Data collected over the past three years will be needed to permit and build the proposed Ambler Mining District Industrial Access Road. This proposed 211-mile (340 km) long road linking the copper-rich Ambler Mining District to Alaska’s road system is an example of how the Alaska Industrial Development and Export Authority is using its financial muscle and ability to build and operate large infrastructure projects to help mining companies overcome the challenges of developing often remote mineral riches in the Last Frontier. See page 12.
By SHANE LASLEY  
Mining News

From Kotzebue to Ketchikan, Alaska Industrial Development and Export Authority is using its financial muscle and its ability to build and operate large infrastructure projects to help mining companies overcome the challenges of developing the often remote mineral riches that the Last Frontier has to offer.

“We are working with local communities and mine developers on infrastructure projects throughout Alaska, including port facilities and energy supply,” said AIDEA’s external affairs executive Karsten Redvik.

AIDEA, which boasts a Standard and Poor’s AA+ credit rating, uses this financial strength to fulfill its mission to promote, develop, and advance economic growth and diversification in Alaska. This creditworthiness has allowed the quasi-state-owned authority to obtain long-term, low-interest bonds to finance large mining infrastructure projects — allowing developers to payback these hefty expenditures over the longer term.

Opening new mining areas, diversifying the types of minerals produced in Alaska and bringing oil and gas fields into production are at the top of AIDEA’s strategic goals.

Though it was created by the Alaska Legislature in 1967, AIDEA is a public corporation rather than a traditional state agency dependent on state funding. This enables the authority to operate more like the private sector rather than the public.

“We are not funded by the state,” explains Redvik. “Our revenues come from financing large projects like Red Dog, from our highly successful loan programs with Alaska businesses, and from our investments. These revenues not only cover our operational expenditure; we also pay an annual dividend of up to 50 percent of our revolving fund net income to the State of Alaska general fund.”

AIDEA has successfully pursued on numerous occasions its mandate to promote, develop and advance economic activity in Alaska through strategic partnerships with the mining industry,” said Heatherdale Resources President and CEO Patrick Smith.

Heatherdale’s Niblack project in Southeast Alaska is one of more than a dozen Alaska mining projects that stand to directly or indirectly benefit from the financing strength and management skills AIDEA brings to the table.

Patient investment

The DeLong Mountain Transportation System, a 52-mile (84 kilometers) road, port and storage facilities used to ship the zinc and lead concentrates from the Red Dog Mine in Northwest Alaska, was the first mining-related infrastructure project financed and owned by Alaska Industrial Development and Export Authority.

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While the some US$345 million in dividends paid to the state of Alaska and its citizens is a testament to AIDEA’s financial savvy, the development authority has a higher standard for measuring its success. In addition to a return on investment, an AIDEA-supported project must contribute to economic growth and have support of the local communities.

The Delong Mountain Transportation System, an infrastructure project connecting the remote Red Dog Mine to world markets, and the Skagway Ore Terminal, which ships about 40 million pounds of copper concentrates from Capstone Mining Corp.’s Minto Mine in the Yukon Territory, demonstrate AIDEA-owned projects that buoy the economy.

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The original DMTS construction, completed in 1990, and a subsequent expansion and upgrades undertaken in 2000 cost AIDEA US$267 million. The authority is being reimbursed for this investment through fees paid by Teck Alaska, the subsidiary of Teck Resources Ltd. that operates the Red Dog Mine.

AIDEA is not looking to make a quick return on its investment but considers the infrastructure an asset that pays dividends over the long term.

“This is essentially a long-term, patient capital investment program of 40 to 50 years,” explains AIDEA Deputy Director Jim Hemsath.

Aqqaluk, the deposit currently being
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mined at Red Dog, provides enough reserves to keep the mine in production until 2031 and Teck is exploring other promising deposits in the greater Red Dog area. If developed, zinc-lead concentrates from these deposits could extend the usefulness of the DMTS well beyond AIDEA’s patient pay-back period.

And, while AIDEA is getting paid back its patient capital, Northwest Alaska and its residents are benefiting from an economy bolstered by the Red Dog Mine.

