

NEWS RELEASE

Golden Star Resources Reports on 2020 Preliminary Production Results and Guidance for 2021 Delivering on Increased 2020 Production Guidance at Wassa

Toronto, ON – January 20, 2021 - Golden Star Resources Ltd. (NYSE American: GSS; TSX: GSC; GSE: GSR) (“Golden Star” or the “Company”) is pleased to announce its preliminary production performance for the fourth quarter of 2020 (“Q4 2020”) and full year 2020 (“FY 2020”), and its guidance for 2021 (“FY 2021”). The Company anticipates releasing its audited 2020 financial results on February 24, 2021, after market close. All references herein to “\$” are to United States dollars.

HIGHLIGHTS:

- Q4 2020 production from continuing operations totalled 41 thousand ounces (“koz”). FY 2020 production from continuing operations totalled 168koz, representing a 7% increase on 2019 performance.
- Delivered on the 165-170koz revised guidance range for Wassa, and successfully exceeded the original FY 2020 guidance for Wassa of 155-165koz.
- Underground mined grades improved to 3.4 grams per tonne (“g/t”) during Q4 2020, up 20% on the 2.8g/t realized in the third quarter of 2020 (“Q3 2020”).
- The mining rate decreased slightly to 4,175 tonnes per day (“tpd”) during Q4 2020 (4,960tpd in Q3 2020), which was offset by the higher realized mined grades. The focus of the mining activities shifted to an acceleration of underground development following the return of the expatriate jumbo operators to site.
- During FY 2020, mining rates averaged 4,469tpd and processing rates exceeded 5,500tpd with the additional processing of incremental low-grade stockpile material.
- Golden Star ended FY 2020 with \$61 million (“m”) of cash. Net debt decreased by \$5m during the quarter to total \$45m.
- FY 2021 production guidance of 165-175koz builds on the progress achieved in 2020 and reflects the focus on investment in future production growth.
- The all-in sustaining costs (“AISC”) guidance of \$1,000-1,075 per ounce (“/oz”) reflects an increase in sustaining capital associated with the planned step up in drilling and development. Overall capital expenditure is expected to total \$45-50m.
- The FY 2021 exploration budget is being increased to \$15m with a view to accelerating the systematic testing of the numerous in-mine, near mine and regional exploration targets.
- Work on the preliminary economic assessment (“PEA”) on the expansion of the Wassa mine into the southern extensions is nearing completion; the study is expected to be released in conjunction with the updated mineral reserve and resource estimate for Wassa around the time of the FY 2020 financial results.

Table 1: Preliminary Q4 2020 and FY 2020 Production Data

(koz)	Quarterly Production					Full Year Production		
	Q4 2020	Q3 2020	% change QoQ	Q4 2019	% change YoY	FY 2020	FY 2019	% change YoY
Production – Wassa	41	42	(2%)	41	-	168	156	7%
Production – Consolidated ¹	41	48	(15%)	53	(23%)	190	204	(7%)
Gold sales – Wassa	44	41	7%	42	4%	168	156	7%
Gold Sales – Consolidated ¹	44	48	(8%)	53	(18%)	189	204	(7%)

Notes:

1. Includes Prestea operation for the nine months to the sale completion on September 30, 2020; now classified as a discontinued operation.

Andrew Wray, President and Chief Executive Officer of Golden Star, commented:

“In what was a transformational year for Golden Star, the operational performance of Wassa stood out with the delivery of our improved production guidance range despite the numerous challenges that have arisen as a result of the pandemic. The strong cash flow generation from the asset, combined with the sale of Bogoso-Prestea and the refinancing of the Macquarie loan facility, marked a significant improvement in our financial position. In turn, this enabled us to invest in key infrastructure necessary for the long-term growth of Wassa, including electrical upgrades, an upgraded pump station and the paste fill plant. The latter was delivered below budget and is expected to be operational during Q1 2021, following a slight delay due to the re-engineering of a component during the commissioning phase.

During FY 2021, we expect to see similar grades at Wassa as in 2020 with a small increase in mining rates and plan to continue to process low grade stockpiles throughout the year. On that basis, production guidance is set at 165-175koz with costs expected to remain in line with recent performance, meaning that the consolidated costs have decreased following the sale of Bogoso-Prestea.

