

February 3, 2017

**Dear clients and colleagues,**

The World Health Organization (WHO) determines air quality by measuring the amount of small particles, known as PM2.5, suspended in the air. Particles of this size are easily inhaled and can damage the lungs. The WHO identifies a safe level of air quality as containing 10-25 micrograms of PM2.5 per cubic metre. Late in December, levels in Beijing's air reached above 400 micrograms per cubic metre, and more than 70 other Chinese cities released warnings that air pollution had reached dangerous levels. The poor air quality led the government to order factories, some power plants and schools to close.

Since 2011, the Chinese government has been in an environmental fight to curb air, water and soil pollution. Progress has been palpable, but much more needs to be done as public pressure continues to mount for tighter regulation.

In the past five years, China's service industry has grown considerably, energy intensity per unit of GDP has fallen by 18.2% and emissions of key pollutants have dropped by over 12%.

China's next Five-Year Plan promises to be even more aggressive at fighting pollution. By 2020, the government expects that the intensity of water use per unit of GDP will fall by 23%, energy intensity by 15%, and carbon intensity by 18%.

The coal industry has become the government's primary target in trying to appease the population's anxiety over air pollution, and the shutting of energy facilities continues to have broad ramifications. In addition to large green initiatives, China is addressing over-production in energy-intensive industries, such as construction and manufacturing, through corporate closures and restructuring.

In the last three years, the closure of inefficient facilities in China's bloated manufacturing sector has removed from production 90 million tonnes of steel, 230 million tonnes of concrete, over 76 million tonnes of plate glass and 1 million tonnes of aluminum. This pruning is also allowing China to select which industries it cares to support long term.

In addition to better environmental control and employment quality, trimming production in the dirtiest segments of the manufacturing and resource sectors has had a positive impact on commodity prices as competitive pressures within China start to ease.

The price of commodities, such as aluminum (and its upstream products alumina and bauxite) and iron ore, have firmed up as a result of a more rational pricing environment and government stimulus in China in addition to global growth.

One of our portfolio companies directly affected by these re-planning efforts is Alumina. The company recently signed important supply agreements with the largest aluminum smelters in China.

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**Alumina Limited (AWC: ASX – \$1.89)**

<http://www.aluminalimited.com/>

**Business Overview**

- Alumina is a leading Australian resource company with a specific focus on alumina, the feedstock for aluminum smelting. Alumina is the recognized industry leader and owns 40% of the world's largest alumina producer, Alcoa World Alumina and Chemicals (AWAC).
- AWAC employs over 7,000 people to mine and refine bauxite to produce alumina. Most of its production is sold to aluminum smelters worldwide, but it does process a percentage of the alumina it produces into aluminum metal.
- AWAC has a global network of mines; refineries in Australia, the United States, Guinea, Suriname, Brazil and Spain; and also has an interest in a smelter in the state of Victoria in Australia.
- Operates 8 alumina refineries and 1 aluminum smelter.
- Owns or has an interest in 7 bauxite mining operations.

**Management**

- Alcoa, which owns 60% of AWAC, manages the day-to-day operations. Future plans include a complete spin-off of AWAC.
- AWAC distributes at least 30% of its net income by way of dividends in each financial year.

**Target Market Size**

- Worldwide production of alumina is 118M tonnes per year. AWAC produces 15.9 million tonnes per year.
- China imports 52M tonnes of bauxite (20%-48% concentrate average) and imports 5M tonnes of alumina.
- China mines approximately 60M tonnes of bauxite per year.
- China requires 60M tonnes of alumina yearly to produce 31M tonnes of aluminum.
- World bauxite reserves are at 20B tonnes.

**Investment theme**

- Aluminum continues to gain market share in the alloy market.
- Global aluminum demand growing at 4% (China growth at 6%)
- AWAC implementing cost-cutting initiatives to lower it from 25<sup>th</sup> to 21<sup>st</sup> percentile in terms of cost
- AWAC has high quality bauxite deposits and operations

Have a great weekend.

The Global Alpha team

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