

DIAMONDS

A busted project pipeline

Gahcho Kué start and Bunder halt leave few new projects in the works

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With the industry's largest new project, Gahcho Kué, now in initial production and Rio Tinto giving up on its Bunder project in India, there are only a few diamond development projects significant enough to have a meaningful impact on future global production figures.

In Canada, Gahcho Kué (51% De Beers; 49% Mountain Province Diamonds), the world's largest new diamond mine, is on pace to reach commercial production in the March quarter of next year.

First diamonds were recovered in June and, as of August, commissioning has been completed. Two notable diamonds were recovered during commissioning, a 24 carat and 12ct, which are indicative of the quality of stones the mine is expected to produce over the 12-year life of mine.

The Gahcho Kué mine consists of three primary kimberlites with a reserve of 55 million carats, and a production profile of 4.5Mct per annum at an estimated US\$150 per carat, according to a May 2014 feasibility study, though diamond prices have since declined 13%, according to the Zimnisky Global Rough Diamond Price Index, which could change the project's complexion. As it stands, if production forecasts are reached, the mine should be one of the 10-largest diamond mines in the world by volume and value of diamonds produced on an annual basis.

Gahcho Kué will be De Beers' second producing mine in Canada after the company put its Northwest Territories Snap Lake mine on care and maintenance last December after seven years of failing to turn a profit.

De Beers also owns and operates the Victor mine in Ontario. Gahcho Kué is Mountain Provinces' sole asset, after the company spun off its exploration portfolio into Kennady Diamonds in 2012.

Outside of Anglo American (via De Beers),

Rio was the only major diversified miner with a significant stake in a large-scale diamond development project.

Rio's Bunder project in India is an estimated \$500 million capex project, with the potential to produce 27Mct over an estimated mine life of plus-30 years.

Rio spent almost \$100 million on development over the past 14 years and was in the process of procuring environmental permits when it decided to walk away from the project in July. India has a reputation for being notoriously slow in granting mining approval, an item that prime minister Narendra Modi has explicitly stated he wants to improve.

Rio noted that the decision to move on from the project was part of a company-wide cash conservation strategy, but the difficult permitting process certainly played a role, and the economics of the project may have simply not been attractive enough for Rio to justify future capital spending as the high-volume development only hosts low-to-medium-quality diamonds averaging less than \$100/ct.

Rio's presence in the diamond space now consists of its 100%-owned Argyle mine in Australia and its 60% stake in Canada's Diavik mine, which it operates with partner Dominion Diamond.

Looking at future new sources of diamond production, Angola has potentially the most exciting new project in the world. In March, state-run miner Endiama said that its new Luachi project could host as much as 350Mct. Some 12Mctpa of production would put the mine on a scale with Rio's Argyle mine, the world's largest producing diamond mine by volume.

Initial production at Luachi could start as early as 2018, according to Endiama, which could coincidentally coincide with the conclusion of mining at Argyle, which is nearing the end of its life.

Endiama is an experienced player in the diamond space, currently operating the Catoca

mine, which is located in the same Angolan province as Luachi, and is one of the richest diamond mines in the world, estimated to produce 6.5Mct this year worth \$550 million.

Endiama said that it plans to spend \$300 million of capex on phase one of Luachi, with the potential to spend \$800 million over six years, although very few official details on the project have been formally released.

Outside of Angola, Canada and Russia are home to the remaining projects with the potential to produce plus-1Mctpa.

The Canadian province of Quebec's first diamond mine, Renard, 100%-owned and operated by Toronto-listed Stornoway diamonds is on schedule to begin commercial production in the first half of next year.

With a 14-year mine life and an estimated annual production of 1.8Mct worth \$155/ct as of March 2016, Stornoway will be the only other independent diamond miner in Canada outside of Dominion.

Shore Gold's Star-Orion project in Saskatchewan has an indicated resource of over 55Mct estimated to be worth in excess of \$200/ct. An updated feasibility study for Star-Orion is expected by the end of the year.

Peregrine Diamond's Chidliak project in Nunavut, has the potential to produce 1.2Mctpa for 10 years at \$140/ct, according to a preliminary economic assessment released this past July. The company plans to further expand the resource to depth at the primarily kimberlite CH-6 and expand the resource to other nearby pipes that show economic potential. Both projects are at a pre-production decision stage.

Russian diamond major Alrosa has two projects of note in the development phase.

Verkhne-Munskoye is a deposit of three kimberlites in the Republic of Sakha. The \$1 billion project has the potential to produce 1Mctpa for 25 years starting as early as 2019.

Alrosa is also developing the Zarya project, which is estimated to produce 250,000ctpa for 13 years starting in 2021. ■

Diamond development projects

Development project	Country	Life of mine (years)	Production (Ctpa)	Start date	Owner
Renard	Canada	14	1,800,000	Q2 2017	Stornoway Diamond Corp (100%)
Luachi	Angola	29	12,000,000	2018	Endiama (100%)
Verkhne-Munskoye	Russia	25	1,050,000	2019	Alrosa (100%)
Zarya	Russia	13	275,000	2021	Alrosa (100%)
Star-Orion South	Canada	20	1,700,000	TBD	Shore Gold, Newmont Mining Corp*
Chidliak	Canada	10	1,200,000	TBD	Peregrine Diamonds Ltd (100%)
Bunder	India	39	700,000	TBD	Pending government auction
Merlin	Australia	11	>50,000	TBD	Merlin Diamonds (100%)
Lemphane	Lesotho	10	>50,000	TBD	Paragon Diamonds (80%), govt. of Lesotho (20%)

*Star: Shore Gold (100%); Orion: Shore Gold (67%), Newmont Mining Corp (33%). Source: Company data, Paul Zimnisky analysis

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