With the ongoing production delivery at Wassa we intend to maintain our level of capital spend in 2021, with the focus turning to increasing development and drilling activities in order to support further volume increases which are anticipated in turn to provide production growth and enhanced cash flow generation. We will share more detail on this growth opportunity in the PEA which we expect to complete in parallel with our reserve and resource update during Q1 2021.

With our improved financial position, I am also pleased that we are able to increase our exploration budget to \$15m; the plan is to test both the underground and surface targets that could add supplemental ore feed and the potential for stand-alone targets along the 90km mineralized trend to the south of Wassa.”

FY 2020 RESULTS AND CONFERENCE CALL

Following the release of our FY 2020 financial statements on February 24, 2020, the Company will conduct a conference call and webcast on Thursday, February 25, 2020 at 10:00 am ET.

Toll Free (North America): **+1 888 390 0546**

Toronto Local and International: **+1 416 764 8688**

Toll Free (UK): **0800 652 2435**

Conference ID: **34205106**

Webcast: https://produceredition.webcasts.com/starthere.jsp?ei=1421060&tp_key=082312cdc3

Following the conference call, a recording will be available on the Company’s website at: www.gsr.com

WASSA PRELIMINARY ECONOMIC ASSESSMENT

A preliminary economic assessment (“PEA”) on the opportunity to expand the Wassa operation to fully utilize the latent plant capacity is nearing completion. This is expected to be released in conjunction with the updated mineral reserve and resource estimate in Q1 2021, around the time of our FY 2020 financial results. This will provide a single, comprehensive, technical report that describes the reserve mine plan and the potential expansion into the southern extensions of the Wassa ore body.

2020 OPERATIONAL PERFORMANCE - WASSA MINE

Table 2: Wassa - Preliminary Q4 2020 and FY 2020 Operational Data

	Q4 2020	Q3 2020	QoQ % change	Q4 2019	YoY % change	FY 2020	FY 2019	YoY % change
Tonnes mined (kt)	384	456	(16%)	376	2%	1,636	1,422	15%
Underground mining rate (tpd)	4,175	4,960	(16%)	4,087	2%	4,469	3,895	15%
Underground grade (g/t)	3.4	2.8	21%	3.8	(11%)	3.1	3.6	(12%)
Tonnes milled (kt)	494	554	(11%)	389	27%	2,011	1,548	30%
Head grade (g/t)	2.8	2.4	16%	3.5	(20%)	2.7	3.3	(17%)
Recovery rate (%)	95%	95%	-	95%	-	95%	96%	(1%)
Production (koz)	41	42	(2%)	41	-	168	156	7%

Grade. The underground mine delivered grades of 3.4g/t in Q4 2020, 21% higher than achieved in Q3 2020 as the full complement of jumbo operators were able to return to site during the quarter and the resulting increase in the development rates enabled a normalization of the blend of higher and lower ore grade mining areas.

Mining rates. As mining transitioned into higher grade areas, mining rates were reduced to allow for a prioritization of development. As a result, the Wassa underground mining rate reduced to 4,175tpd during Q4 2020, from a record 4,960tpd in Q3 2020. During FY 2020, the mining rate averaged 4,469tpd. The flexibility of mining operations allowed for the adjustment of mining rates during FY 2020 which enabled the operation to deliver consistent quarterly production volumes, despite operational challenges caused by the COVID-19 pandemic as well as power supply fluctuations during the second half of 2020.

Recoveries. The performance of the processing plant remained stable with recoveries at 95% during Q4 2020. This was the case throughout FY 2020 despite the introduction of the processing of low-grade stockpiles and accompanying increase in the throughput rate to an average of 5,500tpd.

Production. Wassa produced 41koz of gold in Q4 2020, with 38koz produced by the underground operation and 3koz from the processing of low-grade stockpiles. Production totalled 168koz in FY 2020, comprising of 160koz from the underground operation and 7koz from low grade stockpiles.

EXPLORATION UPDATE

Exploration field activities were ramped up during Q4 2020 following the reduction that occurred earlier in the year as a consequence of the measures to preserve cash adopted by the Company in response to the COVID-19 pandemic. Work during the period included further soil sampling on regional targets and surface drilling at Wassa testing up-dip and down-dip extensions of mineralization.

