



HARDMAN & CO.



ANGLO ASIAN MINING

Prodigious cashflow AND bigger “system” potential

By Paul Mylchreest

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Mining



Source: Refinitiv

Market data

| | |
|--------------|--------|
| EPIC/TKR | AAZ |
| Price (p) | 117.50 |
| 12m High (p) | 117.5 |
| 12m Low (p) | 37.6 |
| Shares (m) | 114.4 |
| Mkt Cap (£m) | 134.4 |
| EV (£m) | 128.3 |
| Free Float* | 58.95% |
| Market | AIM |

*As defined by AIM Rule 26

Description

AAZ operates four mines and downstream processing facilities at its Gedabek and Gosha sites in Azerbaijan. Besides further exploration potential at Gedabek, exploration work has begun at the Ordubad prospect.

Company information

| | |
|----------|--|
| CEO | Reza Vaziri |
| CFO | Bill Morgan |
| Chairman | Khosrow Zamani |
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| | www.angloasianmining.com |

Key shareholders

| | |
|------------------|--------|
| Directors & mgt. | 41.05% |
|------------------|--------|

Diary

| | |
|--------|-----------------|
| Jul'19 | 2Q production |
| Sep'19 | Interim results |
| Oct'19 | 3Q production |

Analyst

| | |
|-----------------|--|
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ANGLO ASIAN MINING

Prodigious cashflow AND bigger “system” potential

Anglo Asian Mining (AAZ) is a highly cash-generative miner of gold, silver and copper from four mines in Azerbaijan, where it has close ties to the government. In 2018, it produced 83,376 of gold equivalent ounces (GEOs), paid its first dividend and had net cash on its balance sheet. At this stage, we have made the highly conservative assumption of no production beyond 2025. Nevertheless, our DCF valuation of 156p reflects AAZ's prodigious cash generation and gold/copper stockpiles. Indeed, we estimate that the company's aggregate underlying free cashflow during 2019-25 will be in excess of its current market capitalisation and the annual free cash yield will average 16.2%.

- ▶ **Lowest-quartile cost position:** AAZ's FY'18 reported figure for AISC was \$541/oz, putting it in the first quartile of the gold mining industry's cost curve. This is due to its Azerbaijani jurisdiction, predominance of open-pit mining, power grid access, modest reinvestment levels and efficient downstream processing – all of which contribute to the group's cash generation.
- ▶ **Production upside:** Our 2019-25 production estimates are conservatively based on 482,000 oz of Proved & Probable gold reserves (and related copper/silver) for the Gedabek, Gadir, Ugur and Gosha mines. They exclude i) an additional 553,000 oz of Measured & Indicated Resources, and ii) the potential for commissioning an underground mine at Gedabek before 2025.
- ▶ **Beyond 2025:** It is highly likely that production will continue well beyond our current forecast horizon. Besides the potential for an underground mine at Gedabek, we believe that the Gedabek-Gadir area could be part of a much bigger porphyry-epithermal system of copper-gold-silver mineralisation.
- ▶ **Risks:** AAZ faces the normal risks for a junior miner, albeit without the funding risk faced by explorers/developers. These include volatility in gold prices, political (albeit mitigated) and environmental risk, as well as operational risks in successfully executing the mining plan and operating downstream processing facilities.
- ▶ **Investment summary:** The outstanding aspect of AAZ's financial performance is its cash generation, which is reflected in our DCF valuation of 156p per share, using a discount rate of 8% and long-term gold price of \$1,350/oz. We expect AAZ to pay a \$0.07 dividend in 2019, implying a dividend yield of 4.7%.

Financial summary and valuation

| Year-end Dec (£000) | 2017 | 2018 | 2019E | 2020E | 2021E | 2022E |
|----------------------|---------|--------|--------|---------|---------|---------|
| Sales | 71,806 | 90,354 | 97,748 | 101,824 | 103,612 | 101,332 |
| Underlying EBIT | 9,222 | 26,824 | 27,172 | 26,559 | 21,505 | 21,539 |
| Reported EBIT | 9,222 | 26,824 | 27,172 | 26,559 | 21,505 | 21,539 |
| Underlying PTP | 5,684 | 25,246 | 27,134 | 26,821 | 21,967 | 22,328 |
| Statutory PTP | 5,684 | 25,246 | 27,134 | 26,821 | 21,967 | 22,328 |
| Underlying EPS (C\$) | 2.22 | 14.32 | 15.89 | 15.71 | 12.87 | 13.08 |
| Statutory EPS (C\$) | 2.22 | 14.32 | 15.89 | 15.71 | 12.87 | 13.08 |
| Net (debt)/cash | -18,117 | 6,102 | 27,693 | 48,245 | 69,497 | 92,254 |
| Shares issued (m) | 113.3 | 114.4 | 114.4 | 114.4 | 114.4 | 114.4 |
| P/E (x) | 67.5 | 10.5 | 9.4 | 9.5 | 11.6 | 11.5 |
| Dividend yield | N/A | 4.7% | 4.7% | 4.7% | 4.0% | 4.0% |
| FCF yield | 8.7% | 12.3% | 15.3% | 16.1% | 14.7% | 15.1% |

Source: Hardman & Co Research

Cashflow, earnings and valuation

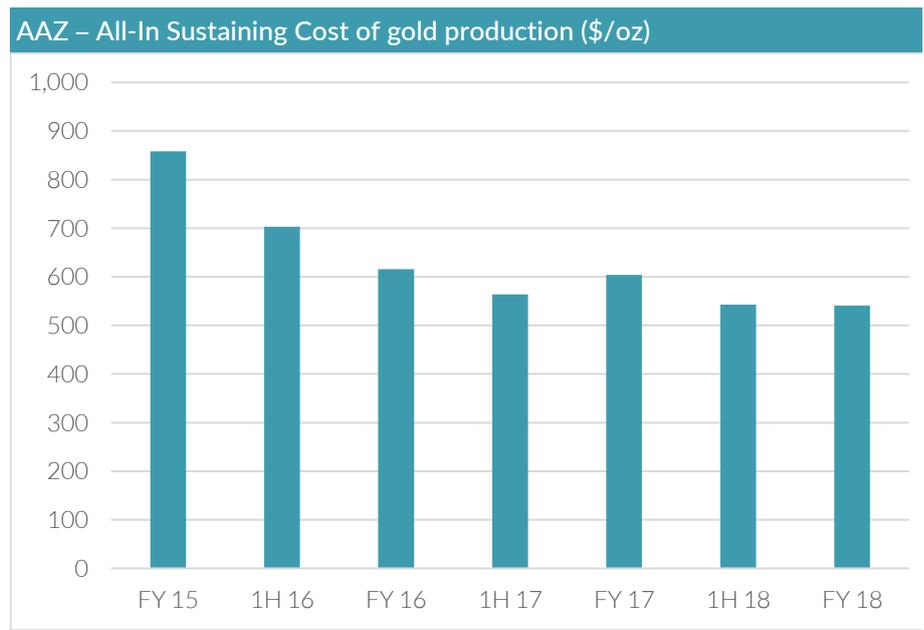
AAZ is a highly cash-generative company due to its low-cost structure

The magnitude of AAZ’s cash generation is the outstanding aspect of the company’s financial performance. This is based on its low-cost production, which is due to several factors:

- ▶ its Azerbaijani jurisdiction;
- ▶ predominance of open pit mining;
- ▶ access to the national power grid;
- ▶ modest levels of reinvestment (despite bringing on new mine production, e.g. Ugur); and
- ▶ investment in efficient downstream processing facilities.

FY’18 AISC was \$541/oz

AAZ’s latest reported (for FY’18) figure for All-In Sustaining Costs (AISC) was \$541/oz versus \$543/oz in FY’17 and an average gold price in 2018 of \$1,268/oz.



Source: Anglo Asian Mining

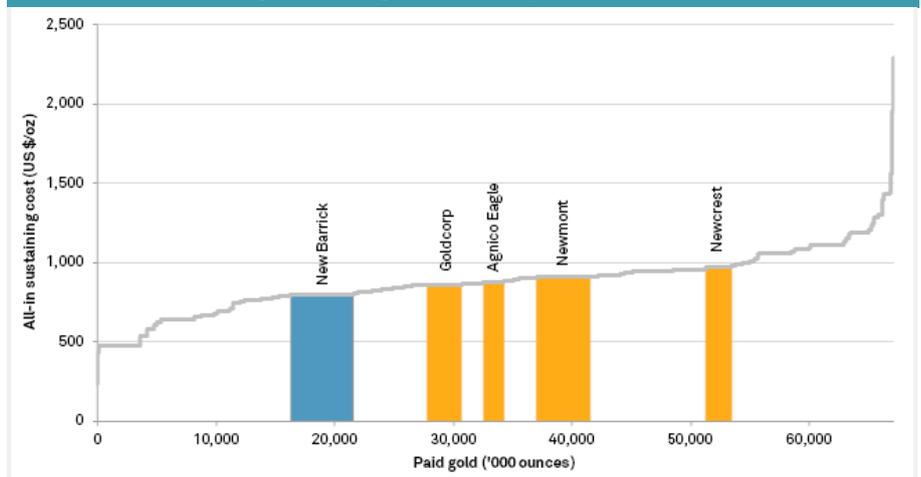
It’s important to put AAZ’s cost structure in the broader gold mining context and insightful to compare it with the largest gold mining companies, such as Barrick Gold, Goldcorp and Newmont, etc.

AAZ is in the first quartile of the industry’s cost curve

An AISC of \$541/oz puts the company comfortably in the lowest quartile of the gold mining industry’s cost curve. The chart below shows the forecast 2019 gold AISC cost curve from S&P Global Market Intelligence.