In 2012, some 53 percent of the 604 jobs at Red Dog went to shareholders of NANA Regional Corp., the Native corporation representing the Iñupiat of Northwest Alaska.

“We’re talking about highly skilled, high-paying stable jobs, and they have given a tremendous economic boost to a very remote region of Alaska,” said Rodvik.

In 2012, US$33.9 million in wages was paid to NANA shareholders working at Red Dog.

The economic boost to Northwest Alaska goes beyond hefty paychecks. Teck Alaska has paid approximately US$118 million as payment-in-lieu of taxes to the North Slope Borough since mining began in 1989.

NANA, owner of the Red Dog property, has received roughly US$494 million in net proceeds from the mine.

In accordance with the operating agreement governing the Red Dog Mine, the royalty Teck pays NANA increased in the fourth quarter of 2012 to 30 percent of net proceeds of production. Every five years this royalty increases by five percent up to a 50 percent royalty.

And, in accordance to section 7(i) of the Alaska Native Claims Settlement Act, some 62 percent of the royalty, or more than US$15 million, has been distributed to the other Native regional and village corporations that span Alaska.

Estimates credit Red Dog Mine with creating roughly 2,800 jobs statewide.

Connecting Lik

AIDEA has a second customer considering using the Delong Mountain system to transport zinc and lead concentrates from Northwest Alaska to the world.

In 2010, Zazu Metals Corp. signed an agreement to complete due diligence for the Lik project. Teck is a 50 percent joint venture partner at Lik Project. Zazu has the exclusive right to increase its stake to 80 percent by spending US$25 million on the project by 2018.

Lik has drawn the attention of Lundin Mining, a diversified base metals mining company with operations in Portugal, Sweden, Spain and Ireland. In 2011, Zebra Holdings and Investments, a company owned by a trust settled by the late Adolf H. Lundin, invested C$7.97 million to buy a 19.99 percent stake in Zazu.

The ore-body at Lik is divided into two deposits separated by a fault – the near-surface Lik South and the deeper Lik North. Lik South has an indicated resource of 18.74 million metric tons grading 8.08 percent zinc, 2.62 percent lead and 52.8 grams-per-metric-ton silver, plus an inferred resource of 1.23 million metric tons grading 6.80 percent zinc, 2.12 percent lead and 35 g/t silver.

Lik North contains an inferred resource of 5.18 million metric tons grading 9.65 percent zinc, 3.25 percent lead and 51.5 g/t silver.

A preliminary economic assessment completed by Scott Wilson Roscoe Poole Associates Inc. in 2010 indicates that mining the near-surface Lik South deposit is economically viable. The PEA envision a 5,500 ton-per-day mine and mill with an 8-year mine life, based on the indicated resource at Lik South.

Zazu said the studies will contribute to a feasibility study for the Lik project.

The study identified multiple areas where the project economics could be improved. JDS Energy and Mining, Inc., mine development specialists with experience in northern climates, has continued to streamline the mine plan as it completes a feasibility study for Lik.

Hampering out the infrastructure details is key to completing the advanced engineering and financial analysis.

Ambler Road

The long-term investment into the Delong Mountain system will likely provide a model for building a road that links the copper-rich but remote Ambler Mining District to Alaska’s contiguous road system.

In recent years, including the current budget, the State of Alaska has invested some US$18.5 million towards defining an optimal corridor to the Ambler Mining District, establishing a right-of-way, and beginning the environmental and permitting work to build the road to Ambler. Most of this work was completed under the guidance of the Alaska Department of Transportation. This year, AIDEA assumed the project.

In April, AIDEA and NovaCopper Inc. entered into a memorandum of understanding that allows AIDEA to investigate various ways to fund the construction and maintenance of the Ambler Mining District Industrial Access Road and create the framework by which NovaCopper will repay the investment by developing mines at one or more of its high-grade copper deposits in the area.