Wassa Drilling and Surface Exploration

During Q4 2020, two surface drill rigs tested the up and down-dip extensions of the known gold mineralization. One rig focused on testing a 500 meter up-dip gap in the drilling between shallow surface and deeper holes that intersected the high grade shoots we are planning on mining from the existing underground mine. The second rig tested the potential extensions of gold mineralization below the current reserve stopes where mineralization remains open. As of the end of FY 2020, there were three holes drilled to test the up-dip extension of the gold mineralization – these holes intersected extensions of the known gold mineralization up-dip as well as in the footwall. One hole was drilled to test the extensions of the mineralization below the planned stoping areas and was successful in extending the mineralization.

The drill testing of the extensions of the known mineralization will continue into FY 2021 and further success in this program will likely result in an infill drilling program being proposed.

Geological interpretations that were conducted in late 2019 and revised in FY 2020 generated another structural target to the east of the main Wassa deposit. The Wassa deposit is controlled by folding and the closures of these folds are known to host the higher-grade mineralization which is being exploited via underground mining. Re-interpretation of the airborne geophysical data has identified what appears to be another fold closure to the east of the Wassa mine. To follow up on this target, a soil sampling program was conducted over the fold closure and results have shown gold anomalism coincidental with the interpreted fold closure. The FY 2021 exploration programs and budgets include first pass air core drilling over this target.

HBB Regional programs

The Company's implementation of strict COVID 19 protocols and procedures enabled exploration field work to recommence during the latter part of Q3 2020, with five targets (referred to as the HBB targets) being prioritized and sampled. Results received from all five targets tested have confirmed the gold in soil anomalies and helped to better define these targets. During Q4 2020, the targets were visited by Golden Star geologists and initial mapping and prospecting was conducted over the gold in soil anomalies. The mapping and infill soil sampling has been used to budget and plan the follow-up ground geophysics and air core drilling that will be conducted in FY 2021.

2020 PERFORMANCE VS. GUIDANCE

Production

- **Wassa.** The guidance for Wassa was increased from 155-165koz to 165-170koz during the year. Following consistent performance from the underground mine and the additional production generated by the processing of low-grade stockpiles, the operation was able to deliver on the increased guidance range.
- **Consolidated.** Group production, including discontinued operations, totaled 190koz, in line with the 187-192koz guidance range.

Cash operating costs

- **Wassa.** FY 2020 cash operating cost performance is expected to fall in the upper half of the \$620-660/oz guidance range for Wassa, mainly due to the processing of low-grade stockpiles, higher gold transport costs following the use of private charters due to the disruption of commercial flights caused by the COVID-19 pandemic and higher processing volumes. The low-grade stockpile initiative successfully generated incremental production and cash while adding to the unit costs given the lower grade of the material processed.
- **Consolidated.** The consolidated cash operating costs are expected to sit within the \$810-850/oz guidance range.

AISC

- **Wassa.** Throughout FY 2020, the AISC performance tracked towards the upper end of the \$930-990/oz guidance range as a result of the impact of higher gold prices driving higher royalty payments to the Government of Ghana and the restatement of the AISC performance to fully allocate the general and administrative (“G&A”) expense to Wassa following the sale of Bogoso-Prestea. Following an acceleration of sustaining capital in Q4 2020 (as discussed below), the FY 2020 AISC performance is expected to exceed the upper end of the guidance range by approximately 2%.
- **Consolidated.** The consolidated AISC performance (including discontinued operations) is expected to fall within the \$1,100-1,180/oz guidance range.

Capital expenditure

- **Wassa.** The improved financial position of the business and the sustained increase in the gold price allowed the Company to increase its investment in capital during Q4 2020. As a result, Wassa is expected to exceed the revised capital guidance of \$38-42m. The preliminary unaudited results show total capital expenditure of approximately \$46m during FY 2020, in line with our initial guidance.
- **Consolidated.** As a result of the increase in capital investment at Wassa during Q4 2020, we expect to slightly exceed the consolidated capital guidance range of \$47.5-51.5m.

BALANCE SHEET – FY 2020 CLOSING FINANCIAL POSITION

The Company ended FY 2020 with \$61 million of cash and gross debt of \$106 million, for net debt of \$45 million. The cash position increased by \$7m during FY 2020, notwithstanding the significant investment in infrastructure made during the year at Wassa and \$31m of negative free cash flow at the Bogoso-Prestea mine and related transaction costs up until the completion of its sale on September 30, 2020.

