

Cauldron to Acquire River Sand Interests

- Acquisition of a number of river sand leases at the mouths of three of Western Australia's largest river systems
- Located near to transport infrastructure and key Asian markets
- Represents a significant strategic opportunity
- Potential to tap into the international sand market projected to be worth US\$60 billion per annum by 2030
- Initial conversations held with Singaporean sand market groups in relation to offtake opportunities

Cauldron Energy Limited (ASX Code: CXU (“Cauldron” or “the Company”) is pleased to announce that it has entered into an agreement to acquire a 100% ownership interest in a number of river sand leases located at the mouths of the Carnarvon, Onslow and Derby rivers in Western Australia, collectively covering an area of approximately 286 square kilometres (**Acquisition Agreement**).

The international sand and aggregate market in 2017 was worth US\$4.5 billion, by 2030 it's worth is estimated to grow to US\$60 billion; a growth rate of 5.5 per cent per year².

Commenting on the acquisition, Chief Executive Officer Jess Oram stated “Acquiring these high-quality river sand leases which are highly prospective for sand capable of use in the construction industry and near to transport infrastructure is a significant opportunity for Cauldron. The scarcity of resource and increasing demand is expected to drive sand prices higher in the medium term; and the proximity of the leases to key Asian markets represents a significant strategic advantage.”

Mr Oram further stated: “The Company intends to target off-take in both domestic and international sand markets. In line with this ambition, the Company is in the process of securing port capacity for initial export operations on its approved Mining Licence with capacity of up to 500,000 tonnes per annum of sand. The Company has held initial discussions with key Singaporean sand market groups to position the Company to tender for substantial long term government supply contracts.”

Under the terms of the Acquisition Agreement, Quarry Park Pty Ltd, Onslow Resources Limited, Anthony Warren Slater and Regent Point Pty Ltd, collectively referred to as the Vendors, will transfer to Cauldron a 100% ownership interest in the leases listed in Table 1 below (**Tenements**), together with all of the technical information pertaining to the Tenements and the benefit of any third-party agreements in exchange for:

- a) 20 million fully paid CXU ordinary shares (**Initial Share Consideration**), plus
- b) production payments of \$250,000 for the Carnarvon Tenements upon the entering into of commercial production at Carnarvon as defined in the Acquisition Agreement, and \$250,000 for the Derby Tenements upon the entering into of commercial production at Derby as defined in the Acquisition Agreement, and \$500,000 for the Onslow Tenements upon the entering into of commercial production at Onslow as defined in the Acquisition Agreement, to be settled in cash or shares (based on an assumed share price of \$0.035) by mutual agreement (**Production Payments**), plus
- c) a royalty equal to \$1.00 per tonne or 2% of sales revenue (calculated based upon FOB prices) where Cauldron elects to undertake a mining operation as defined in the Acquisition Agreement (**Royalty**).

The Acquisition Agreement is subject to a number of conditions precedent including shareholder approval.

ABN

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Address

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Level 1
1008 Wellington Street
WEST PERTH WA 6005

PO BOX 1024
West Leederville WA 6007

ASX Code

CXU

Securities on Issue

447,999,512 shares
6,833,395 Options (*exercise price: \$0.03; expiry 31 Dec 2021*)
16,666,666 Options (*exercise price: \$0.03; expiry 31 Mar 2022*)
10,000,000 Unlisted Options (*exercise: \$0.03; expiry 16-Sep-22*)
6,000,000 Unlisted Options (*exercise: \$0.05; expiry 16-Sep-23*)
43,354,839 Unlisted Options (*exercise: \$0.05; expiry 30-Nov-23*)
9,000,000 Performance Rights (*expiring 10 August 2025*)

Board of Directors

Simon Youds
Non-Executive Chairman

Jess Oram
Executive Director & Chief
Executive Officer

Qiu Derong
Non-executive Director

Judy Li
Non-executive Director

Chenchong Zhou
Non-executive Director

Michael Fry
Company Secretary

Tenements to be Acquired

Tenement	Location	Legal and Beneficial Holder	Interest	Grant Date	Expiry Date
ELA09/1816	Carnarvon	Onslow Resources Ltd	100%	Under application	N/a
MLA09/150	Carnarvon	Onslow Resources Ltd	100%	Under application	N/a
ELA04/2548	Derby	Regent Point Pty Ltd	100%	Under application	N/a
E08/2328	Onslow	Quarry Park Pty Ltd	100%	3/12/2015	02-Dec-20
E08/2329	Onslow	Quarry Park Pty Ltd	100%	11/06/2013	10-Jun-23
E08/2642	Onslow	Anthony Warren Slater	100%	29/09/2015	28-Sep-20
M08/487	Onslow	Quarry Park Pty Ltd	100%	12/04/2013	11-Apr-34
L08/71	Onslow	Quarry Park Pty Ltd	100%	29/04/2013	28-Apr-34

