

# ASX Announcement / Media Release

11 October 2023

## Full operations of Balama solar and battery hybrid system

### Highlights

- Syrah achieves full operations of Solar & Battery Hybrid System at Balama
- Solar & Battery Hybrid System will supply, on average, ~35% of power requirements of Balama, reducing diesel consumption by ~35% and product carbon equivalent emissions by ~13%
- Benefits of integrated power supply from the Solar & Battery Hybrid System and Diesel Gensets validated during Balama's September 2023 quarter production campaign
- 10 year operating lease and operating and maintenance contract with CrossBoundary Energy.

Syrah Resources Limited (ASX:SYR) ("Syrah" or "Company") is pleased to announce it has achieved full operations of the 11.25 MWp solar photovoltaic ("PV") array combined with an 8.5 MW/MWh battery energy storage system ("BESS") (together the "Solar & Battery Hybrid System") at its Balama Graphite Operations ("Balama") in Mozambique. The entire PV array, incorporating 20,832 solar modules with a surface area of ~53,800sqm (~5.4 hectares), has been fully integrated to the BESS. The PV array has operated and generated power to its intended design capacity and profile over duration to support the achievement of full operations.

The Solar & Battery System will contribute at least 35% of Balama's average site power requirements, significantly reducing diesel consumption and product carbon equivalent emissions at Balama and yielding associated cost savings<sup>1</sup>. The Solar & Battery System can solely supply Balama's power requirements during peak daylight times with the plant operating and continuously if the plant is not operating. Balama's diesel power generation plant ("Diesel Gensets") will provide baseload power requirements overnight and incremental power requirements during daylight hours considering solar irradiation, power availability from the Solar & Battery Hybrid System and overall site power demand. A new automated power management system is managing the operation of the Solar & Battery Hybrid System and Diesel Gensets for optimised integrated power generation at Balama.

In operational testing over 10 days during Balama's recent production campaign, integrated power supply from the Solar & Battery Hybrid System and Diesel Gensets was achieved with:

- ~33% of the total power draw supplied by the Solar & Battery Hybrid System;
- ~34% average savings in diesel consumed per KWh power generated, equating to ~16,000 litres of diesel savings per day, and an improvement shown in the stability and efficiency of the Diesel Gensets; and
- the Solar & Battery Hybrid System powering plant and site for 8 hours per day, on average, during daylight hours.

Syrah partnered with Solarcentury Africa Limited in engineering, procurement and construction, and commissioning of the Solar & Battery Hybrid System. The Solar & Battery Hybrid System is under a build-own-operate-transfer ("BOOT") arrangement, comprising a 10-year operating lease and an operating and maintenance contract with a Mozambique

<sup>1</sup> Costs saving during the 10-year operating lease term with CBE's project company, including fixed costs payable to CBE's project company. Cost savings from the Solar & Battery Hybrid System are expected to increase following the 10-year operating lease term.



incorporated project company wholly-owned by CrossBoundary Energy (“CBE”), the project financier. Operations and ownership of the Solar & Battery Hybrid System will be transferred to Syrah at nil cost at the end of the 10-year BOOT term.

The Solar & Battery Hybrid System will reduce the Global Warming Potential (“GWP”)<sup>2</sup>, or product carbon equivalent emissions, of Balama natural graphite products. Syrah’s independent lifecycle assessment estimated that the Solar & Battery Hybrid System would reduce the GWP of producing natural graphite from Balama mine and transporting it to Nacala port from 0.48kg to 0.42kg CO<sub>2</sub> equivalent per 1kg natural graphite, a 12.5% reduction. The Solar & Battery Hybrid System is estimated to reduce Balama’s GWP by 18kt CO<sub>2</sub> equivalent per annum, on average, over the life of the operation.

Syrah is progressing the evaluation of options to further optimise Balama’s power generation solution to reduce operating costs, lower the GWP of Balama products and ensure reliable power supply with high plant capacity utilisation.

**Syrah Managing Director and CEO Shaun Verner said**, “The achievement of full operations of the Solar & Battery Hybrid System is the culmination of extensive feasibility study, equipment procurement, construction and commissioning activities completed by the Syrah team, Solarcentury Africa and CrossBoundary Energy over several years. The Solar & Battery System delivers significant net operating cost savings, reduces our exposure to volatile, high diesel costs and further strengthens the ESG credentials of Balama’s natural graphite products. We look forward to continuing to work with CBE through the operating lease term.”



Figure 1: Balama PV array.



Figure 2: Balama BESS and Diesel Gensets.

<sup>2</sup> GWP is defined as the cumulative radiative forcing, both direct and indirect effects, over a specified time horizon resulting from the emission of a unit mass of gas related to some reference gas [CO<sub>2</sub>: (IPCC 1996)]. GWP are a forecast life of operation average for Balama (full natural graphite production) and include scope 1, scope 2 and scope 3 greenhouse gas emissions.

**This release was authorised on behalf of the Syrah Board by**

Shaun Verner, Managing Director

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## About Syrah

Syrah (ASX code: SYR) is an Australian Securities Exchange listed industrial minerals and technology company with its flagship Balama Graphite Operation in Mozambique and a downstream Active Anode Material Facility in the United States. Syrah's vision is to be the world's leading supplier of superior quality graphite and anode material products, working closely with customers and the supply chain to add value in battery and industrial markets.

## Forward Looking Statement

This document contains certain forward looking statements. The words "expect", "anticipate", "estimate", "intend", "believe", "guidance", "should", "could", "may", "will", "predict", "plan", "targets" and other similar expressions are intended to identify forward looking statements. Indications of, and guidance on, future earnings and financial position and performance are also forward looking statements. Forward looking statements, opinions and estimates provided in this document are based on assumptions and contingencies which are subject to change without notice, as are statements about market and industry trends, which are based on interpretations of current market conditions.

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