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Forecast 2019 AISC gold mining cost curve (\$/oz)



Source: S&P Global Market Intelligence

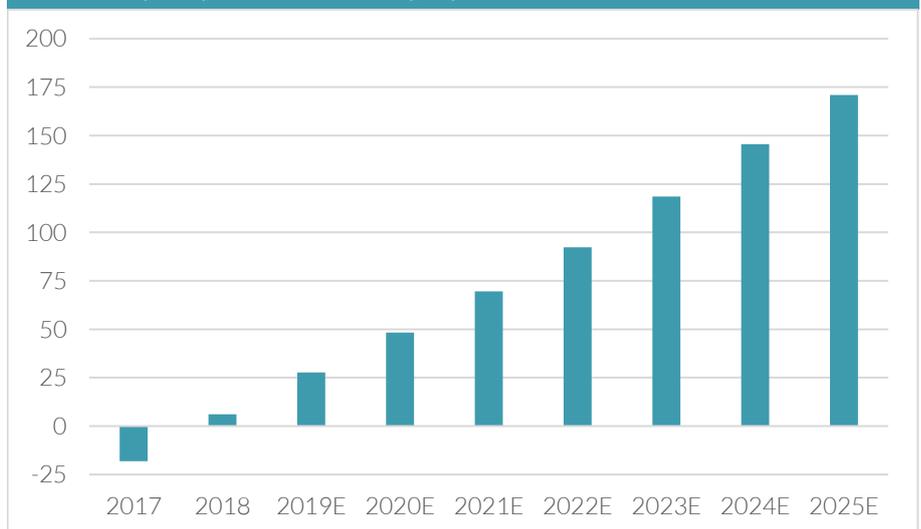
Net cash on the balance sheet and maiden dividend announced in 2018

AAZ's strong cash generation saw it move from a net debt position of \$18.1m at 31 December 2017 to a net cash position of \$6.1m at 31 December 2018. The company declared its maiden dividend of 0.03c/share with its 2018 interims and a further 0.04c/share with the finals. We are currently expecting an identical total dividend of \$0.07/share for 2019. The company has committed to paying a dividend equivalent to 25% of its free cashflow (net cashflow from operations less capex) going forward.

AAZ will either need a higher payout ratio or substantial investment in new mine production

The chart below illustrates that, without a higher payout ratio or substantial investment in new mines and mine production, our financial model shows that net cash on AAZ's balance sheet will be ca.\$170m by 2025, based on the 25% payout ratio.

AAZ – net (debt)/cash 2017-25E (\$m)



Source: Anglo Asian Mining, Hardman & Co. estimates

Please note: because our valuation (see below) is currently based on a forecast production horizon of 2025, we are assuming that the company is wound up by the end of the forecast period. This includes the liquidation (increase in net cash) of \$21.0m of working capital over the seven-year period 2019-25. Excluding this \$21.0m, we still expect AAZ's underlying free cashflow (net income + depreciation & amortisation – capex) during 2019-25 to be in excess of its current market capitalisation (\$171.4m based on a 117.5p share price).

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The table shows AAZ’s cashflow in 2018 and our detailed estimates from 2019-22.

| AAZ – cashflow statement | | | | | |
|-------------------------------|----------------|----------------|----------------|----------------|----------------|
| Year-end Dec (\$m) | 2018 | 2019E | 2020E | 2021E | 2022E |
| Operating profit | 26.824 | 27.172 | 26.559 | 21.505 | 21.539 |
| Non-cash items: | | | | | |
| Depreciation | 20.957 | 23.000 | 24.500 | 26.500 | 27.000 |
| Amort. of mining rights | 1.990 | 2.200 | 2.200 | 2.200 | 2.200 |
| Disposal of mining equip. | 0.209 | 0.000 | 0.000 | 0.000 | 0.000 |
| Other | 0.136 | 0.000 | 0.000 | 0.000 | 0.000 |
| Operating cashflow | 50.116 | 52.372 | 53.259 | 50.205 | 50.739 |
| Change in inventories | -1.767 | 1.000 | -1.000 | 2.500 | 2.500 |
| Change in receivables | -0.314 | 1.000 | 0.000 | 1.000 | 1.000 |
| Change in payables | 2.670 | 0.500 | 1.000 | 1.000 | 0.000 |
| Cash from operations | 50.705 | 54.872 | 53.259 | 54.705 | 54.239 |
| Tax paid | -3.588 | -7.000 | -8.954 | -8.851 | -7.249 |
| Net cash from ops. | 47.117 | 47.872 | 44.305 | 45.854 | 46.990 |
| Capex on PPE & mines | -15.324 | -16.000 | -16.000 | -17.000 | -17.000 |
| Inv. in exploration | -2.875 | -1.100 | -1.150 | -1.200 | -1.200 |
| Net cash for investing | -18.199 | -17.100 | -17.150 | -18.200 | -18.200 |
| Share issues | 0.140 | 0.000 | 0.000 | 0.000 | 0.000 |
| Increase in borrowings | 13.955 | 0.000 | 0.000 | 0.000 | 0.000 |
| Repayment of borrowings | -26.208 | 0.000 | 0.000 | 0.000 | -8.438 |
| Dividends paid | -3.432 | -9.143 | -6.864 | -6.864 | -6.864 |
| Interest received | 0.064 | 0.300 | 0.600 | 0.800 | 1.000 |
| Interest paid | -1.480 | -0.338 | -0.338 | -0.338 | -0.169 |
| Net cash for financing | -16.912 | -9.181 | -6.602 | -6.402 | -14.471 |
| Net change in cash | 12.006 | 21.591 | 20.553 | 21.252 | 14.319 |
| Cash: end of year | 14.540 | 36.131 | 56.683 | 77.935 | 92.254 |
| Debt: end of year | -8.438 | -8.438 | -8.438 | -8.438 | 0.000 |
| Net cash: end of year | 6.102 | 27.693 | 48.245 | 69.497 | 92.254 |

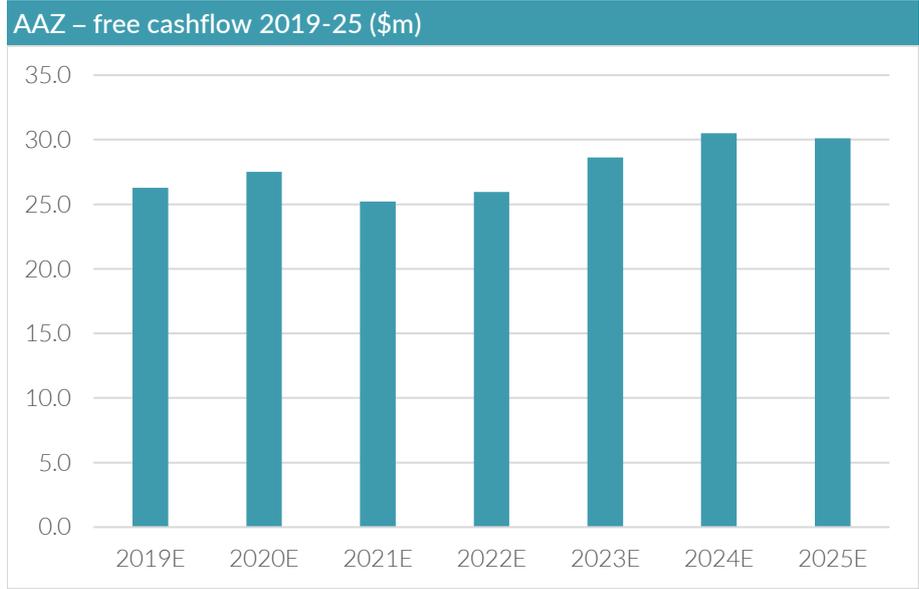
Source: Anglo Asian Mining, Hardman & Co Research

Effective royalty of 12.5% based on PSA until at least 2023

The production-sharing agreement (PSA) between AAZ and the Government of Azerbaijan (GoA) is based on similar contracts to those that have been successfully used in the development of Azerbaijan’s oil sector in cooperation with oil majors, such as BP. Under the PSA, GoA is entitled to 51% of “profit production”, i.e. the value of production less cash operating and capital costs. The agreement is subject to a minimum of 25% of the 51%, i.e. 12.75%, until all costs are recovered. This has been the royalty rate every year; with \$76.9m of unrecovered costs outstanding at end-2018, it is likely to remain so until at least 2023, according to the company.

We estimate that free cashflow generation will average \$27.7m p.a. during 2019-25

Last year, AAZ ran out of tax losses to offset against its tax liability. Nevertheless, we expect cash generation to remain strong during 2019-25, notwithstanding our conservative production assumptions (see below). We estimate that annual free cashflow generation during 2019-25 (defined as net income + depreciation & amortisation – capex) will be in the range of \$25.2m-\$30.5m – with an average of \$27.7m – versus AAZ’s current market capitalisation of \$157.2m (£123.3m). This amounts to an average free cashflow yield of 17.6% p.a.



Source: Anglo Asian Mining, Hardman & Co. estimates

Our detailed P&L estimates through to the end of 2022 are shown in the table below.

AAZ – profit & loss account

| Year-end Dec (\$m) | 2018 | 2019E | 2020E | 2021E | 2022E |
|----------------------------|---------------|---------------|---------------|---------------|---------------|
| Sales | 90.354 | 97.748 | 101.824 | 103.612 | 101.332 |
| Cost of sales | -56.530 | -62.863 | -66.929 | -73.374 | -71.714 |
| Gross profit | 33.824 | 34.884 | 34.896 | 30.239 | 29.618 |
| Margin | 37.4% | 35.7% | 34.3% | 29.2% | 29.2% |
| Other income | 0.068 | 0.000 | 0.000 | 0.000 | 0.000 |
| Admin. expenses: | -5.291 | -5.865 | -6.415 | -6.735 | -6.080 |
| Other op. expenses | -1.777 | -1.848 | -1.922 | -1.999 | -1.999 |
| Operating profit | 26.824 | 27.172 | 26.559 | 21.505 | 21.539 |
| Finance income | 0.064 | 0.300 | 0.600 | 0.800 | 1.000 |
| Finance costs | -1.642 | -0.338 | -0.338 | -0.338 | -0.211 |
| Pre-tax profit | 25.246 | 27.134 | 26.821 | 21.967 | 22.328 |
| Taxation | -8.911 | -8.954 | -8.851 | -7.249 | -7.368 |
| Tax rate | 35.3% | 33.0% | 33.0% | 33.0% | 33.0% |
| Attributable profit | 16.335 | 18.179 | 17.970 | 14.718 | 14.960 |
| Basic no. of shares (m) | 114.0 | 114.4 | 114.4 | 114.4 | 114.4 |
| Basic EPS (\$) | 14.32 | 15.89 | 15.71 | 12.87 | 13.08 |

Source: Anglo Asian Mining, Hardman & Co Research

DCF valuation using 8% discount rate is
156p per share

We have valued AAZ using a DCF model, incorporating a discount rate of 8%, production through to 2025, and long-term gold, silver and copper prices of \$1,350/oz (\$1,325/oz in 2019), \$16.00/oz and \$6,000/t, respectively. Using these assumptions, our fair value for the company is 156p/share, versus the current price of 117.5p (as at 18 June 2019).

