

20 March 2018

## COST OPTIMISATION EFFORT DELIVERING SIGNIFICANT SAVINGS FOR REVISED GOULAMINA PFS

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### HIGHLIGHTS:

- **Cost optimisation process is delivering significant savings:**
    - **Transport and handling costs reduced by an estimated 47% - from US\$187 to around US\$100 per tonne**
    - **Power cost to be reduced by at least 25%**
    - **Fuel cost to be reduced by 15%.**
  - **Outcomes expected to have a very significant benefit on Goulamina Project economics, with Goulamina C1 costs now reasonably expected to be below US\$300/t.**
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Birimian Limited (ASX:BGS; **Birimian** and the **Company**) is pleased to announce progress to date in the optimisation of proposed operating costs associated with its 100% owned Goulamina Lithium Project (**Goulamina** or the **Project**) in southern Mali. Following completion of a pre-feasibility study (**PFS**) in October 2017 (*BGS 04 Oct 2017*), the Company embarked on a process to refine and reduce key Project operating cost estimates. Birimian has undertaken extensive engagement with key suppliers since then to identify the best quality, cost competitive outcomes for incorporation in the forthcoming revised PFS (**Revised PFS**).

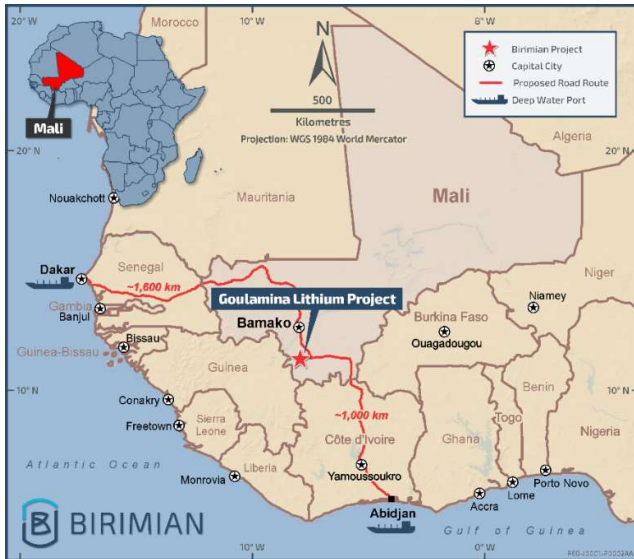
### **Cost Optimisation Program Outcomes to Date**

Three key areas of cost optimisation have been undertaken to date, involving Transport, Diesel and Power costs, with substantial cost reductions identified compared with previous estimates.

#### **Transport Costs**

The October 2017 PFS estimated transport and logistics costs at US\$187/t (dry concentrate), based on a proposed road and rail model for concentrate shipment to the Port of Abidjan in Côte d'Ivoire. This accounted for approximately 50% of the total C1 operating costs for Goulamina of US\$379. At the commencement of the cost optimisation program, Birimian published a target of significantly reducing transport and associated costs by at least 30%. To analyse and optimise these transport costs, numerous meetings were held in Mali with national and international transport contractors, aiming to reduce the previously reported estimated transport costs, based on road haulage to either

the Port of Abidjan in Côte d'Ivoire or the Port of Dakar in Senegal. This work included site visits by senior Birimian personnel to both ports in February 2018 to inspect storage, infrastructure and bulk handling facilities.



On unanimous advice from transport contractors concerning the reliability and capacity of Mali's rail links to port, Birimian has replaced the previous hybrid road-rail transport model with a road transport only option to deliver its concentrate to port. While plans have been announced to significantly upgrade railway links from Mali to Senegal and between Burkina Faso and Côte d'Ivoire, these projects will not be completed within a timeframe that would allow consideration of rail as an initial transport option for Goulamina. Adoption of a road transport-only option for the Project will result in the saving of US\$3.1M in Capex, which had been budgeted for the acquisition of 33 rail

carriages for product transportation. The PFS also envisaged transport of concentrate in two-tonne bulk bags. Birimian now proposes bulk transport which will simplify product loading, transport and unloading, eliminating the need for bulk bags and the costs associated with their use. This saving is reflected in the substantial reduction for "Stuffing and FOB charges" outlined below.

Sufficient road transport capacity to transport the 380,000 tonnes/pa of concentrate that would be produced by a 2Mtpa processing plant has been identified. While Birimian continues to consider both the Ports of Abidjan and Dakar, the Company is likely to use the Port of Abidjan for its concentrate exports. Abidjan is the biggest, best equipped and most efficient port in the region and is closer to Goulamina than Dakar. Both ports have bulk loading facilities that are under-utilised, while nearby product storage locations also have been identified. The comparative transport costs shown in the table below assume road transport for concentrate shipment to the Port of Abidjan and reflect quotes received from potential transport and logistics providers with whom Birimian has had engagement as part of the process.

TRANSPORT AND HANDLING COSTS (Road to Abidjan, Spodumene Concentrate)	Units	Original PFS	Current Estimate	Estimated Change
Export Charges Mali	US\$/t	6	6	nil
Transport Charges	US\$/t	60	52	-14%
Warehousing Charges	US\$/t	21	14	-31%
Stuffing and FOB Charges	US\$/t	71	11	-84%
Moisture	%	7%	7%	nil
Agency Fees	%	10%	10%	nil
<b>Total transport and handling costs</b>	<b>US\$/t</b>	<b>187</b>	<b>99</b>	<b>-47%</b>

## **Diesel Supply Contract**

During analysis of fuel cost, work was undertaken to secure quotes for a diesel supply contract at a significantly lower price than that included in the October PFS, which will have a beneficial impact on both power and mining costs. The Company now has signed a diesel supply contract, which will result in an anticipated diesel cost approximately 15% lower than that outlined in the October PFS.

## **Power Costs**

The October PFS assumed that power supply for Goulamina would be provided onsite by diesel-fired generators, with 12 x 1MW gensets required for a 2Mtpa plant option. Operating costs were calculated at US\$0.265/kWh. As a result of revised diesel costs, this figure would reduce to US\$0.23/kWh, should a diesel-fired power station be constructed at Goulamina. This represents a saving of more than US\$5/t of concentrate, however the Company is also in discussion with third party contractors regarding the installation of an “over the fence” hybrid solar/diesel power solution. Such a plant could be expected to reduce power costs to less than US\$0.20/kWh, a saving of some US\$10/t of concentrate. This would result in a further reduction in capital costs of US\$5M. These discussions are ongoing. The provision of grid-supplied hydroelectric power is also an option under consideration and negotiation.

## **CEO Comment**

As a consequence of the cost savings initiatives outlined above, Birimian is on track to meet its target of achieving an operating cost of less than US\$300/t in the Revised PFS. Birimian’s Executive Director and Chief Executive Officer, Mr Greg Walker, said: “The cost reductions identified to date will have a significant positive impact on our ability to deliver a highly competitive operation, making Goulamina one of the world’s leading low-cost hard rock lithium projects.

“Our target was to reduce Goulamina’s C1 operating cost from US\$379/t to less than US\$300/t and we are very pleased to have outperformed this measure. We have achieved that with the work done to-date in just three key areas and efforts will not stop there. There are other areas where optimisation work continues. These revised project inputs will be reflected in the forthcoming Revised PFS and will have a very substantial influence in improving Project economics.”



### **Greg Walker**

Executive Director and Chief Executive Officer  
Birimian Limited