“The completion of the MOU with NovaCopper is beneficial, not just for NovaCopper, but for all Alaskans because the development of the Ambler mining district is expected to produce significant economic benefits for the state and, most importantly, for the communities of Northwest Alaska,” said AIDEA Executive Director Ted Leonardi.
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NovaCopper and NANA have forged a deal that unites two large land packages with multiple high-grade copper deposits and prospects into the Upper Kobuk Mineral Projects. The two most advanced deposits, Arctic and Borinite, currently have more than 5.5 billion pounds of copper in resources and the 2013 drilling is expected to continue to expand that number.

“We are well underway to achieving our objective of defining 10 billion pounds of high-grade copper in the Upper Kobuk, which has the potential to evolve into one of the world’s major copper mining districts,” said NovaCopper CEO Rick Van Nieuwenhuyse.

Multiple projects in this remote region would help ensure the repayment of building a 211-mile (340 kilometers) long road, extending west from the Dalton Highway to the project area. The working assumption in a preliminary economic assessment for developing the Arctic deposit is that AIDEA would arrange financing in the form of a public-private partnership to construct and maintain the road to Ambler. AIDEA would charge a toll to multiple mining and industrial users (including NovaCopper’s Arctic Project) in order to pay back the costs of financing the road to Ambler.

“AIDEA is the lead proponent for the permitting, financing and construction of an industrial access road to the Ambler mining district and the completion of this PEA provides further impetus for AIDEA to move forward on the permitting and construction of the Ambler access road,” said Van Nieuwenhuyse.

With the Ambler Road complete, the synergies will spread to the multitude of rich deposits and prospects previously isolated in this remote region of Northwest Alaska.

Interior energy

The Ambler access road is not the only AIDEA project that could benefit the economies of Arctic and other Upper Kobuk Mineral Projects. A liquefied natural gas facility currently under review by the development agency could provide the project with less expensive fuel.

The LNG facility is part of the Interior Energy Project, a plan introduced by Alaska Gov. Sean Parnell to lower the
notoriously high heating and electricity costs in the Fairbanks region of Interior Alaska. Senate Bill 23, which provides AIDEA the ability to finance up to US$275 million of the project, received unanimous approval in both the Senate and House in April.

Open-pit mining of the Arctic deposit is projected to require 15 megawatts of peak load power. The PEA for developing the Arctic deposit assumes five 3.6 MW diesel generators will provide this electricity. Onsite power costs using diesel are estimated to be US$2.2 cents/kWh, assuming a diesel price of US$4.74 per gallon.

“Nearly half of our costs are related to power generation and the base case assumes that we will deliver diesel fuel to site from Fairbanks. We think there is a real upside here, because AIDEA is also working on construction of an LNG (liquefied natural gas) plant on the North Slope, and if they actually complete that, we are looking at buying LNG and converting that to gas. We think that will be lower costs and lower emissions,” Van Nieuwenhuyse explained.

Taking the proposed road to Ambler, the 450 miles to deliver North Slope LNG to the Arctic project would be a slightly shorter trip than trucking gas to Fairbanks.

“Arctic is not the only mining beneficiary of the Interior Energy Project. As well as lowering residential electrical bills, the initiative would provide more reasonably priced power to the Fort Knox and Pogo mines and potentially the Livengood project.

In 2012, Kinross Gold spent roughly US$40 million, or about US$110,000 per day, on its power bill at the Fort Knox gold mine, situated about 26 miles (42 kilometers) north of Fairbanks.

A lower power bill could help extend the life of Fort Knox and the 600 high-pay-ming mining jobs that go with it, as well as improve the viability of developing a mine at International Tower Hill Mines Ltd.’s Livengood project located about 70 miles (110 kilometers) northwest of Fairbanks.

AIDEA is targeting the delivery of LNG to Fairbanks by the fall of 2015.

Gateway to the Yukon

Alaska mining projects are not the only ones benefiting from AIDEA infrastructure investments. Yukon Territory mines are shipping concentrates from the Skagway Ore Terminal, a facility originally built in 1968 to accommodate ore shipments form Yukon’s Faro lead-zinc mine.

AIDEA purchased the terminal from White Pass Railway in 1993 but closed it in 1997 after the Faro Mine ceased operations due to unfavorable market conditions.