Table 3: Preliminary Unaudited Net Debt Position

(US\$m)	Q4-2020 ³	Q3-2020	Q4-2019
Cash	61	48	53
Debt ¹	106	98	107
Net debt	45	50	53

Notes:

1. The debt balances for Q4 2020 are preliminary and are subject to change resulting from adjustments to the amortization of arrangement fees or the present value of the debenture.

FY 2021 PRODUCTION AND COST GUIDANCE

Table 4: FY 2021 Production and Cost Guidance

	2021 Guidance	2020 Guidance
Gold Production (koz) – Wassa	165-175	165-170
Cash Operating cost ¹ (\$/oz)– Wassa	660-700	620-660
AISC¹ (\$/oz)– Wassa	1,000-1,075	930-990

Notes:

1. See "Non-GAAP Financial Measures".

FY 2021 Production Guidance

Wassa is expected to produce between 165-175koz in FY 2021, in line with the FY 2020 production performance which benefitted from an increase in the underground mining rates and 7koz of production from the processing of low-grade stockpiles. The incremental contribution from stockpiles is expected to continue throughout 2021 with a little under 1,000tpd of stockpiled material at a grade of approximately 0.6g/t expected to be processed. This initiative remains subject to gold prices sustaining near current levels.

Mining rates. We expect the FY 2021 mining rates to exceed 4,500tpd, marginally ahead of the 4,469tpd achieved in FY 2020. It is anticipated that the planned investment in 2021 in drilling and development will help unlock further increases in the mining rates in the future.

Grades. Underground mined grades are expected to remain in line with the average grade achieved in FY 2020. The infill drilling program continued to progress during FY 2020 and, as a result, approximately 80% of the FY 2021 mine plan is expected to be comprised of ounces from the measured resource category. We are currently finalising our reserve and resource calculations for FY 2021 and the PEA. As part of this process, we will be reviewing the mine plan and future grade profile at Wassa. This work includes an update of the modifying factors in mine plans for recent stope performance and an optimized cut-off grade.

Cost Guidance

Cash operating costs. The \$660-700/oz cash cost guidance for FY 2021 shows an increase over recent performance due to the planned commissioning of the paste fill plant in Q1 2021. This will add \$5-7/t to the mining unit cost for each tonne of paste fill delivered, and the overall impact on mining unit costs in FY 2021 will be \$3-4/t as the plant ramps up to full capacity.

AISC. The FY 2021 AISC guidance at Wassa is expected to be higher than the recent performance, due to the costs from the paste fill as well as the step up in sustaining capital associated with the planned investment in underground development and drilling. The continuation of the processing of low-grade stockpiles in FY 2021 will include the material from the Skyway stockpile during the second half of 2021 which is held in inventory and will result in a non-cash cost as the material is drawn down, adding \$15/oz (non-cash) to the overall AISC. This is in addition to the incremental processing costs associated with the low-grade stockpile, as seen in FY 2020. The low-grade stockpiles processed during FY 2020 were not held with an inventory value and therefore had a more limited impact on the AISC.

Right-to-use asset. As a result of the IFRS 16 - Leases accounting standard, the completion of the construction of the GENSER power plant will result in the inclusion in the financial statements of a non-cash \$33.5m right-to-use asset addition to PPE and the recognition of a corresponding lease liability during Q1 2021. An element of the cost of power supplied by the GENSER plant will be accounted for as depreciation of the capital asset and as a finance cost. Approximately \$20/oz of the power cost will therefore not be allocated to cash operating costs or AISC.

FY 2021 CAPITAL EXPENDITURE AND EXPLORATION GUIDANCE

Table 5: FY 2021 Capital Expenditure and Exploration Guidance Summary

(\$m)	2021 Guidance - Wassa	2020 Guidance – Wassa ³
Capital Expenditure		
Sustaining Capital ²	26-28	20-22
Expansion Capital ²	19-22	18-20
Total Capital Expenditure	45-50	38-42
Exploration		
Total Exploration spend	15	6

Notes:

1. See "Non-GAAP Financial Measures".
2. Expansion capital are those costs incurred at new operations and costs related to major projects at existing operations where these projects will materially increase production. All other costs relating to existing operations are considered sustaining capital.
3. The revised 2020 guidance was announced on October 28, 2020.

