Growth opportunities

Alcoa Corporation

Investor Day Presentation

Monday, November 8, 2021,
8:00 AM Eastern

CORPORATE PARTICIPANT

Tim Reyes - *Vice President, Chief Commercial Officer*

PRESENTATION

Tim Reyes

Good day everybody, I'm now going to discuss growth and specifically Alcoa's opportunities to grow.

Let's start with the aluminum segment.

In the aluminum industry, low-cost renewable energy is key to maintaining competitiveness.

When we look at the cost curve on the left side of the slide, we see that China, which is roughly 57% of global production, is weighted toward the right-hand side of the cost curve as China pays higher prices for alumina and energy. However, those disadvantages are partially offset by their technological advantages as Chinese smelters tend to be newer and of higher amperage than smelters outside of China. The higher amperage is an advantage in terms of energy efficiency, so while China has higher energy costs per megawatt-hour, those costs are offset to some extent by lower consumption.

One area where China is disadvantaged and where Alcoa has an advantage is in carbon emissions. In a hypothetical world in which we have a $50 per tonne price on carbon globally, the curve steepens and the position of the Alcoa portfolio, and in particular our EcoLum smelters, move to the left and become even more competitive as the industry cost curve steepens.

When looking at opportunities for Alcoa, growth in the aluminum sector will be focused on executing creep projects, restarting idle capacity, and implementing game-changing breakthrough technologies.

As you can see on the left side of this slide, Alcoa has potential to increase aluminum capacity by 400[,000] to 450,000 tonnes per annum. We just announced the restart of 268,000 tonnes per annum of capacity at our Alumar smelter where production will begin in the second quarter of 2022. I want to also highlight that by 2024, 100% of the power to the Alumar smelter will be supported by renewable energy sources through a series of long-term contracts. In addition to the potential to restart idle capacity, the balance of the additional capacity will come from creep projects, those that unlock additional capacity through process improvements and investments, all focused on our low carbon smelters. Alcoa has a track record on delivering creep projects which are low risk compared to brown and greenfield projects and are typically low capital intensity with attractive returns. For example, at our Deschambault smelter in Canada, which was built in 1992, we continue to generate more production through process improvements and investments, and have increased production volume by over 10% the past 10 years.

In regard to developing new technology, you can hear more details from Ben Kahrs today about the prospects of developing technologies like Elysis

and Astraea. New technologies will open new avenues to address global sustainability while also being economically viable. For example, besides eliminating direct greenhouse gases, Elysis has potential to increase anode life, reduce operating costs, and operate more efficiently than conventional smelting.

Turning to alumina, we will again start with some of the factors that drive competition in the industry. China has been expanding refining capacity and the economics shown here demonstrate why. Chinese refineries have overcome higher operating costs driven by import bauxite costs with lower capital intensity and higher domestic alumina prices. However, like smelting, China's refining capacity is primarily fueled by coal.

To see more growth outside of China, one enabler will be a price on carbon emissions. As you can see on the right-hand side, Alcoa leads the industry as a low carbon alumina producer. Alcoa's refining system has the lowest carbon intensity in the world. We are also the only producer to offer a low carbon alumina product, EcoSource. As I pointed out earlier, a price for carbon emissions would disproportionally impact China due to their higher carbon intensity and enable growth outside of China.

As we discussed on the previous slide, China is disadvantaged in both operating cost and the cost of carbon but has advantages in terms of the required return on capital and price. For growth to occur outside of China there must be changes in the economics.

One risk to these economics becomes freight. In-situ mines offer a cost advantage over China's exposure to uncertain freight costs. An increase in freight would widen the gap between China's already higher operating costs and those of refineries elsewhere. The same would be true for a cost of carbon, as it would further increase the costs of refiners relying on coal.

Because of our low operating costs and ability to access in situ bauxite, Alcoa is well positioned to grow our low carbon refining system as conditions evolve.

We continue to evaluate growth opportunities that will create value by adding low carbon capacity that generates returns. We have a track record of delivering projects like Alumar Unit 2 and the last two Pinjarra creep projects. Under the right market conditions, our pipeline of growth projects has the potential to add 15%+ production growth versus a 2020 baseline.

We also have opportunities to grow in the non-metallurgical grade alumina markets. Today we sell roughly 900,000 to 1,000,000 metric tonnes per year of non-metallurgical grade alumina products from our global refining system.

On September 30th, Alcoa announced a new development project with FYI Resources Ltd to produce High Purity Alumina (HPA). Alcoa has entered into a binding term sheet which positions us to own a 65% interest in the project that is expected to result in competitively produced HPA.

Market growth for HPA is driven by global decarbonization goals including demand for synthetic sapphire used as a substrate in the production of LED lighting, as a powder on lithium-ion battery separators where demand is driven by growth of electric vehicles and other battery applications, as well as other niche high tech uses. The HPA market is expected to have an almost 20% compounded annual growth rate to 2028.

This is an exciting prospect, and the staged investment structure will allow us to evaluate the technology and market opportunities as we develop the project.

Turning to bauxite, when we look at the next decade, we see tremendous growth in the seaborne bauxite market as China's import needs will grow from a little over 110 million metric tonnes in 2021 to over 190 million metric tonnes by 2030. The refining expansions, especially those in Asia ex-China, will also drive increased consumption of bauxite over the decade. Much of this growth will be fed by increased supply that we expect to come primarily from Guinea and Australia.

Looking at the bauxite reserves, Alcoa is present in the largest, high quality bauxite deposits in the world, like Guinea, Australia and Brazil and has growth opportunities in multiple locations. The opportunities identified are brownfield expansions in regions that value responsible mining and where Alcoa can leverage its social license to operate, including bauxite to serve the Atlantic region and bauxite with access to the growing Chinese market.

Finally, our growth decisions will follow our capital allocation framework. 'Position for growth' is one of the three categories that maximize value creation.

Our growth opportunities include all three segments, Aluminum, Alumina, and Bauxite, and span the vectors of creep and expansion projects of our existing assets, extension of our core segments and developing and deploying new technologies that will reinvent the industry.

We will continue to focus on projects that build on our strengths and generate strong returns through the commodity cycles and that are consistent with our values and advance our sustainable mission.

Thank you!