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| AAZ – DCF valuation | | | | | | | |
|----------------------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| \$m (unless stated) | 2019E | 2020E | 2021E | 2022E | 2023E | 2024E | 2025E |
| Pre-tax profit | 27.134 | 26.821 | 21.967 | 22.328 | 25.546 | 28.369 | 27.760 |
| Tax | -7.000 | -8.954 | -8.851 | -7.249 | -7.368 | -8.430 | -9.362 |
| NOPAT | 20.134 | 17.867 | 13.116 | 15.079 | 18.178 | 19.939 | 18.398 |
| Depreciation & amort. | 25.200 | 26.700 | 28.700 | 29.200 | 29.700 | 29.700 | 29.700 |
| Change in working cap. | 2.500 | 0.000 | 4.500 | 3.500 | 3.500 | 3.500 | 3.500 |
| Capex & exploration | -17.100 | -17.150 | -18.200 | -18.200 | -18.200 | -18.200 | -18.200 |
| Free cashflow | 30.734 | 27.417 | 28.116 | 29.579 | 33.178 | 34.939 | 33.398 |
| Discount rate = 8% | | | | | | | |
| Discount factor | 1.00 | 0.93 | 0.86 | 0.79 | 0.74 | 0.68 | 0.63 |
| Disc. free cashflow | 30.734 | 25.386 | 24.105 | 23.481 | 24.387 | 23.779 | 21.047 |
| Cum. disc. FCF | 172.918 | | | | | | |
| Net (debt)/cash | 6.102 | | | | | | |
| Total | 179.020 | | | | | | |
| Add: PV gold in tailings | 19.418 | | | | | | |
| Add: PV copper stockpile | 15.089 | | | | | | |
| Add: PV of plant/equip. | 10.553 | | | | | | |
| Add: PV of Ordubad | 3.350 | | | | | | |
| Market cap. (\$) | 27.430 | | | | | | |
| \$/£ | 1.275 | | | | | | |
| Market cap. (£) | 178.376 | | | | | | |
| F.D. no. of shares (m) | 114.4 | | | | | | |
| Valuation per share | 156p | | | | | | |

Source: Hardman & Co Research

The above valuation of 156p per share includes post-tax discounted valuations of AAZ’s gold in tailings and copper stockpiles, an estimate for the post-tax discounted valuation for plant & equipment and a (nominal) post-tax discounted valuation of the Ordubad deposit. AAZ is studying possibilities to recover those metals as part of its operations going forward. Our valuation estimates for the gold and copper stockpiles were derived as shown in the table below, although we should emphasise that more testwork needs to be carried out to confirm the recoveries assumed. .

| AAZ gold and copper stockpiles valuation | | |
|--|------------------|------------------|
| | Gold | Copper |
| Metal content | 87,000 oz | 10,900t |
| Price | \$1,350/oz | \$6,000/t |
| Recovery | 46% | 60% |
| Processing cost | \$200/oz | \$500/t |
| Discount factor | 0.63 | 0.63 |
| Tax | 33% | 33% |
| Value (\$m) | \$19.418m | \$15.089m |

Source: Hardman & Co Research

Four low-cost gold mines

AAZ is headquartered in Baku, Azerbaijan

AAZ’s is headquartered in Azerbaijan’s capital, Baku, and its mining and ore processing operations are located in the mountainous area of the Lesser Caucasus in the west of the country. It also has a potentially significant exploration project at its Ordubad contract area, close to Ordubad, the second-largest town of the Nakhchivan autonomous region of Azerbaijan. There are several targets in the Armenian-occupied territories, although AAZ incurs no costs and will only develop them if the political situation improves.

Gedabek is the site of a former copper mine

AAZ’s flagship Gedabek gold, silver and copper mining complex extends over 300 sq. km and is located at the site of a former Siemens mine, which operated from 1864-1917. Siemens’ focus was on mining the sulphide copper orebodies lying beneath the Misdag mountain, which overlooks Gedabek village. The copper mine is reported to have produced 56,000 tonnes of copper and 134 tonnes of gold/silver doré.

AAZ is currently operating three mines in the Gedabek contract area:

- ▶ Gedabek open pit – producing gold, silver and copper since 2009;
- ▶ Gadir underground mine – producing gold since 2015; and
- ▶ Ugur open pit – fast-tracked into gold and silver production in September 2017.

A fourth mine, the Gosha underground mine, is located 50km north west of Gedabek and has been producing gold since 2014.

AAZ – location of mines

Mining concessions (contract areas) in Azerbaijan

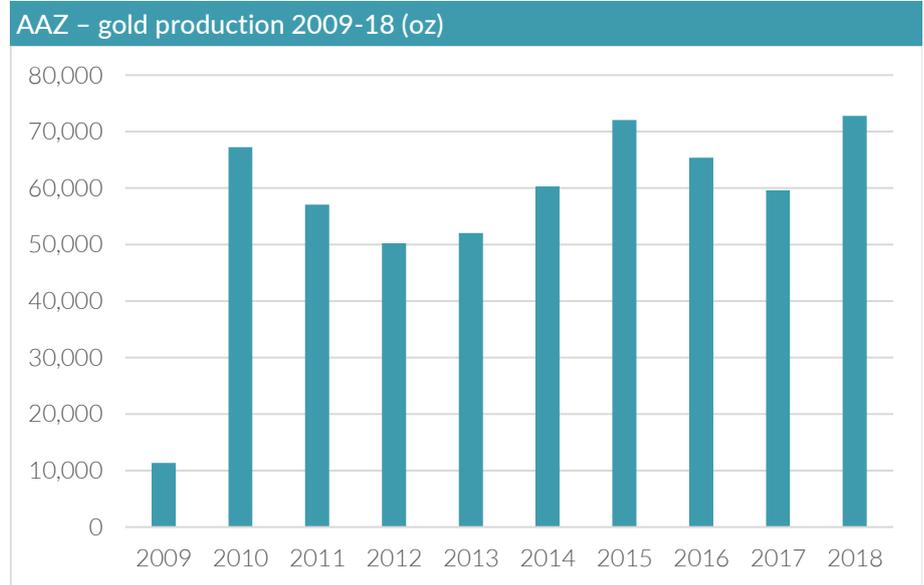


Source: Anglo Asian Mining

Prodigious cashflow AND bigger “system” potential

Since mine production began in May 2009 at Gedabek, AAZ has produced more than 20 tonnes of gold, equivalent to ca.600,000 oz. Annual production in terms of ounces during 2009-18 is shown below.

More than 20 tonnes of gold have produced at Gedabek...



Source: Anglo Asian Mining

...followed by copper and silver production

Copper and silver production began with the expansion of AAZ’s processing facilities, initially with the commissioning of a SART plant (Sulphidation-Acidification-Recycling-Thickening) in 2010.

Differentiated ore zones at the open pit mine

At the Gedabek open pit, the known gold-copper-silver mineralisation has a north-south strike of approximately 1,300 metres and covers a total area of 1 sq. km. The highest gold grades have generally been located in the oxidation zone close to the surface. The northern zone typically has mixed gold and copper mineralisation, with the higher-grade copper ore located around the east of the deposit. Zinc-bearing minerals have been found around the west of the orebody but are not likely to be targeted in the foreseeable future.

Total cost of the Gedabek open pit mine was ca.\$40.0m including the initial processing facilities

AAZ completed the feasibility study for the Gedabek open pit mine in June 2007. Environmental approval (required for initial start-up in the contract area) was granted in September 2007, financing was arranged in early 2008 and the mine was opened the following year. The total capital and working capital cost of the mine was ca.\$40.0m. Mined ore is hauled 2km to the leach pad and the company’s processing facilities (see below).



Source: Anglo Asian Mining

Prodigious cashflow AND bigger “system” potential

AAZ opened its second mine at Gosha

AAZ received approval for its second mine at Gosha in May 2012 after adit sampling and ore grade comparisons with Soviet data confirmed economic mineralisation. Like Gedabek, the contract area at Gosha extends to 300 sq. km, although production from the narrow vein underground mine has been on a far smaller scale.

Gosha underground mine entrance



Source: Anglo Asian Mining

A small, profitable gold mine

There are two mineralised trends perpendicular to each other at Gosha. When production began in 1Q'14, the company worked from a non-JORC compliant gold resource estimate of ca.40,000 oz based on one trend, which was produced by SRK Consulting. The strategy for Gosha was to develop a small, profitable mine with gold production of about 10,000 oz p.a. for around five years.

The first of the two mineralised trends at Gosha is close to being mined out

The first trend has been largely mined out and the potential of the second trend is being evaluated (see below). A new discovery of polymetallic mineralisation was made at the Asrikchay target area, located 7km north of the current mine. A significant polymetallic drill-hole intersection was found with 4.1 g/t, 112.2 g/t silver and 3.1% copper and further work is ongoing to assess the deposits.

Gadir is a low sulphidation epithermal deposit...