Table 1: List of Tenements being acquired from Vendors

Sand as a Resource Bulk Commodity

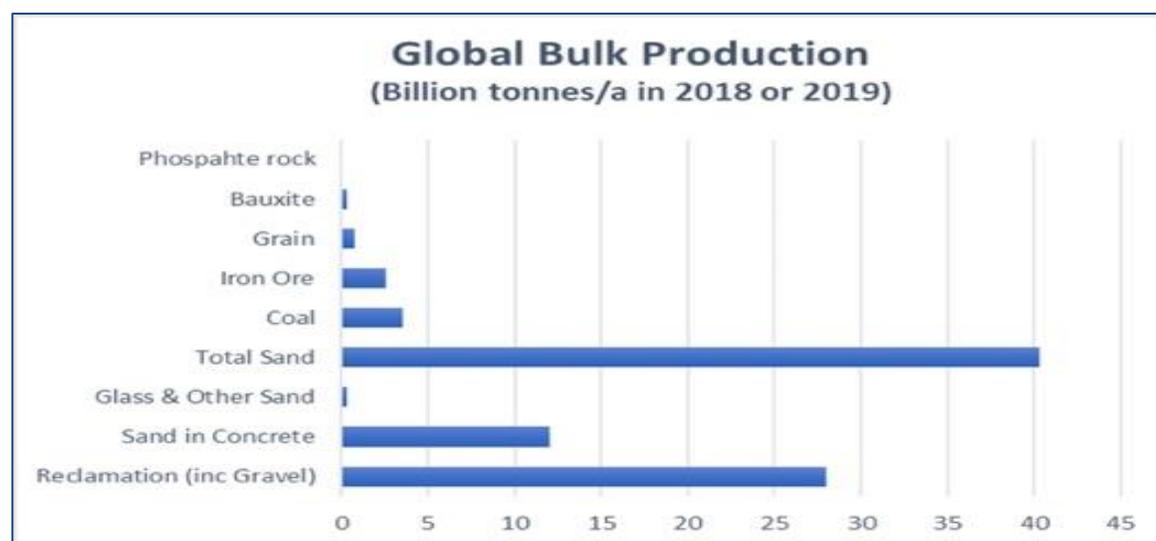


Figure 1: Estimated Global Annual Bulk Commodity Production in billion tonnes (2018/2019)[Source CXU]

Sand is by far the largest globally mined commodity (refer Figure 1), outstripping the shipments of coal, iron ore and grain. Sand is not traded on any recognised exchange, but the United Nations (UN) estimates 40 billion tonnes of sand¹ is mined globally each year. Putting this in context, the next largest bulk commodity, in terms of tonnage moved, is coal at about 3.5 billion tonnes in 2018 (International Energy Agency, IEA).

The global sand market however lacks transparency and due to localised demand and supply relationships has attracted the activities of organised crime gangs in some countries.

The consumption of sand in the developing world is voracious. Sand or silica dioxide (SiO₂) has in terms of bulk tonnage three main uses. By far, the largest bulk commodity use is in land reclamation and island building, followed by use in the manufacture of concrete. There are increasingly valuable uses for sand or silica in glass manufacture or specialised glass like phone screens for which the cost per tonne exceed USD\$1000/tonne. The total usages for this third 'minor' tonnage is about 300Mt or 0.3 billion tonnes per annum globally. This represents the target area for most silica sand miners as the high value, high margin products capable of absorbing high processing and transport costs.

