SUPPLY SITUATION REPORT: Andalusite invests in the future

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Producers in South Africa, Peru and China have decided to expand their operations in order to meet the increasing demand as a potential alternative to Chinese refractory bauxite.

- Market stable but slow
- 28% production boost expected
- Spain targets 2012

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SUPPLY SECURITY

The estimated 430,000 tpa global andalusite market is produced by just a handful of companies in the world (see table). South Africa is the world’s largest producer of the aluminosilicate mineral, which is used as a feedstock for refractory and foundry products, with an estimated output of 295,000 tonnes in 2010.

The other main producer is France with a 80,000 tpa capacity, followed by China with 40,000 tpa. Peru is the market’s newcomer - entering the industry about two years ago - with Spain expected to follow the trend, coming on stream in 2012.

Damrec SA - subsidiary of France’s mining conglomerate Imerys SA - remains the world’s largest producer, having operations in South Africa, France, and China, in addition to an unexploited deposit in Peru.

Despite a slowdown during the financial crisis, the refractory market is picking up slowly mainly thanks to China and India which have performed relatively well despite the recession. This comes as good news for the andalusite industry, as during the last two years the refractory market has seen a shortage in the material. As a result, the main producers in South Africa, Peru and China have decided to expand their operations in order to meet the increasing demand as a potential alternative to Chinese refractory bauxite.

“The recent slowdown in the world economy appears to be over,” Carlos De Ferrari, part of the senior management of Peru’s Andalucita SA, told IM, adding that “a positive factor is the growing world industrial economies in China, Russia and India.”

Isti de Ujfalussy, president of Spain’s Picobello Andalucita SA, confirmed the trend: “The market seems to be very stable. It is now back to growth.”

Although the market is getting back to brighter days, it remains sluggish and slow; this was especially true in Q1 2011. “In the second quarter we are seeing more movement than in the first one, but it is still not rolling properly,” commented Andreas Pabst, sales and marketing director of South Africa’s Andalusite Resources (Pty) Ltd.

On one hand, the weakening dollar and euro have had a negative impact on the market, in addition to the rise in oil prices. On the other hand, there seems to be a general situation of supply saturation in some of the alumina-based refractory raw materials: “Andalusite seems to be in this group,” Pabst said, underlying that “the challenge is currently in managing the short-term outlook of the market (very little predictability) as well as keeping inflation (operating and logistics costs) under control.”

South Africa
South Africa’s andalusite production is expected to increase by about 32%, from the present 295,000 tpa to an estimated 390,000 tpa, within the next three years.

Two companies own andalusite mines in South Africa, which reports a reserve base of about 51m. tonnes of aluminosilicate (in this case, andalusite and sillimanite) ore. Imerys subsidiary Damrec produces more than 70% of the andalusite in the country.

The other major South African producer, Andalusite Resources, is a relative newcomer to the andalusite industry. It is the only alternative supplier of the South African material outside Damrec’s subsidiaries Rhino Minerals Pty Ltd and Samrec Pty.

Andalusite Resources started production in 2003 at its Maroeloesfontein mine, located in the Limpopo province about 220km north-west of Johannesburg. The company increased production by 40% in the middle of last year from 50,000 tpa (57% alumina Al$_2$O$_3$) to a present production of 70,000 tpa. The company also made some improvements on quality at the beginning of 2011, by reducing impurities in the final product.

As Pabst underlined to IM, about 70% goes into the steel industry, the remainder being fairly evenly distributed between ceramics, glass, and waste incineration. About 2% goes into aluminium. The company supplies Europe, South Africa, China and India in addition to Russia, Japan, South Korea, Taiwan and other countries in Asia and the Middle East.

The present mine life is 60 years at a production rate of 70,000 tpa but Andalusite Resources expects to increase this to a minimum of 80 years’ mine life by the end of 2011, once the company’s exploration licence has been converted into a mining right for its additional reserves.

“We are still on track to expand production to 80-100,000 tpa by end of 2012, provided the market grows along and accommodates that growth,” Pabst revealed.

Trading group Cofermin is responsible for the marketing of about 65% of Andalusite Resources’ production. The company is the agent for almost all export markets including Europe, China and India.