In 2012, AAZ began developing the Gadir underground mine with drilling programmes, geological mapping and soil geochemistry. Drilling identified a series of vertically stacked, shallow-dipping mineralised lenses within a 50 x 100 metre area and a height of about 150 metres. Gadir has been interpreted as being a low sulphidation (LS) epithermal-type deposit.

...the mine was opened in June 2015

A resource estimate of 797,000 tonnes at 4.08 g/t Au (Inferred) was calculated by the consulting firm, CAE. Work began on constructing of a 650-metre decline in 2014 and the first ore was mined in June 2015.

Working in Gadir underground mine



Source: Anglo Asian Mining

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Ugur deposit is north west of the Gedabek open pit

The opening of Gadir was followed by the rapid development of the Ugur open pit, which is situated 5km north west of the Gedabek open pit and 3.5km from the Gedabek processing facilities. The discovery was based on stream sediment sampling with follow-up analysis of 500 chip samples taken from outcrop. Further exploration during 2016 saw drilling focused on a 350 x 250 metre area with all drill holes intercepting oxide gold and silver mineralisation (with no copper). The results of the second phase of drilling confirmed a gold-rich oxide zone, which went deeper (approximately 60 metres) than previously expected.

Developing the Ugur deposit



Source: Anglo Asian Mining

Production at Ugur commenced in 2017

The temporary cessation of mining at Gedabek open pit and Gadir (see below) allowed heavy equipment for earth moving and road building to be redeployed to accelerate the commissioning of the shallow open pit at Ugur. The company succeeded in its ambitious plan to publish a JORC resource estimate by 3Q'17 and commence mining before the end of 2017. The time between the first exploration drill hole and the extraction of ore from the Ugur open pit was just over one year – often the timeline from discovery to permitting to commissioning is a 5-10-year process for the industry.

Production outlook to 2025

We expect mine production of more than 80,000 GEOs in 2019 and 2020

AAZ’s production guidance for 2019 is 82,000-86,000 GEOs (gold equivalent ounces), compared with 2018 production of 83,736 oz on guidance of 78,000-84,000 GEOs. The 2019 production guidance is based on a gold price of \$1,250/oz, silver \$15/oz and copper \$6,100/t. We expect another year of more than 80,000 GEOs in 2020. The company mined 72,798 oz of gold in 2018 and we are estimating a small dip in production to 68,000 oz in 2019 (due to a “managed” reduction at Ugur) followed by 72,000 oz in 2020.

Strategic review of Gedabek and Gadir during 2017-18

AAZ completed a strategic review to optimise the medium-to-long term production at the main open pit mine at Gedabek and the nearby underground mine at Gadir in 2017-18. It necessitated the temporary suspension of mining at these sites while exploration work was carried out to better delineate the resources. The strategic review was facilitated by:

- ▶ the commissioning of the nearby high-grade gold deposit at Ugur; and
- ▶ the in-line configuration of the flotation and agitation leaching plants to process part of the 1.1m tonne stockpile of high copper content ore.

Drilling at Gedabek and Gadir enabled new resources/reserves estimates

Between February and December 2017, the company completed approximately 15,000 metres of drilling at the Gedabek open pit and 5,000 metres of drilling at Gadir, subsequently leading to the publication of JORC resources/reserve estimates for both deposits.

The estimate for Gedabek open pit showed 343,000 oz of Proved and Probable gold reserves at a grade of 0.9 g/t. Our financial model currently assumes that AAZ mines these reserves by the end of 2025 and that there is no further production. This is conservative because:

- ▶ the resource estimate showed 986,000 oz of gold of which 796,000 oz was in the “Measured & Indicated” categories as shown in the table below;
- ▶ when the gold production commenced at Gedabek in 2009, the mine plan at the time only extended for six years;
- ▶ the pushback of the backwall of the Gedabek open pit is exposing additional ore in the floor of the open pit; and
- ▶ we are not taking account of the potential for additional production from an underground mine beneath the existing open pit (see next section).

Gedabek open pit – Mineral Resources & Reserves

| | Tonnage mt | Gold k oz | Gold g/t | Silver k oz | Silver g/t | Copper kt | Copper % |
|------------------------|-------------|------------|------------|--------------|------------|-------------|------------|
| Measured | 18.0 | 532 | 0.9 | 4,800 | 8.3 | 38.0 | 0.2 |
| Indicated | 11.1 | 264 | 0.7 | 2,011 | 5.6 | 15.7 | 0.1 |
| M&I | 29.1 | 796 | 0.9 | 6,811 | 7.3 | 53.7 | 0.2 |
| Inferred | 8.5 | 189 | 0.7 | 1,361 | 5.0 | 9.7 | 0.1 |
| Total resources | 37.6 | 986 | 0.8 | 8,172 | 6.8 | 63.4 | 0.2 |
| Proved | 10.9 | 311 | 0.9 | 3,084 | 8.8 | 31.9 | 0.3 |
| Probable | 1.2 | 32 | 0.8 | 373 | 9.5 | 4.1 | 0.3 |
| Total reserves | 12.1 | 343 | 0.9 | 3,457 | 8.9 | 36.0 | 0.3 |

Source: Hardman & Co Research

Prodigious cashflow AND bigger “system” potential

Like the Gedabek open pit, the resources estimate for Gadir was a multiple of reserves

The resources/reserves estimate for Gadir, published in March 2019, showed Proved and Probable gold reserves of 70,000 oz at a relatively high grade of 2.73 g/t. Once again, the estimate of total resources was far higher at 172,400 oz at 2.29 g/t, of which 145,200 oz was in the Measured & Indicated categories.

| Gadir – Mineral Resources & Reserves | | | | | | | |
|--------------------------------------|--------------|--------------|-------------|--------------|--------------|--------------|-------------|
| | Tonnage mt | Gold k oz | Gold g/t | Silver k oz | Silver g/t | Copper t | Copper % |
| Measured | 0.540 | 64.2 | 3.70 | 303.6 | 17.49 | 1.566 | 0.29 |
| Indicated | 1.235 | 81.0 | 2.04 | 432.4 | 10.89 | 1.729 | 0.14 |
| M&I | 1.775 | 145.2 | 2.54 | 736.1 | 12.90 | 3,295 | 0.21 |
| Inferred | 0.571 | 27.2 | 1.48 | 104.4 | 5.68 | 571 | 0.10 |
| Total resources | 2.347 | 172.4 | 2.29 | 840.4 | 11.14 | 3,866 | 0.19 |
| Proved | 0.222 | 25 | 2.81 | 101 | 14.13 | 0.535 | 0.24 |
| Probable | 0.575 | 45 | 2.41 | 203 | 10.99 | 0.852 | 0.15 |
| Total reserves | 0.797 | 70 | 2.73 | 304 | 11.86 | 1,387 | 0.17 |

Source: Hardman & Co Research

Below is the resources/reserves estimate for the Ugur mine, which contains no copper and was published in August 2017.

| Ugur – Mineral Resources & Reserves | | | | | |
|-------------------------------------|-------------|------------|------------|--------------|------------|
| | Tonnage mt | Gold k oz | Gold g/t | Silver k oz | Silver g/t |
| Measured | 4.12 | 164 | 1.2 | 841 | 6.3 |
| Indicated | 0.34 | 8 | 0.8 | 44 | 3.9 |
| M&I | 4.46 | 172 | 1.2 | 884 | 6.2 |
| Inferred | 2.50 | 27 | 0.3 | 165 | 2.1 |
| Total resources | 6.96 | 199 | 0.9 | 1,049 | 4.7 |
| Proved | 3.37 | 142 | 1.3 | 779 | 7.2 |
| Probable | 0.22 | 5 | 0.8 | 29 | 4.1 |
| Total reserves | 3.59 | 147 | 1.3 | 808 | 7.0 |

Source: Hardman & Co Research

Total gold proved and probable reserves were 560,000 at the time of the publication of the Gedabek, Gadir and Ugur reports

The combined resources/reserves estimate for the three deposits is shown below. It takes no account of the difference in publication dates and depletion by production, which we discuss below, nor does it include anything for the Gosha underground mine. In terms of gold, the table shows a combined Proved and Probable reserves of 560,000 oz.

| Total AAZ – Mineral Resources & Reserves | | | |
|--|----------------|-----------------|---------------|
| | Gold k oz | Silver k oz | Copper kt |
| Measured | 760.2 | 5,944.6 | 39.566 |
| Indicated | 353.0 | 2,487.4 | 17.429 |
| M&I | 1,113.2 | 8,432.0 | 56.995 |
| Inferred | 243.2 | 1,630.4 | 10.271 |
| Total resources | 1,356.4 | 10,062.4 | 67.266 |
| Proved | 478 | 3,964 | 32.434 |
| Probable | 82 | 605 | 4.952 |
| Total reserves | 560 | 4,569 | 37.386 |

Source: Hardman & Co Research

Prodigious cashflow AND bigger “system” potential

Calculating the gold reserves for our production model to 2025

Our production model for AAZ during 2019-25 is based on Proved and Probable reserves at Gedabek, Gadir and Ugur, less our estimate of depletion, i.e. gold already mined at these deposits, since the publication of the reserves estimates plus our estimate of the remaining gold to be mined at the existing Gosha deposit.

