in the lithium carbonate plant.

Potassium pond yield is about 77% and assumes the use of potassium carnallite with an 80% recovery yield. Lithium pond yield is about 60% and assumes that 80% of lithium in solid phases is recovered.

The brine has a relatively low sulfate content, which results in high lithium yield. Other operations shows losses due to the precipitation of unrecoverable lithium sulfate salts. In some cases these losses are prevented, for example, with the addition of calcium oxide or calcium chloride to the brines.

Although brines from the Salar de Maricunga seem to be suitable for the production of lithium carbonate, the process may be improved if the calcium content of the brine is reduced. The raw brine has a high content of calcium, which will result in a high content of calcium in the concentrated brine fed to a lithium carbonate plant. This is undesirable, because calcium will consume carbonate intended for lithium carbonate production, resulting in higher consumption and a higher cost of sodium carbonate.

For more details see the full report.

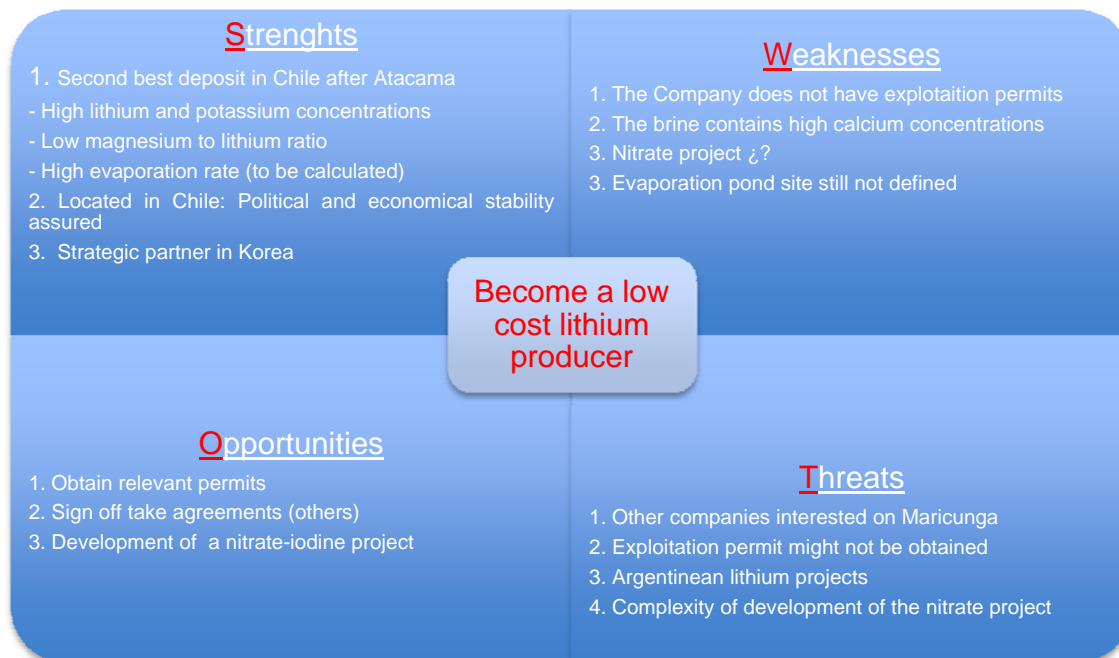
7. SWOT Analysis for Maricunga Lithium Project

With the information analyzed in the previous section, we performed a SWOT Analysis for the Maricunga lithium project, being developed by Li3 Energy.

A SWOT analysis is a methodology used by companies for their strategic planning process in order to evaluate their Strengths, Weaknesses, Opportunities and Threats. The methodology considers the identification of internal and external factors that are favorable or unfavorable to achieve the objective defined by the Company.

Li3 Energy's objective is to in develop Maricunga Lithium project and to become a low cost lithium producer. The SWOT analysis is shown in Figure 4:

Figure 3: SWOT Analysis for Maricunga Lithium Project



Regarding the strengths, there is no doubt that the main strength of the project is the deposit. After the Salar de Atacama, the Salar de Maricunga is the richest salar in Chile in terms of its lithium and potassium concentrations.

The main weakness of the Maricunga Lithium project is the fact that lithium cannot be exploited in Chile according to current mining regulation. As we commented in this report, this situation is highly likely to change soon: the government has expressed its intention to open the industry and allow newcomers to exploit lithium. The relevant issue here is that this weakness is also an opportunity to Li3 Energy.

We have identified that the lithium projects in Argentinian might be a threat to Maricunga lithium project since they are in a more advanced stage of development; actually Lithium Americas and Orocobre have both released the results of their Preliminary Economic Assessments and Lithium One has already start producing at its pilot plant. The development of the potential iodine-nitrate project also might represent a threat for Li3 Energy since the nitrate and iodine markets are complex markets, which require specific know-how in order to enter the market and to compete with current players.

8. Conclusions

Li3 Energy asked signumBOX to perform a report with its independent opinion regarding the Maricunga Lithium Project that the Company is developing in the north of Chile.

The main objective of the report was to identify the main weaknesses and strengths of the project objectively and also in a relative way compared with the rest of the projects based on salt-bearing brines that are currently being developed.

The main conclusions of the report are:

- Maricunga lithium project is located in the second best deposit in Chile after the Salar de Atacama
- Lithium and potassium concentrations are higher than other salars in Chile and also higher than most of the Argentinian Salars
- The main issue that the Company must deal with is the fact that current Chilean regulation does not allow to new companies to exploit lithium since it is considered as a strategic mineral for the country. Nevertheless, the Chilean government has expressed its intention to change this situation and to allow other companies, besides SQM and Chemetall, to extract lithium from the brines underneath Chilean Salars.
- Argentinian projects are in more advanced stage of development. We have identified this situation as a threat of the Maricunga lithium project because if this projects start to produce before Maricunga, prices would drop and profitability of Maricunga would fall.
- With the chemical composition of the brine it is possible to produce lithium carbonate, but since the high concentration of calcium more soda ash will be required, situation that will make less competitive the product.