Andalusite Resources operates close to the Damrec-owned Thabazimbi andalusite facility. Damrec, a direct competitor of the company, has also planned to increase its output by 29% to reach a targeted 290,000 tpa within the next three years.

And Damrec has four andalusite mines in South Africa, producing about 225,000 tpa: Annesley, Havercroft and Thabazimbi in the Limpopo region owned by Damrec’s subsidiary Rhino - which is located about 30km from the Maroeloesfontein mine.

The fourth mine, Krugerpost, owned by Damrec’s other subsidiary Samrec, is located in the Mpumalanga region, near Lydenburg.

Damrec has been working on three levels to increase its production by 55,000 tpa within the next three years: debottlenecking at Thambazimbi (20,000 tpa added) and Krugerpost (10,000 tpa added) and an extension at Segorong, with Rhino having finally obtained the approval from the South African government for the exploitation of its Segorong andalusite project.

Peru

Peru entered the andalusite market almost two years ago when Andalucita SA started production at its deposit located near Paita in the north-west of the country in August 2009. Imerys owns 5% of the same deposit but has not yet put it into production.

Andalucita, which produces 15,000 tpa of andalusite at typically 59% Al$_2$O$_3$ and 0.8 % Fe$_2$O$_3$, is also on course to increase production to 55,000 tpa by mid-2012.

“There is increasing demand as the quality and reliability of our product becomes better known in the market,” Andalucita’s president executive told IM, pointing out that the deposit was “an alternative when purchasing first quality andalusite.”
“The primary challenge is to demonstrate to the world’s industrial base that the use of Paita andalusite can contribute positively to their operations. The opportunities involve the current growing world demand for top quality andalusite,” De Ferrari explained.

Spain

Spain has been looking at entering the andalusite market for a few years but the project was slowed down by permits’ acquisition and founding. However, Picobello Andalucita SL’s project seems to be back on track, expecting to get its Picobello deposit, located 15km from El Ferrol port, north-west Galicia, into production next year.

The Picobello andalusite deposit, looked at for some years by a range of players, was given a boost in 2007 when Picobello Andalucita secured initial financing for the project.

The project provides for a 65,000 tpa plant and mine life of 15 years, extracting ore to a depth of 20-40 metres. However, since 2007 little had been heard of the project’s progress, and there was speculation over the absence of further funding.

“If we can complete investment within the next 90 days [July 2011], we could be in production in mid-2012,” Isti de Ujfalussy, president of Picobello Andalucita, revealed to IM.

The Spanish company is targeting a capacity of 65,000 tpa: 50,000 tpa refractory grade and 15,000 tpa for two other applications which remain confidential, including one in the metallurgy sector.

Although the mine has a life of 15 years on 20 metres depth, Ujfalussy underlined “there is potential to extend to 60 metres: so the reality is that it could be 200 years,” he said, adding there would be no drilling in the first 15 years as it is only indicated at about 30-40 metres.

Picobello, which mainly targets European end markets, declared that the company was also in talks with Chinese investors interested in investing and getting product. “Japan and South Korea are knocking at our door too for product,” Ujfalussy added.

PRICE TRENDS

“Prices are depressed, stagnant,” Pabst from Andalusite Resources described to IM, adding that “they will have to increase, as inflationary factors simply cannot allow andalusite producers to keep on absorbing cost increases.”

“Andalusite is not a high margin raw material, so South African andalusite producers in particular will have to increase prices sooner rather than later as the ability to absorb cost increases for too long a period is limited,” he explained.

As reported by IM, in December last year South African andalusite prices were lifting for Q1 2011, with 57-58% Al₂O₃ material, FCA mine moving up to €238-270/tonne for bulk, 2,000 tonne lots, from €225-255/tonne. The price of 55-59% Al₂O₃ andalusite, FOB European port was also moving upwards, to €355-410/tonne from €335-385/tonne. The increase is expected to continue further.

De Ferrari from Andalucita forecast “a tendency for the price to go up” as a direct reflection of increasing mining and manufacturing costs and as the US dollar decreases in value. “Global andalusite prices are in a state of flux with increasing demand because of the growing world economy and new expanded facilities,” he said.

Isti de Ujfalussy, president of Picobello Andalucita, confirmed the trend. “Demand is solid. End users cannot resist prices,” he said.