Basis for 2019-25 gold production model

| \$m | Oz |
|---------------------------------------|----------------|
| Total of Gedabek, Gadir and Ugur | 560,000 |
| Less: | |
| Est. Gedabek depletion | -8,000 |
| Less: | |
| Est. Gadir depletion | -5,000 |
| Less: | |
| Est. Ugur depletion | -73,000 |
| Add: | |
| Est. Gosha reserves | +8,000 |
| Total gold production in model | 482,000 |

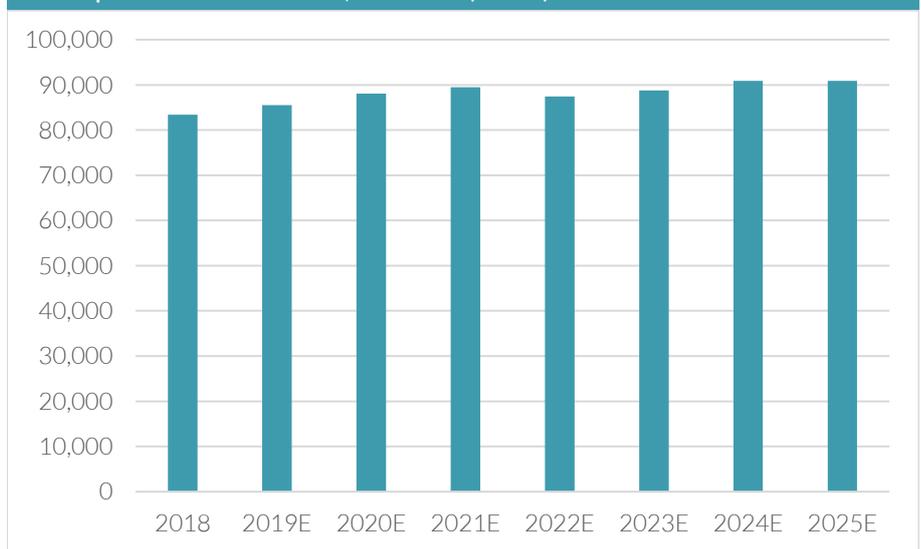
Source: Hardman & Co Research

It's critical to emphasise that, firstly, our model currently excludes 553,200 oz of gold that are classified in Measured & Indicated resources but not in Proved and Probable resources. Secondly, Measured & Indicated resources are frequently the basis of production models for junior mining companies.

We are assuming that aggregate production is managed to provide a relatively stable outlook

At this stage, we are expecting that AAZ manages the four mines so that aggregate production in terms of GEOs is broadly similar each year during the 2019-25 period – as shown in the chart below.

AAZ – production estimates, 2018-25 (GEOs)



Source: Anglo Asian Mining

The balance between production at Gedabek and Ugur is uncertain

There is the possibility of a step-down in AAZ's total production in 2021 if the Ugur deposit is exhausted by the end of 2020. This is uncertain, however, as the Gedabek open pit should be able to pick up much of the slack, obviously depending how hard the latter is worked beforehand.

With sufficient mineral reserves to underpin production until the middle of the next decade, AAZ has time to complete exploration work to plan for longer-term production across the Gedabek area, Gosha and the under-explored Ordubad deposit.

Beyond 2025: a much bigger “system” at Gedabek?

Going underground at Gedabek

While we expect AAZ’s production to continue beyond 2025...

Our assessment of the strategy, recent exploration work, the geology of AAZ’s deposits and the regional geology of the “Tethyan Tectonic Belt” (TTB) lead us to believe that it is highly likely that gold-copper-silver (and possibly zinc) production will continue for many years beyond our current 2025 forecast horizon.

...the potential upside is much greater

Intriguingly, there are two further possibilities, which would have a much greater impact on AAZ’s long-term potential if confirmed by future exploration:

- ▶ Gedabek, Gadir and Ugur are part of a much larger porphyry-epithermal system; and/or
- ▶ the deposits in the Ordubad area are porphyry gold-copper type.

Strategic aims of exploration

In 2018, AAZ defined the strategic aims of its exploration programme as:

- ▶ replacing mined production.
- ▶ extending the current mine life to a minimum of 10 years; and
- ▶ discovering new mineral deposits similar to Ugur, which can be rapidly developed into operating mines with the benefit of the existing infrastructure.

A more aggressive approach

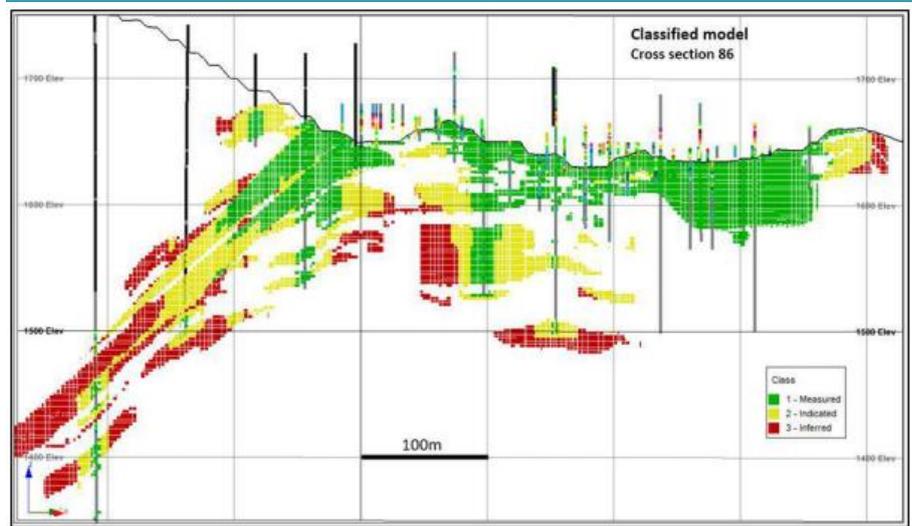
In parallel, the company has adopted a more aggressive approach towards attractive targets in terms of drilling more drill holes that are more densely located within a shorter span of time. The targets for the next phase of drilling at the Gedabek deposit include:

- ▶ down-dip and along strike extension drilling of the mineralisation;
- ▶ accessing the orebody from underground and drilling the down-dip extension potential to the open pit mineralisation; and
- ▶ southerly extension of Cu mineralisation on the periphery of the current open pit.

Decision on an underground mine beneath the Gedabek open pit

Mining of the Gedabek open pit is expected to become uneconomic around 2025, as the strip ratio becomes too high (under the current forecast metal prices and costs). AAZ’s management does not want to delay a decision about an underground mine at Gedabek, so that it comes onstream after the open pit is exhausted – assuming that an underground mine is economically viable. The current resource model for the Gedabek open pit shows how the mineralisation dips below the backwall of the existing open pit.

Gedabek open pit resource model



Source: Anglo Asian Mining

Tunnelling from Gadir underneath the open pit

Since 2017, AAZ has undertaken development tunnelling from Gadir towards a location about 100-120 metres beneath the backwall of the open pit at Gedabek. The purpose of the tunnel was threefold:

- ▶ to determine whether there is sufficient mineralisation to justify an underground mine beneath the Gedabek open pit;
- ▶ to assess the future potential for the Gadir mine; and
- ▶ to explore the geological relationship between Gadir and Gedabek mineralisation and whether they form part of a bigger system.

An underground resource estimate for Gedabek should be forthcoming

From the perspective of an underground mine beneath the open pit, AAZ is hopeful that an underground resource estimate will be forthcoming in due course. Our estimate is that it might take between 18 months and two years. Should exploration work be successful, it is possible that there could be a short transition period when an underground mine works in tandem with the open pit.

The 2018 exploration programme at Gadir provided AAZ with greater confidence in the medium-term potential for the existing underground mine. The continuation of the ore body down-dip was confirmed and results are expected shortly from induced polarisation and ground magnetics testing over 3.7 sq. km.

Airborne geophysical survey...

While Ugur was being fast-tracked into production, exploration work on other targets with initial evidence of mineralisation in the Gedabek contract area (e.g. Bittibulag and Soyudlu) was temporarily suspended. The 2018 exploration programme also saw drilling at the Umid target and sampling at Duzyurd and airborne geophysical survey of the Gedabek area using a Z-Axis Tipper Electromagnetic System (ZTEM). The highlights from the airborne survey were:

- ▶ it covered the entire Gedabek contract area with data covering 3,385 linear kilometres; and
- ▶ the geophysical anomalies and signatures identified 31 new drilling targets, six of which were consistent with porphyry systems.

Prodigious cashflow AND bigger “system” potential

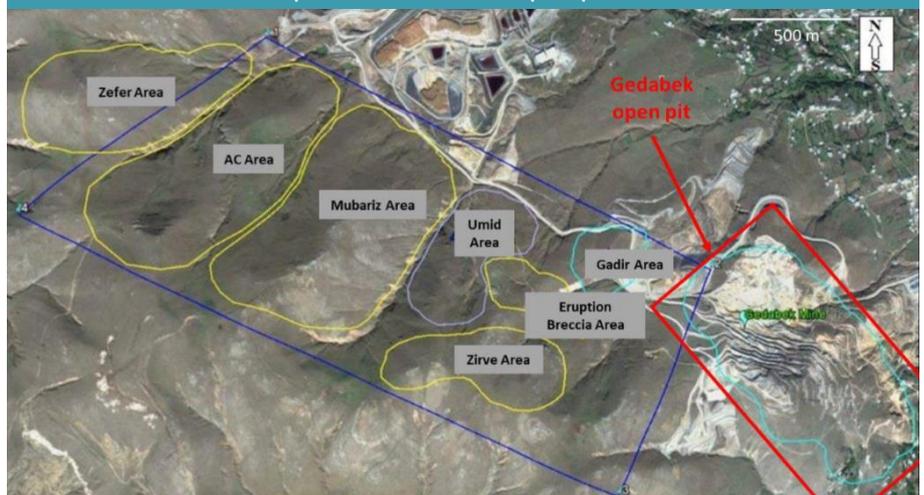
The ZTEM system is suited to identifying targets for porphyry copper-gold and epithermal copper-gold-silver exploration. This, together with the identification of potential porphyry systems, was potentially indicative of the presence of a much larger mineralised system in the Gedabek area, which would clearly be positive for AAZ.

Looking for a bigger system at Gedabek

Are the Gedabek open pit, Ugur and Gadir just the upper portion?

In our opinion, although it is yet to be confirmed, Gedabek, Ugur and Gadir could be part of a much larger porphyry-epithermal mineralisation system, with positive implications for the longer-term exploitation of its mineral potential by AAZ. Indeed, the Gedabek open pit, Ugur, Gadir and other known deposits in the area, several of which are shown in the photograph below, are likely to represent the upper portion of this system, sitting above a deeper porphyry.