Capital Expenditure Guidance

Capital programs at Wassa are expected to total \$45-50 million in FY 2021. This represents an increase on the c.\$46m invested in Wassa in FY 2020, with a particular focus on major infrastructure projects. These projects have now been completed and it is our expectation that investment in FY 2021 will focus on drilling and development. In order to ensure a robust balance sheet through the repayment of the 7% convertible debentures maturing in August 2021, and to allow for a ramp up in drilling and development activities, 40% of the total spend is budgeted for the first half of 2021 and the remaining 60% during the second half of 2021.

Sustaining capital is expected to total \$26-28m, of which \$10m is allocated to capitalized development and \$4-5m to the expansion of the tailings storage facilities.

Expansion capital is expected to total \$19-22m, of which \$7-8m is allocated to capitalized drilling, \$7m to ventilation infrastructure and \$5m to capitalized development.

Right-to-Use Asset

As a result of the IFRS 16 - Leases accounting standard, the completion of the construction of the GENSER power plant will result in the inclusion in the financial statements of a non-cash \$33.5m right-to-use asset addition to PPE and the recognition of a corresponding lease liability during Q1 2021. The capital expenditure guidance detailed above excludes this non-cash accounting asset addition.

Exploration Budget and programs

A \$15m exploration budget has been approved for FY 2021. Of this, \$7m will be invested in and around the Wassa mine. This work will include the continued wide spaced drilling up and down dip of the current resources and reserves as well as drill testing of seven targets to the south and east of the main Wassa deposit. Approximately 28,000 meters of combined diamond and reverse circulation drilling has been planned. In addition, 9,000 meters of air core drilling has been planned to test the coincidental geophysical and geochemical anomaly over the eastern fold closure target.

A total of \$6m has been allocated to further testing of the five HBB targets followed up in FY 2020 as well as five additional targets along the HBB corridor. Approximately 50,000 meters of air core drilling will be conducted over the soil geochemical anomalies defined last year and in past programs. Several of these targets will be further delineated with ground geophysics prior to drilling. Pending positive results from the air core drilling, approximately 15,000 meters of deeper reverse circulation with diamond core tails has been planned for initial follow up. Several of the historical open pits on Golden Star's Benso mining lease have never had any drilling beneath them and these deposits have higher grade cores that could potentially form underground targets. In light of this, a further 12,000

meters of reverse circulation and diamond core tails drilling has been budgeted to test below these pits on wide spacing.

The Abura project operates under an earn-in agreement between the Company and a Ghanaian concession owner. This project is located to the South West of the Huini-Butre and Benso concessions and has been drilled with shallow rotary air blast holes, which returned interesting results that require follow-up with deeper reverse circulation and diamond drilling. The FY 2021 budget provides for 5,000 meters of drilling with approximately \$0.7m being allocated to this program.

These regional exploration programs have been designed to move the various prospects up the exploration pipeline, and to assess whether further work, in 2022 and beyond, is justified.

The remaining portion of the FY 2021 budget allocation is for exploration equipment and supplies.

For further information, please visit www.gsr.com or contact:

Michael Stoner
Investor Relations and Business Development
+44 020 8167 7000
investor@gsr.com

Company Profile:

Golden Star is an established gold mining company that owns and operates the Wassa underground mine in the Western Region of Ghana, West Africa. Listed on the NYSE American, the Toronto Stock Exchange and the Ghanaian Stock Exchange, Golden Star is focused on delivering strong margins and free cash flow from the Wassa mine. As the winner of the Prospectors & Developers Association of Canada 2018 Environmental and Social Responsibility Award, Golden Star remains committed to leaving a positive and sustainable legacy in its areas of operation.