¹ UN Environment 2019; Sand and Sustainably, Finding new solutions for Environmental Governance of global sand resources

The graph above (refer **Figure 1**) shows the massive tonnage difference estimated for the two major uses (28 Bt/a & 12 Bt/a) in comparison with the higher value Glass and specialised uses. For perspective the other main global bulk commodities annual usage is graphed for comparison. (Refer **Figure 1**)

The Global Construction Sand Market

Cauldron has recognised that the river sand as a bulk commodity is distinct from desert, dune or marine sand which is found in relatively high quantities. Ideally river sand comprises of more angular particles with higher silica content, naturally sized by river action. The reduced period of erosion in rivers as opposed to a the marine or desert environment, leaves a more angular less rounded particle, capable of interlocking and hence offering a greater load bearing capacity. It is this size-sorted resilient angular particle which is much sought after for construction. Recent growth in Asia and globally has created a scarcity in this commodity and an associated demand driven price rise sufficient to justify sea-borne transport.

The market investigation completed by CXU, shows global usage of sand per annum is between 35 and 45 billion tonnes comprising 12 billion tonnes in concrete and 25-30 billion tonnes in land reclamation. Precise information on global sand extraction is not available but estimates from the United Nations are 40 billion tonnes per annum².

As an unregulated and unmeasured market, we can only estimate or derive the global production demand of construction sand. This market demand is highly coupled to growth and the associated use of concrete manufacture when mixed with cement and aggregate. Annual production of cement is measured and recorded. In 2019 about four billion tonnes of cement was manufactured and used globally with over 50% used in Asia, consistent with the previous five years (refer **Figure 2**).

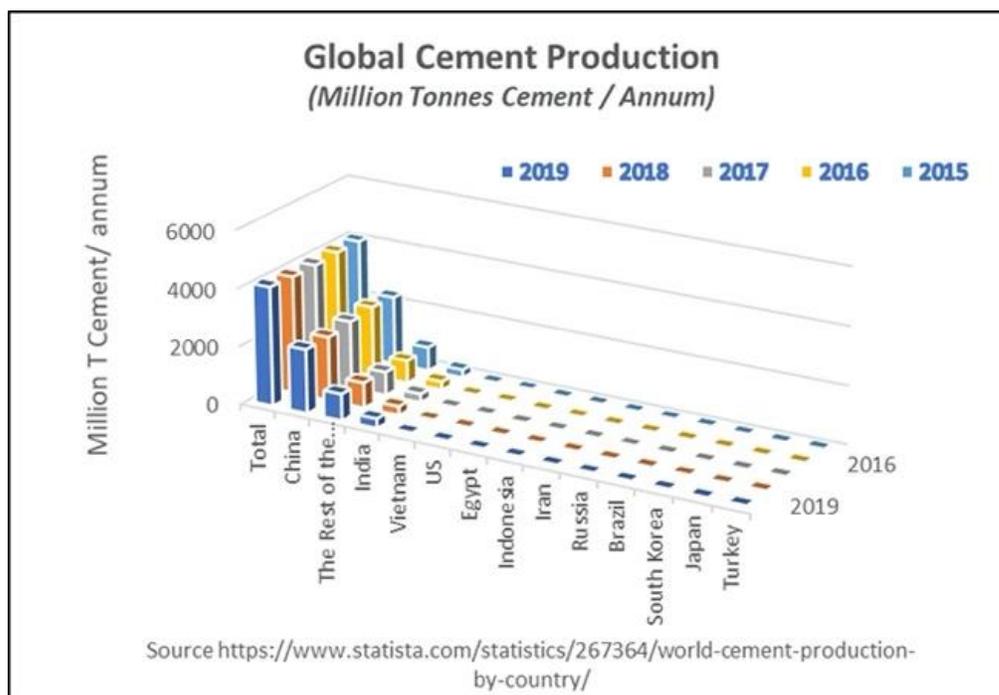


Figure 2: Global Cement Production of 4 billion tonnes >50% in Asia or approximately 12 billion tonnes of sand assuming this cement is used predominantly for concrete manufacture consistently over last 5 years

The ratio of cement, sand and gravel used in concrete is about 1:3:6. Approximately three tonnes of sand is needed per tonne of cement in concrete or based on four billion tonnes of annual cement production, an estimated twelve billion tonnes of construction sand is demanded each year globally with over six billion required in Asia alone (refer **Figure 1**).