Gedabek: location of deposits close to the open pit



Source: Anglo Asian Mining

Formed by tectonic movement and magmatic activity

The Gedabek contract area is located within the large Gedabek-Garadag volcanic-plutonic system. The mineralisation in the Gedabek contract area is characterised by a complex internal structure indicative of repeated tectonic movement and multi-cycle magmatic activity. This led to several stages of mineralisation emplacement, which AAZ is 10 years into extracting.

When AAZ published the revised JORC mineral resource and reserve estimate for the Gedabek open pit in September 2018, it re-classified the Gedabek mineralisation:

Re-classification of Gedabek open pit mineralisation to HS epithermal

From a porphyry-style system to a high-sulphidation (HS) epithermal system.

Based on its exploration work, the company believes that the scale and grade distribution, presence of high-grade vein systems and hydrothermal alteration, e.g. argillic, are more indicative of HS epithermal mineralisation – at least to the depth currently explored – than porphyry mineralisation. Furthermore, epithermal gold deposits typically occur in volcanic arcs, either island arcs or continental arcs, with ages similar to the volcanism. Gedabek and Gadir deposits are located on such an arc.

Gadir is LS epithermal

The maiden resource report for the Gadir underground mine, published in March 2019, classified it as low-sulphidation (LS) epithermal. These HS and LS epithermal types of deposit generally form at relatively shallow depths hosted by mainly volcanic rocks. The two deposit styles (HS and LS) form from fluids of different chemical composition.

Prodigious cashflow AND bigger “system” potential

Don't dismiss porphyry

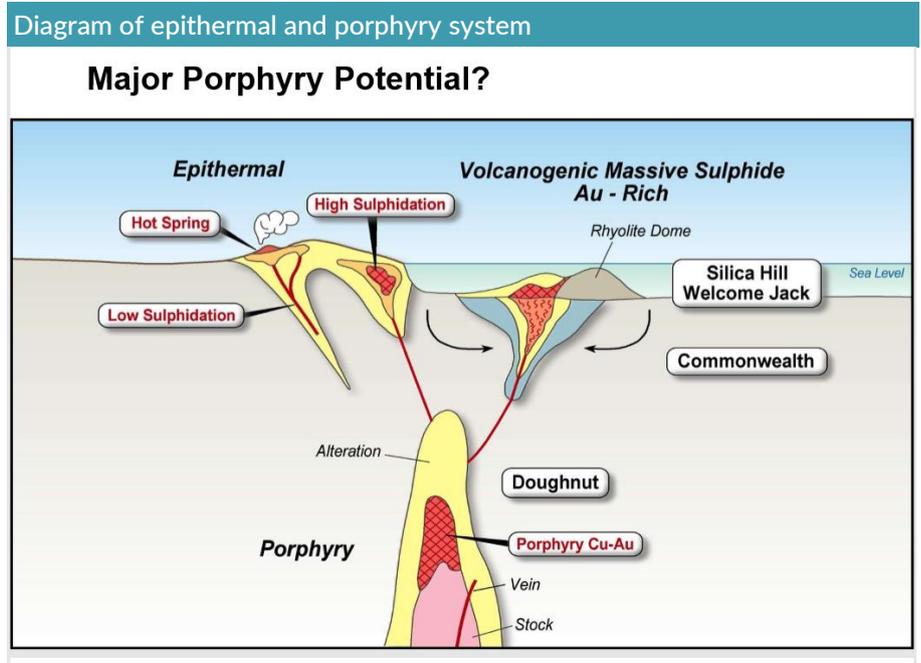
However, there is also evidence of porphyry mineralisation; for example, the six geophysical anomalies consistent with porphyry systems discovered by the airborne geophysical survey of Gedabek last year. The mineral resources report for the open pit documented the widespread presence of rhyolitic porphyry in the ore body.

“The mineralisation is dominantly hosted in the local rhyolitic porphyry (known onsite as the ‘quartz porphyry’ unit), bounded by the volcanics (mainly andesites) in the west and a diorite intrusion to the east.”

Besides gold and copper, there is also evidence of molybdenum mineralisation in the Gedabek area, another characteristic of porphyry.

Are the epithermal and porphyry linked at depth?

In our opinion, the classification of Gedabek open pit as HS-epithermal, the nearby LS epithermal mineralisation at Gadir and evidence of porphyry are likely to be indicative of a much larger mineral system. The HS/LS-epithermal mineralisation is probably the upper part of a system, which is linked at depth with porphyry mineralisation in a way similar to the illustration by Impact Minerals below (ignore references to its deposits).



Source: Impact Minerals

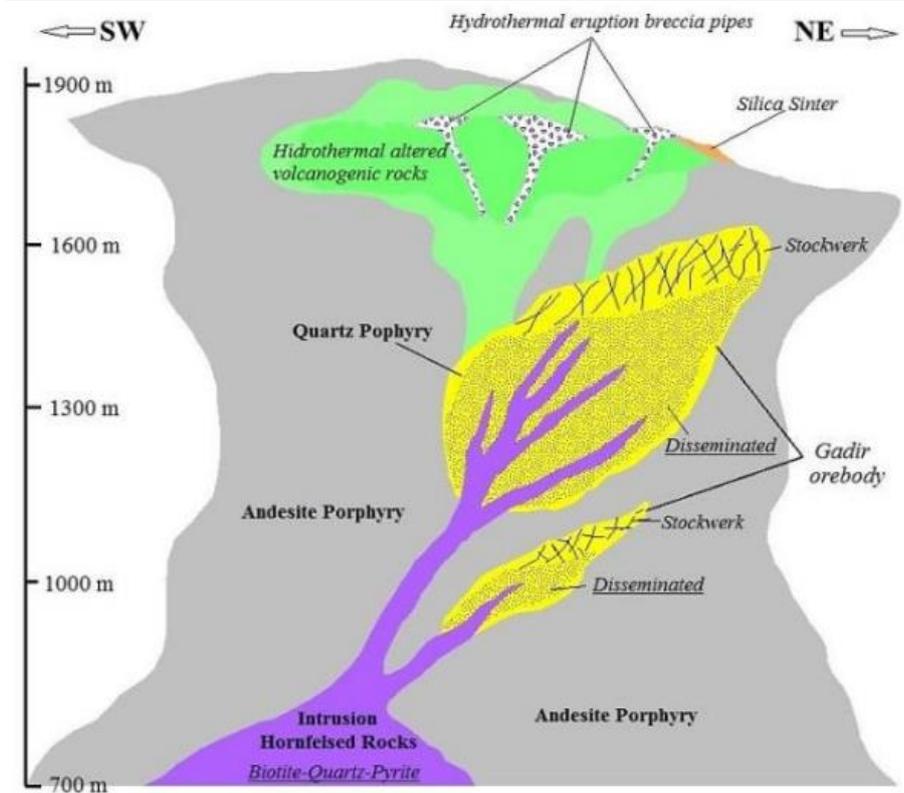
It should have occurred to us earlier; however, we only started to question whether Gedabek and Gadir could be part of a much larger epithermal-porphyry system as we prepared this report.

AAZ management has been thinking along the same lines...

We weren't surprised (with hindsight), but as we combed through the technical reports on AAZ's deposits, we realised that the issue had already been exercising the minds of AAZ's management, notably the Director of Geology & Mining, Stephen Westhead. The following comment and related diagram from the full resources report for Gadir were left out of the RNS announcement in March 2019.

“The discovery of Gadir and it being classified as LS-type, in addition to the other known mineral occurrences and deposits of varying mineral content in the Gedabek Contract Area, lends support to the existence of a large regional mineral-forming system.”

Idealised cross-section of the geological model through the Gadir deposit



Source: Anglo Asian Mining

...the airborne geophysical survey was partly related to this issue

It also turned out that one reason for the extensive airborne geophysical survey was to assess whether the deposits in the Gedabek contract area are linked at depth. Indeed, the findings of six potential indications of porphyry and a deep target at more than 500 metres, which is overlaid by a much shallower target, suggest that further exploration work to assess the presence of a bigger “system” is certainly justified.

If there's porphyry, how deep is it?

If there is related porphyry mineralisation at Gedabek, the key question will be how deep is it? If it's too deep to be mined, its presence is obviously irrelevant. However, the company believes that it's possible that it could be closer to the surface in the northern part of the contract area. We will find out in due course.

Gedabek – regional and continental geology

To assess the possibility that Gedabek is part of a much larger porphyry-epithermal system, it's also important to consider its location in terms of the broader regional and continental geology.

Located on the Tethyan Tectonic Belt, which stretches across two continents

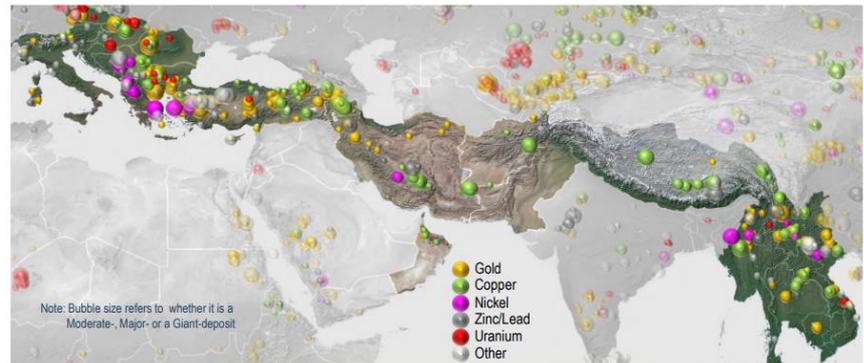
Gedabek, Gosha and Ordubad are located on the “Tethyan Tectonic Belt” (TTB), also known as the “Tethyan Magmatic Arc” or “Tethyan Metallogenic Belt”, which was formed from the collision of the African, Arabian and Indian tectonic plates. The TTB extends across two continents from Corsica and Italy in western Europe, through central and south eastern Europe, Azerbaijan, Iran, Pakistan, through the Himalayan region and down into Southeast Asia. Besides Azerbaijan, the TTB incorporates all, or part (e.g. China and India), of 33 countries.