A decade later, the Skagway Ore Terminal was once again shipping concentrates from the Yukon, this time from Capstone Mining Corp. (formerly Sherwood Copper Corp.’s) Minto copper-gold-silver mine.

AIDEA made significant renovation to the Skagway Ore Terminal, constructing 25,000 square feet of storage capacity before the first copper concentrates were loaded on a ship at Skagway in October 2007, and then a year later added an additional 10,000 square feet to accommodate Capstone’s need for increased space.

Capstone, which now ships some 40,000 metric tons of copper concentrates through Skagway each year, signed a lease that extends its tenancy at the ore terminal to 2023.

“We are very pleased to extend this lease with Capstone Mining. The company is an excellent tenant, partner and corporate citizen,” said AIDEA Executive Director Leonard. “This is another sign that our partnership with industry and the community of Skagway continues to produce positive results.”

To boost the economic growth in this Southeast Alaska port town, AIDEA is in the preliminary phase of a US$65 million expansion to the Skagway Ore Terminal.

The added capacity from this expansion would provide room for concentrate from a proposed mine at the Selwyn zinc-lead project in eastern Yukon.

A feasibility study completed in 2011 anticipates a mine that would produce 255,000 metric tons of zinc and 65,000 metric tons of lead per year. An updated to the feasibility study anticipating a smaller scale operation was due for release in May, but Chilchong Canada Mining Ltd., which bought full ownership of the mine, has not released the details of the revised study.

In July, Eagle Whitehorse, LLC signed a deal with AIDEA to ship magnetite from the Whitehorse Copper Mine out of the Skagway Ore Terminal.

Eagle Whitehorse extracts magnetite from existing mine tailings at the Whitehorse Copper Mine. This iron ore will be trucked over the Klondike Highway to the Skagway facility, where it will be stockpiled and loaded on ships for transport to market.

To accommodate this new traffic, AIDEA is in the midst of a US$7.5-million expansion due to be completed in 2014.
China to tip base metals scales

By SHANE LASLEY
Mining News

Global base metals consumption is divided into two sectors – China and the rest of the world.

By 2017 China will consume more than half of the world's supply of base metals, the remaining 200 countries will make up the remaining 48 percent of the market, according to an October report published by Woods MacKenzie.

"Today, the Rest of the World, excluding China, accounts for 54 percent of the global base metals market. However, as we're seeing with many other commodities, China's relentless appetite will overtake the Rest of the World, growing to 52 percent of demand in a 117Mt (metric tons) market," penned the Scotland-based energy and metals analyst.

Consumption is being driven largely by China's investments into its infrastructure, an enormous urbanization effort aimed at shifting the balance of its economy toward consumerism.

Helen Matthews, head of base metals markets research for Wood Mackenzie said, "Our forecasts for the next five years show that across all of the base metals – aluminium, copper, lead, nickel and zinc – growth in demand will come predominantly from China."

Hard landing?

China has enjoyed double-digit gross domestic product growth for most of the past three decades. Over the past two years, however, the growth of the country's GDP dipped below 7.8 percent, causing many analysts to debate whether China's economy was headed toward a hard landing.

"Demandal growth has slowed from the double digits we saw from 2008 to 2013 to single digits – ranging from five (percent) to eight percent – however, it's important to note that in absolute tonnage terms, we still see significant numbers," said Matthews.

Future brightens

After hitting a low of 7.5 percent in the second quarter, China's economy has maintained a steady growth with major indicators rebounded to 7.8 percent in the third quarter, according to numbers released by the country's National Bureau of Statistics.

"China's economy has maintained a steady growth with major indicators rebounded to 7.8 percent in the third quarter, according to numbers released by the country's National Bureau of Statistics," NBS spokesman Sheng Laiyun said during an Oct. 18 press conference.

This growth is driven to a large degree by government spending on infrastructure and urbanization projects – an investment that is aimed at bolstering its burgeoning middle class. In the longer term, China hopes these efforts will make the spending power of its 1.35 billion citizens.

For now, the urbanization and infrastructure demands an increasing supply of iron, copper, zinc and other base metals.

"While there are a number of factors behind growth in demand for each base metal, a key theme for China is continued urbanization and rising domestic wealth," explained Wood Mackenzie Senior Economist Johnathan Butcher.