² Driven to Extraction Can Sand Mining be sustainable? Oli Brown, Hoffmann Centre, Chatham House. <https://hoffmanncentre.chathamhouse.org/article/driven-to-extraction-can-sand-mining-be-sustainable/>

The Global Land Reclamation Sand Market

The use of sand in the manufacture of concrete is dwarfed by the use of sand for land reclamation purposes. The estimation of the demand for reclamation sand is more difficult to derive given the numerous unregulated extraction sources. The preference for sand used in construction and land reclamation is for the less eroded and more unsorted sand particles found in river and estuarine placement. Marine sand also has a higher proportion of softer less resilient calcium carbonate particles arising in the marine environment from shells and corals which is less desirable for construction.

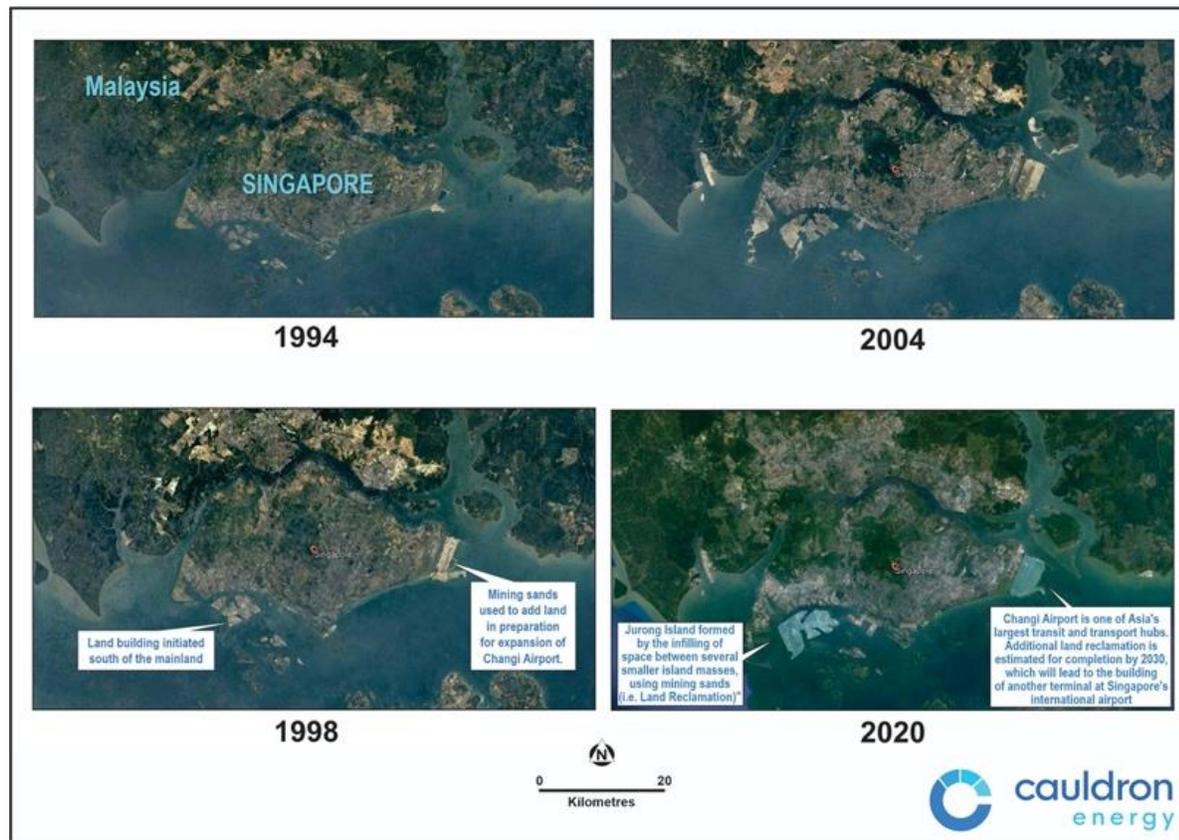


Figure 3: Time related images taken of Singapore harbour over a 25-year period showing the land reclaimed from the harbour shows Jurong Island group now as one island and its growth south plus the expansion west of the land adjacent to Changi into the harbour. Further land reclamation is planned up to 2030 and beyond.

The use of reclamation sand has been estimated by various bodies of work to be as much as 35 billion tonnes dwarfing the next largest bulk commodity mined, coal at approximately four billion tonnes of global production annually. Sand used in land reclamation has a self-draining property and a requirement to withstand a vertical loading. The raw material for this needs to be angular river sand. The more rounded sand particles found in deserts and in the marine environment is not preferred.