Prodigious cashflow AND bigger “system” potential

There are more than 400 significant mineral deposits on the TTB

When investors think of gold and copper mining “hotspots”, their immediate thoughts might turn to Chile, Nevada, Africa, or Australia. There are more than 400 significant mineral deposits along the TTB, around 250 of which were discovered in the past five decades and nearly 70 in the past decade. Almost two thirds of all mineral discoveries in the region are gold and/or copper, which have accounted for more than 80% since 1965. The remainder are mainly nickel or zinc/lead along with a number of uranium deposits.

Discoveries in the Tethyan Tectonic Belt: all years



Countries along the Tethyan Belt

| | Au | Cu | Ni | Zn/Pb | U | Other | TOTAL |
|-------|-----------|----------|---------|----------|----------|-------|-------|
| No. | 154 | 124 | 28 | 44 | 22 | 53 | 425 |
| Metal | 440.6 Moz | 208.5 Mt | 18.5 Mt | 130.6 Mt | 462 kt U | xx | |

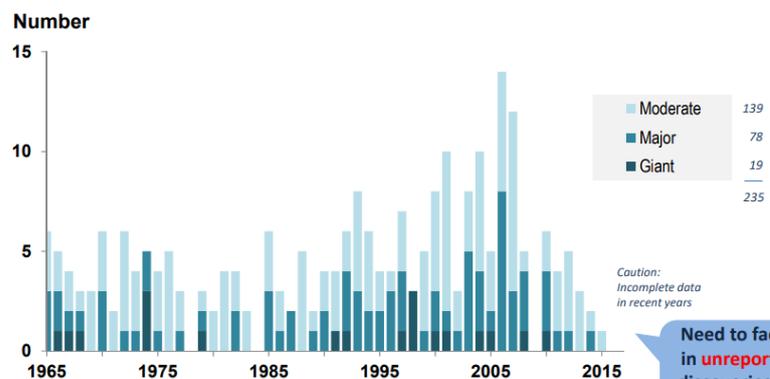
5.7% of all deposits in the World

19 “Giant” discoveries between 1965 and 2015

During the period between 1965 and 2015, MinEx Consulting estimates that 19 mineral discoveries on the TTB could be classed as “Giant” and a further 78 as “Major”. The classification for “Giant” is more than 6m oz of gold, 5m tonnes of copper, 1m tonnes of nickel, etc.

Tethyan Tectonic Belt: discoveries by size 1965-2015

Number of discoveries by size Mineral discoveries in Tethyan Belt Countries: 1965-2015



Note: Excludes Bulk Mineral discoveries (ie bauxite, coal and iron ore)
 “Moderate” >100koz Au, >10kt Ni, >100kt Cu equiv, 250kt Zn+Pb, >5kt U₃O₈
 “Major” >1Moz Au, >100kt Ni, >1Mt Cu equiv, 2.5Mt Zn+Pb, >25kt U₃O₈
 “Giant” >6Moz Au, >1Mt Ni, >5Mt Cu equiv, 12Mt Zn+Pb, >125kt U₃O₈

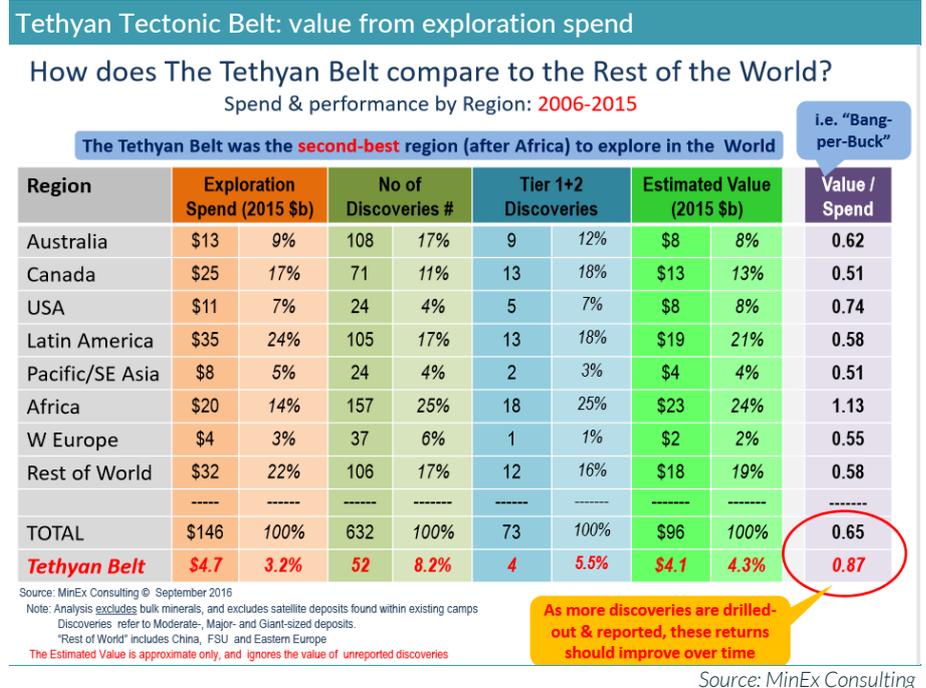
Source: MinEx Consulting © September 2016

Need to factor in unreported discoveries for recent years

Prodigious cashflow AND bigger “system” potential

MinEx classifies the TTB as the second-best region for mining exploration

Based on the 10 years from 2006-15, MinEx estimated that the Tethyan Belt was the second-best region in the world for mining exploration based on the ratio of exploration spend versus estimated value of deposits.



Source: MinEx Consulting

In his paper, *Tectonic, magmatic and metallogenic evolution of the Tethyan orogen: From subduction to collision*, Jeremy P. Richards, from the University of Alberta, notes that copper-molybdenum-gold porphyry deposits are the most common on the TTB:

“This paper reviews the tectonic, magmatic, and metallogenic history of the Tethyan orogen from the Carpathians to Indochina. Focus is placed on the formation of porphyry Cu±Mo±Au deposits, as being the most characteristic mineral deposit type formed during both subduction and collisional processes in this region...They are found throughout the orogen, but some sections are particularly well-endowed, including the Carpathians–Balkans–Rhodopes, eastern Turkey–Lesser Caucasus–NW Iran, SE Iran–SW Pakistan, southern Tibet, and SE Tibet– Indochina.”

There is a cluster of copper-gold porphyry and epithermal deposits close to Gedabek

The next diagram shows major copper and gold deposits, both porphyry and epithermal, are clustered nearby to Gedabek along the TTB in the Turkey-Azerbaijan-Iran region. These include the well-known Sungun copper mine close to the Iran/Azerbaijan border, which has an estimated 995m tonnes of copper ore in the same regional area as the Ordubad contract area.

Epithermal and porphyry copper-gold deposits close to AAZ deposits


Source: Anglo Asian Mining

Ordubad – another potential porphyry system

Six of Ordubad's deposits had resource classifications in the Soviet era

The Ordubad deposit covers an area of 462 sq. km and is located in the south east corner of the Nakhchivan Autonomous Republic of Azerbaijan. There are currently 15 known deposits at the Ordubad site, six of which had resource estimates that were classified during the Soviet era.

Ordubad was AAZ's original focus...

It was the Ordubad deposit, not Gedabek, which was AAZ's original focus for developing a mine during the mid-2000s. A drilling programme, completed in March 2007, confirmed gold grades in veins at the Piyazbashi target, which were approximately equivalent to data compiled during the Soviet era.

...before it shifted to Gedabek

The company's mining consultants, SRK Consulting, subsequently advised that Gedabek had the greater potential and should be prioritised in terms of producing a feasibility study. Fast forward nearly a decade and the company has undertaken road clearing to reach exploration adits, while initial results from trenching confirmed gold and copper mineralisation both on the surface and underground.

Exploration is ramping up

AAZ believes that there may be multiple porphyry mineralised systems at Ordubad and, since last year, has been ramping up exploration work to identify porphyry-style copper-gold mineralisation and assess the relationship between known gold veins. In 2019, \$1.8m has been budgeted for the exploration programme. Part of the work involves cooperation with the research institute of the UK's Natural History Museum, which is cooperating with the efforts to identify porphyry mineralisation.

Five deposits could be part of a larger system

Since 2017, the focus of the exploration work has been the Shakardara deposit in the central area of the Ordubad contract area. Gold was first discovered there during 1956-58, when Soviet geologists estimated a resource of 2.6m tonnes of ore containing 3.7g/t of gold. The company has concluded from work at two other targets, Piyazbashi and Agyurt, that they are relatively small as standalone deposits. However, the key is how they fit into a potentially larger system, which includes Shakardara, as well as two others, Misdag and Diakchay. All five of these deposits are within a radius of 5km, and drilling at Shakardara and the surrounding areas, including the deposits of Dirnis and Keleki, will take place later this year.

Processing capability supports mine production

AAZ has successfully supported the growth in mine production, and significant changes in ore composition, by a programme of continuous investment to expand and upgrade its processing capacity and infrastructure. With intense attention to detail, the ability to process ore has been methodically expanded, and periodically reconfigured in a microcosm of AAZ’s broader strategic and operational approach to growing the business. The company currently operates four main processes:

- ▶ heap leaching of crushed and uncrushed ore followed by ADR;
- ▶ SART;
- ▶ agitation leaching; and
- ▶ flotation.

These processes allow AAZ to blend ores, e.g. oxide, Ugur ore and transition ore, from the mines to optimise as feedstock for the processing plants. The throughput is monitored and can be altered every four hours.

The starting point was heap leach

The leach pad, Barren Leach Solution (BLS) pond and Pregnant Leach Solution (PLS) pond were completed in January 2009. The Adsorption, Desorption, Refinery (ADR) were completed in mid-February 2009. With the commissioning of the Gedabek open pit mine in May 2009, gold doré was produced through a simple two-step process of heap leaching crushed and uncrushed (Run of Mine) ore, followed by an Adsorption Desorption Recovery (ADR) plant.