Statements Regarding Forward-Looking Information

Some statements contained in this news release are “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995 and “forward looking information” within the meaning of Canadian securities laws. Forward looking statements and information include but are not limited to, statements and information regarding: gold production, cash operating costs, AISC and capital expenditure estimates and guidance for 2021; the ability to achieve the 2021 guidance; the sources of gold production at Wassa during 2021; expected grades and mining rates for 2021; increasing development and drilling activities at Wassa; the ability to increase production and improve cash flow generation; the expected allocation of the Company’s capital expenditure; completion of the PEA and timing thereof; completion of the reserve and resource update, and timing thereof; the Company’s ability to repay the 7% convertible debentures maturing in August 2021; estimated costs and timing of the development of new mineral deposits and sources of funding for such development; the ability to continue to ship gold across borders and to refine doré at the South African refinery; the processing of low grade stockpiles at Wassa for FY 2021; implementation of the Company’s exploration programs for the FY 2021 and the timing thereof; and the potential impact of the COVID-19 pandemic on the Company’s operations and the ability to mitigate such impact. Generally, forward-looking information and statements can be identified by the use of forward-looking terminology such as “plans”, “expects”, “is expected”, “budget”, “scheduled”, “estimates”, “forecasts”, “intends”, “anticipates”, “believes” or variations of such words and phrases (including negative or grammatical variations) or statements that certain actions, events or results “may”, “could”, “would”, “might” or “will be taken”, “occur” or “be achieved” or the negative connotation thereof. Investors are cautioned that forward-looking statements and information are inherently uncertain and involve risks, assumptions and uncertainties that could cause actual facts to differ materially. Such statements and information are based on numerous assumptions regarding present and future business strategies and the environment in which Golden Star will operate in the future. Forward-looking information and statements are subject to known and unknown risks, uncertainties and other important factors that may cause the actual results, performance or achievements of Golden Star to be materially different from those expressed or implied by such forward-looking information and statements, including but not limited to: gold price volatility; discrepancies between actual and estimated production; mineral reserves and resources and metallurgical recoveries; mining operational and development risks; liquidity risks; suppliers suspending or denying delivery of products or services; regulatory restrictions

(including environmental regulatory restrictions and liability); actions by governmental authorities; the speculative nature of gold exploration; ore type; the global economic climate; share price volatility; the availability of capital on reasonable terms or at all; risks related to international operations, including economic and political instability in foreign jurisdictions in which Golden Star operates; risks related to current global financial conditions; actual results of current exploration activities; environmental risks; future prices of gold; possible variations in mineral reserves and mineral resources, grade or recovery rates; mine development and operating risks; an inability to obtain power for operations on favourable terms or at all; mining plant or equipment breakdowns or failures; an inability to obtain products or services for operations or mine development from vendors and suppliers on reasonable terms, including pricing, or at all; public health pandemics such as COVID-19, including risks associated with reliance on suppliers, the cost, scheduling and timing of gold shipments, uncertainties relating to its ultimate spread, severity and duration, and related adverse effects on the global economy and financial markets; accidents, labor disputes and other risks of the mining industry; delays in obtaining governmental approvals or financing or in the completion of development or construction activities; litigation risks; and risks related to indebtedness and the service of such indebtedness. Although Golden Star has attempted to identify important factors that could cause actual results to differ materially from those contained in forward-looking information and statements, there may be other factors that cause results not to be as anticipated, estimated or intended. There can be no assurance that future developments affecting the Company will be those anticipated by management. Please refer to the discussion of these and other factors in Management's Discussion and Analysis of financial conditions and results of operations for the year ended December 31, 2019, the three months ended June 30, 2020 and in our annual information form for the year ended December 31, 2019 as filed on SEDAR at www.sedar.com. The forecasts contained in this press release constitute management's current estimates, as of the date of this press release, with respect to the matters covered thereby. We expect that these estimates will change as new information is received. While we may elect to update these estimates at any time, we do not undertake any estimate at any particular time or in response to any particular event.

Non-GAAP Financial Measures

In this Press Release, we use the terms "cash operating cost", "cash operating cost per ounce", "all-in sustaining costs", "all-in sustaining costs per ounce", "adjusted net (loss)/income attributable to Golden Star shareholders", "adjusted (loss)/income per share attributable to Golden Star shareholders", "cash provided by operations before working capital changes", and "cash provided by operations before working capital changes per share - basic".

"Cost of sales excluding depreciation and amortization" as found in the statements of operations includes all mine-site operating costs, including the costs of mining, ore processing, maintenance, work-in-process inventory changes, mine-site overhead as well as production taxes, royalties, severance charges and by-product credits, but excludes exploration costs, property holding costs, corporate office general and administrative expenses, foreign currency gains and losses, gains and losses on asset sales, interest expense, gains and losses on derivatives, gains and losses on investments and income tax expense/benefit.

"Cost of sales per ounce" is equal to cost of sales excluding depreciation and amortization for the period plus depreciation and amortization for the period divided by the number of ounces of gold sold (excluding pre-commercial production ounces sold) during the period.