One of the main factors for andalusite prices will of course depend on what happens with bauxite and its exports outside of China. Andalusite is seen as a cheaper alternative in terms of costs to refractory bauxite which ranges between $410-510/tonne depending on the grade. With andalusite presently ranging between $230-400/tonne, the substitution between the two raw materials remains tempting for end users.

As Tim Geldmacher, managing partner at Cofermin, commented to IM: “If you look at the insecure supply
situation of bauxite from China and the tremendous price increases this important mineral has gone through over the last few years, it becomes clear that andalusite - which is available from non-Chinese sources at stable and competitive prices throughout the last few years - is one of the most likely substitutes for bauxite in those areas where it is technically possible.”

**MARKET DEMAND**

The main market for andalusite remains the refractories industry. Bauxite supply being mainly controlled by China, the most promising options seem to come from the use of andalusite as an alternative to bauxite in certain refractory applications.

“European refractory producers cannot count anymore on prices or stability from China. They do not feel secure with Chinese bauxite. So there is a gradual movement to andalusite,” Ujfalussy from Picobello Andalucita commented to IM.

As a result, it has naturally become an attractive beacon to andalusite producers and developers.

De Ferrari believes that, as we see more and more andalusite replacing bauxite, “the growing world market can readily absorb new producers of first quality refractory raw materials”.

“The new trends are to branch out into replacing other raw materials such as bauxite in certain applications,” Pabst explained to IM, adding that andalusite could potentially become a long-term alternative to the usual refractory raw materials in certain applications.

De Ferrari from Andalucita confirmed that using andalusite as the replacement for other high alumina refractory raw materials such as bauxite had a good potential, however he warned that direct usage comparisons must be carefully handled between the two materials as it is not possible to compare the in-service life of bauxite with andalusite.

“Despite any difference in chemistry, as with Al₂O₃, in some services andalusite may impart some positive longer-life characteristics. The numbers are only indicators. Andalusite has performance attributes not found in bauxite. Actual performance in service is the only real test,” warned De Ferrari.

“Andalucita’s objective is not to replace bauxite but to economically complement,” he said.

In addition, andalusite players are also working on developing new applications for their raw material - such as in technical ceramics or energy - but results are still kept confidential. “We need to develop technology and to formulate different products,” believes Ujfalussy.

In South Africa, Pabst revealed to IM that Andalusite Resources is running a study in conjunction with Mine Feuerfest from Germany to this effect. In Peru, Ferrari confirmed that new applications were “presently under research”.

Seeing “good opportunities for andalusite”, Geldmacher from Cofermin confirmed that the company was “working actively to explore new applications”.

“However despite the price and availability advantages, the industry needs time to make the necessary tests and decisions to substitute one mineral with another,” he pointed out.

In terms of regions, Asia and South America remain the most promising end markets. “South America, and particularly Brazil, is very good place for andalusite,” explained Ujfalussy although “it has nothing to do with [the company’s] plans.”

**MARKET OUTLOOK**

Despite a rather sluggish market at present, andalusite players have hopes for a bright future for the industry. “The market can only get better,” Pabst declared to IM. “The continuing appetite from China for andalusite and other raw materials that andalusite can potentially replace will drive demand and grow the market; at what pace is not clear right now,” he explained.
Among the main factors expected to impact the andalusite market, opportunities lie in China’s further restrictions of bauxite exports.

“We see a stable demand with growth potential,” De Ferrari confirmed to IM as the world refractory industry is “unhappy with the unfair practices of the Chinese” with domestic refractories manufacturers getting better prices for bauxite than the industry outside of the country.

Pressure to produce longer lasting, lower cost refractories also stimulates the industry. Finally, demand for higher quality refractories from emerging economies such as Asia is expected to keep boosting the industry, with a growing potential coming from India, Indonesia, Vietnam, the Philippines, and Turkey, in addition to Brazil.

Russia is also seen as a promising region for andalusite from end users. “It is becoming a bit of a hub,” believes Ujfalussy.

“Andalusite is poised to be a significant contributor,” De Ferrari forecast.

Andalusite Resources, which started production in 2003 at its Maroeloesfontein mine, in the Limpopo province, increased production by 40% in the middle of last year to 70,000 tpa