Overcoming teething problems

AAZ initially experienced teething problems with the level of ore on the leach pad and the consistency of ore from secondary and tertiary crushing equipment. In October 2009, a new manager with expertise in heap leach operations was appointed to oversee Gedabek on a day-to-day basis. This was followed by the installation of a new stacker system and cone crushers, which helped to maintain consistent levels of ore to the leach pad. A new elution column and an extra bank of electrowinning cells were subsequently added to improve plant availability.

Next up – the SART plant

To extract the copper and silver by-products from Gedabek’s polymetallic ore, the SART plant was completed in September 2010 and the first copper and silver sales were made in 1Q’11. The feedstock for the SART plant is cyanide solution following gold absorption in the ADR plant. Using reagents, the pH of the solution is changed and copper is recovered from the solution in the form of a copper sulphide concentrate also containing small amounts of silver. The concentrate typically contains 60%-70% copper and over 4,000 g/t of silver. Like the heap leach-ADR process, AAZ’s management initially faced challenges with operating the SART plant. To combat high moisture content, new filtration and drier systems were installed.

Followed by the big one – agitation leaching

In June 2011, AAZ began work on a feasibility study for a major investment in an agitation leaching plant to improve gold recovery rates. Recovery rates typically average about 70% from heap leaching compared with at least 90% from agitation leaching. Besides enhancing gold recovery, the motivation also stemmed from the change in the density and structure of the mined ore, which was slowing down the leach rate. This partly related to ore mined in the transitional ore zone, i.e. where the shallower oxide ore mixes with deeper sulphide ore.

Prodigious cashflow AND bigger “system” potential

For a cool \$45m

The budgeted cost of the agitation leach plant including related infrastructure was \$52m, although the eventual spend was \$45m. The plant was commissioned in June 2013 and is designed primarily for high grade (more than 1.5g/t of gold) ore, although it also treats spent ore from the heap leach process. With the commissioning of the agitation leach plant, the heap leaching process focused on ore grades with a gold content of less than 1.5g/t.

More teething problems

In the agitation leaching process, crushed ore is put through a grinding circuit and the finely ground ore stirred in tanks containing cyanide solution, which dissolves the metal. The resulting slurry is transferred to a resin-in-pulp (RIP) plant in which gold is selectively adsorbed on small resin beads. After separation, a second solution strips the gold, which is recovered by electrolysis and smelted into doré.

Agitation leaching plant



Source: Anglo Asian Mining

A flotation plant is the most recent investment in processing capability

The ability to treat (copper-rich) tailings from the agitation leaching plant – essentially using an in-line configuration of agitation leaching followed by tailings – and the shift to mined ore with a higher copper-content, led to the construction of a \$3.5m flotation plant. Feedstock are mixed with water creating a slurry into which small air bubbles are introduced. Sulphide minerals attach to the air bubbles and form a froth, which is dewatered into concentrate.

Flotation plant



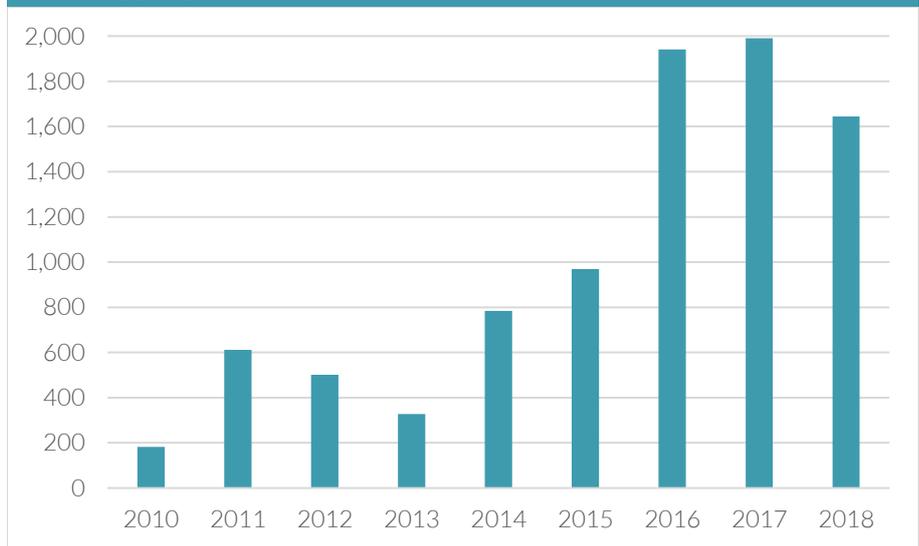
Source: Anglo Asian Mining

Prodigious cashflow AND bigger “system” potential

Copper production doubled in 2016

The first shipments of copper (from concentrate) were made in November 2015. The commissioning of the flotation plant enabled AAZ to double copper production to 1,941 tonnes in 2016 versus 969 tonnes in 2015.

AAZ – copper production 2010-18



Source: Anglo Asian Mining

Running an in-line configuration of flotation-agitation leaching permitted the temporary mining suspension

The flotation plant proved vital during the temporary suspension of mining at the Gedabek open pit and Gadir when AAZ needed to process part of its substantial stockpile of higher copper-content sulphide ore. During the suspension, AAZ reversed the configuration of agitation leaching followed by flotation. By initially treating the stockpiled ore through the flotation plant, the copper was removed prior to agitation leaching to extract the gold and silver. In this way, the company increased copper recovery and reduced costs as copper was consuming cyanide when the leaching preceded flotation.

Flotation and agitation leaching can now operate independently

When mining resumed in early 2018, the flotation-agitation leaching configuration continued until the commissioning of a second crusher plant. Removing this bottleneck allowed the flotation and agitation leaching facilities to operate independently from separate sources of feedstock.

Copper production was reduced in 2018 as flotation plant was on care and maintenance in 1H'18 due to limited feedstock. Agitation leaching plant was processing Ugur ore (no copper). A new jaw crusher for the flotation plant commenced operation in July 2018, and led to a significant increase in copper production in 2H'18. The flotation plant processing copper rich ore was operated independently.

As the Gedabek site expanded, the investment in infrastructure has needed to keep pace.

Connection to the Azeri national grid in 2016

In November 2016, the Gedabek site was connected to the electrical grid in Azerbaijan via 12km of overhead power cable, seven electrical transformers and an electrical substation. The payback of the \$2.1m capital cost was just over one year as AAZ saved \$2.0m p.a. on electric power through reducing diesel consumption for generators. Cost savings aside, this also meant that the expansion of the site was no longer constrained by a lack of electric power. Furthermore, the diesel generators are available to act as back-up should they be required.

Gedabek was connected to the national grid in 2016



Source: Anglo Asian Mining

Upgrading water treatment

During 2016-17, AAZ invested \$1.7m to upgrade its water treatment capability.

A \$1.4m reverse osmosis water purification plant was brought onstream in 3Q'17 to produce potable water, which can be discharged into the Shamkir river. This helped to improve the water balance in the Gedabek area after the Gedabek village had experienced water shortages for several years. The purification plant also produces a concentrate solution, which can be further processed to recover contained metals. A waste evaporation equipment was installed at the tailings dam. This reduced the amount of water in the dam, thereby increasing its capacity.

Expanding the tailings dam

A purpose-built tailings dam with an initial capacity of 3.2m cubic metres is located around 7km from the centre of Gedabek site. Gravity-fed pipes leading to the dam are located in fully-lined trenches, and downstream from the dam is a reed bed biological treatment system. The latter purifies any seepage before it can discharge into the Shamkir river. In 2017, the tailings dam wall was raised by 12 metres in two phases to increase capacity.

Close ties with Azeri establishment

Ties to the Government of Azerbaijan

AAZ is the only listed mining company in Azerbaijan and has a history of close cooperation with the Government of Azerbaijan (GoA), as well as links to the US establishment. Indeed, the President of Azerbaijan, Ilham Aliyev, attended the opening ceremony for the Gedabek open pit mine on 26 May 2009 and the GoA’s Ministry of Emergencies provided helicopters for AAZ’s recent airborne geophysical survey of the Gedabek area. The International Bank of Azerbaijan (IBA), which is majority-owned by the Government of Azerbaijan, provided AAZ with a \$43.9m loan to finance the initial construction of the Gedabek mine.

The company’s President and CEO, Reza Vaziri, is founder and life chairman of the US Azerbaijan Chamber of Commerce. Vaziri was the head of Iran’s foreign relations office prior to relocating to the US. The Chairman, Khosrow Zamani, joined the board in his current role in July 2007 and was immediately successful in helping AAZ to raise the funds to develop the Gedabek project. He was director of Europe & Central Asia for the International Finance Corporation, the World Bank’s private-sector lending arm.

Non-executive director, John Sununu, was George H. W. Bush’s Chief of Staff and CFO, Bill Morgan, previously worked as regional financial officer for Kinross in Russia and was CFO of AIM-listed gold miner, Hambledon Mining. Stephen Westhead, Director of Geology and Mining, was formerly Technical Advisor to the M.D. of Polyus Gold’s main business unit.

Azerbaijan is a resources-friendly jurisdiction

Azerbaijan is now a long-established destination for investment by western resources companies, although, thus far, primarily in its offshore oil and gas industry in the Caspian Sea. At least 15 international oil companies are working in the country. BP is the country’s largest foreign investor, having been operating there since 1992. It operates the Shah Deniz gas and condensate field which is located 70km southeast of Baku. Phase 2 of Shah Deniz was brought onstream on 30 June 2018 at a cost of \$28bn.

AAZ’s production sharing agreement (see above) is based on the contracts negotiated between the Government of Azerbaijan and foreign oil companies. From a much smaller starting point in the mining sector, AAZ has successfully executed on a plan which has seen it bring four gold mines onstream in the last decade. The upside from exploiting the potentially large copper-gold mineral systems at Gedabek and Ordubak could be considerable.

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