"Cash operating cost" for a period is equal to "cost of sales excluding depreciation and amortization" for the period less royalties, the cash component of metals inventory net realizable value adjustments, materials and supplies write-off and severance charges, and "cash operating cost per ounce" is that amount divided by the number of ounces of gold sold (excluding pre-commercial production ounces sold) during the period. We use cash operating cost per ounce as a key operating metric. We monitor this measure monthly, comparing each month's values to prior periods' values to detect trends that may indicate increases or decreases in operating efficiencies. We provide this measure to investors to allow them to also monitor operational efficiencies of the Company's mines. We calculate this measure for both individual operating units and on a consolidated basis. Since cash operating costs do not incorporate revenues, changes in working capital or non-operating cash costs, they are not necessarily indicative of operating profit or cash flow from operations as determined under IFRS. Changes in numerous factors including, but not limited to, mining rates, milling rates, ore grade, gold recovery, costs of labor, consumables and mine site general and administrative activities can cause these measures to increase or decrease. We believe that these measures are similar to the measures of other gold mining companies, but may not be comparable to similarly titled measures in every instance.

"All-in sustaining costs" commences with cash operating costs and then adds the cash component of metals inventory net realizable value adjustments, royalties, sustaining capital expenditures, corporate general and administrative costs (excluding share-based compensation expenses and severance charges), and accretion of rehabilitation provision. For mine site all-in

sustaining costs, corporate general and administrative costs (excluding share-based compensation expenses and severance charges) are allocated based on gold sold by each operation. "All-in sustaining costs per ounce" is that amount divided by the number of ounces of gold sold (excluding pre-commercial production ounces sold) during the period. This measure seeks to represent the total costs of producing gold from current operations, and therefore it does not include capital expenditures attributable to projects or mine expansions, exploration and evaluation costs attributable to growth projects, income tax payments, interest costs or dividend payments. Consequently, this measure is not representative of all of the Company's cash expenditures. In addition, the calculation of all-in sustaining costs does not include depreciation expense as it does not reflect the impact of expenditures incurred in prior periods. Therefore, it is not indicative of the Company's overall profitability. Share-based compensation expenses are also excluded from the calculation of all-in sustaining costs as the Company believes that such expenses may not be representative of the actual payout on equity and liability based awards.

The Company believes that "all-in sustaining costs" will better meet the needs of analysts, investors and other stakeholders of the Company in understanding the costs associated with producing gold, understanding the economics of gold mining, assessing the operating performance and the Company's ability to generate free cash flow from current operations and to generate free cash flow on an overall Company basis. Due to the capital intensive nature of the industry and the long useful lives over which these items are depreciated, there can be a disconnect between net earnings calculated in accordance with IFRS and the amount of free cash flow that is being generated by a mine. In the current market environment for gold mining equities, many investors and analysts are more focused on the ability of gold mining companies to generate free cash flow from current operations, and consequently the Company believes these measures are useful non-IFRS operating metrics ("non-GAAP measures") and supplement the IFRS disclosures made by the Company. These measures are not representative of all of Golden Star's cash expenditures as they do not include income tax payments or interest costs. Non-GAAP measures are intended to provide additional information only and do not have standardized definitions under IFRS and should not be considered in isolation or as a substitute for measures of performance prepared in accordance with IFRS. These measures are not necessarily indicative of operating profit or cash flow from operations as determined under IFRS.

"Adjusted net (loss)/income attributable to Golden Star shareholders" is calculated by adjusting net (loss)/income attributable to Golden Star shareholders for (gain)/loss on fair value of financial instruments, share-based compensation expenses, severance charges, loss/(gain) on change in asset retirement obligations, deferred income tax expense, non-cash cumulative adjustment to revenue and finance costs related to the Streaming Agreement, and impairment. The Company has excluded the non-cash cumulative adjustment to revenue from adjusted net income/(loss) as the amount is non-recurring, the amount is non-cash in nature and management does not include the amount when reviewing and assessing the performance of the operations. "Adjusted (loss)/income per share attributable to Golden Star shareholders" for the period is "Adjusted net (loss)/income attributable to Golden Star shareholders" divided by the weighted average number of shares outstanding using the basic method of earnings per share.

For additional information regarding the Non-GAAP financial measures used by the Company, please refer to the heading "Non-GAAP Financial Measures" in the Company's Management Discussion and Analysis of Financial Condition and Results of Operations for the year ended December 31, 2019 and the three months ended September 30, 2020, which are available at www.sedar.com.

Source: Golden Star Resources Ltd.