Lindsay said China's commitment to urbanization "will require a lot of commodities and should be good for all of us."

He said Teck's confidence in the growth in China is the driver behind the investments it is making in mines and mineral properties closer to home.

Using a proprietary index that tracks a number of factors, Wood Mackenzie is confident that China's strong economic growth and base metal demand will remain intact for at least the next several years.

"Looking out to 2030, we see a bright future for Chinese commodity demand," said Butcher. "Urbanization rates will reach 70 percent, compared to just under half of the population in 2013. This will have a widespread impact on the economy over the next 20 years, with electricity consumption per capita forecast to reach the same level as Korea today."

Delivering this electricity is expected to require a lot of copper.

Referring to China's five-year plan, Lindsay said the country is targeting the addition of 220,000 kilometers (124,000 miles) of transmission lines to its electrical grid.

"To put that in perspective, that is more than enough transmission line to replace every single existing power line in Canada," he said.

Chinese copper imports climbed 18 percent to 457,850 metric tons in September, the highest level in 18 months.

"Those that are able to weather the down-cycles and maintain or advance their asset base will find themselves even better positioned for future growth, and in our industry that growth lies in Asia and particularly in China," Lindsay added.

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"This expansion of Skagway Ore Terminal is another sign of our commitment to grow the facility in partnership with the community, and have it used in the long term as the Gateway to the Yukon," said AIDEA Executive Director Leonard. "We are very pleased that because of the support of Governor Parnell and the Legislature, AIDEA has the financial tools to expand the capability of the terminal. New jobs and economic growth for Skagway will result."

Evaluating Niblack

Under a memorandum of understanding entered into in early October, AIDEA and Heatherdale Resources Ltd. are evaluating whether the authority will help develop a potential mineral processing plant and associated facilities at the Gravina Island Industrial Complex near Ketchikan.

If developed, the Gravina Island facility would process ore from Niblack, a prospective copper-gold-zinc-silver mine situated 40 miles (65 kilometers) southwest of Ketchikan on Prince of Wales Island.

Based on 373 holes drilled at Niblack, the Lookout deposit now has an indicated resource of 5.64 million metric tons averaging 1.75 grams per metric ton gold, 0.95 percent copper, 1.73 percent zinc and 29.52 g/t silver. An additional inferred resource of 3.93 million metric tons averaging 1.32 g/t gold, 0.81 percent copper, 1.29 percent zinc and 20.1 g/t silver have been identified at Lookout and the nearby Trio zone.

Heatherdale currently anticipates a 1,500- to 2,000-metric-ton-per-day operation – of similar scale to Hecla Mining Co.'s Greens Creek silver mine near Juneau. But, with the slopes of Lookout Mountain plunging steeply into the Niblack Anchorage, there is little room for the needed infrastructure, prompting the company to identify Gravina Island as a suitable location to ship the potential ore for processing.

If the processing facilities were positioned at the industrial park, the lower cost of hydroelectricity is expected to offset some of the costs of barging the ore.

The economic benefits realized from the development of the Niblack projects would include roughly 150 high-paying mining jobs at the Prince of Wales mine and another 80 jobs at the Gravina Island processing facility.

This is good news for Ketchikan, a logging town of some 8,000 people that has been seeking new sources of employment since the demise of the timber industry in the region.

Located across a narrow passage from Ketchikan, regular ferry service could transport the mill workers from the Southeast Alaska town to the proposed Gravina mill site.

Heatherdale has already entered into a memorandum of understanding with the Ketchikan Gateway Borough and is beginning to investigate the suitability of the Gravina Island site for processing ore from the potential Niblack Mine. AIDEA will now be formally involved in those discussions, and will also participate in ongoing consultation with local communities and other Niblack stakeholders.

"The Niblack project has tremendous potential economic benefit to Southeast Alaska communities, residents and business," said Leonard. "This is a unique opportunity to generate employment and economic activity on Prince of Wales Island and in the greater Ketchikan area. We are pleased to work with Heatherdale in evaluating the responsible development of this project."

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