The Growth in Sand Demand and Mining

The burgeoning demand in Singapore, Hong Kong and other Asian growth centres has depleted nearby quality sources creating an illegal mining industry in neighbouring countries. The environmental damage and associated involvement of organised crime has brought about sand export bans in Vietnam, Malaysia, Indonesia and Cambodia. It has been widely reported that sand in precious fisheries and river systems have been targeted by organised crime sourcing sand as far away as the Philippines and India.

Singaporean authorities have responded by dictating their sand imports to be supported by the correct regulatory environmental approvals from the dispatch country and has the required Singaporean laboratory tests work to ensure suitability for purpose. For this it has been accepted that this quality will involve a higher price which has opened the market to legitimate and ethical suppliers adhering to local regulatory conditions imposed by their mining jurisdiction. This positive change has created a sustainably sourced sea-borne sand market in Singapore and other Asian countries, which provides the lead for other importing countries to follow.



Figure 4: Plan model showing the planned construction on the reclaimed Jurong island in Singapore's harbour depicted in Figure 3. Not only is the land being built on reclamation sand, the concrete used in the building construction planned comprises ~30%-40% construction sand, illustrating the sand requirement for this form of development found in the high growth regions of the world.



A view of 'The World Islands' development seen from the air in Dubai, United Arab Emirates.
Credit: Chris Jackson/Getty Images.

Figure 5: World Island Construction in Dubai using imported International sand after local stocks were depleted.

Low Impact Sand Extraction

The United Nations has identified sand mining as a critical global resource to be managed¹. The use of extraction measurement and licencing as practiced in the highly regulated Australia resources industry minimises the poor environmental outcomes. This has been identified by the United Nations and adopted by target customer market in Singapore as a requirement for tender on their government sponsored building and construction projects. The exploration licences acquired by the Company are in areas where shipping channels and other infrastructure are at risk of becoming choked with the sand being transported and deposited by these large northern western Australian river systems. Any sand removed from the river estuary and channels is replaced by cyclonic flooding with the frequency of two to three years.

Low environmental impact sand extraction is at a rate that the river replaces the extracted resource. The north of Western Australia has large catchment river systems with frequent significant flooding events driven by monsoonal activity with several occurring in the region each year between October and March. Around Carnarvon the sand deposited during recent flood events has not been able to be removed by maintenance dredging affordable by the local community. Key economic assets of port and shipping plus recently built tourist infrastructure and historical infrastructure is at risk of being lost to the deposited sand. This situation is something the Company is in commercial position to assist with once delayed mining approvals are resolved. A positive outcome in sand removal may provide a significant economic boon to the Carnarvon port at it once again can be the safe and logical anchorage staging stop for the boating community en route from Perth to the renowned fishing waters of Exmouth.

Low-Cost Extraction enabling Global Sales

The Company further understands the sand in river mouths is near-to-transport infrastructure and can be mined using an environmentally sensitive low cost and low-impact extraction method. The extraction systems have been approved and adopted for use in Queensland near the Great Barrier Reef, having significant environmental sensitivity. The use of low impact excavator extraction on barges and barging to self-loading sea-going bulk transport allows these operations in northern Australia to compete on cost with closer-to-market sand sources. The approval process for these planned operations will follow the world recognised mining licencing and environmental approval protocols established in Australia. Prior to the utilisation of these techniques, Cauldron will utilise traditional truck and shovel methods on existing mining licences which recently supplied the sand that was used in the construction of large local resource projects near Onslow.

Authorised for release by Cauldron's Executive Director Jess Oram.

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Competent Person Statement

The information in this report that relates to the Exploration Results is based on information compiled by Mr Jess Oram, a Competent Person who is a Member of the Australasian Institute of Geoscientists. Mr Oram is the Executive Director of Cauldron Energy. Mr Oram has sufficient experience that is relevant to the style of mineralisation, type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 edition of the Australasian Code for Reporting of Exploration, Results, Mineral Resource and Ore Reserves (JORC Code 2012). Mr Oram consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

Forward looking statements

Information included in this release constitutes forward-looking statements. Often, but not always, forward looking statements can generally be identified by the use of forward looking words such as “may”, “will”, “expect”, “intend”, “plan”, “estimate”, “anticipate”, “continue”, and “guidance”, or other similar words and may include, without limitation, statements regarding plans, strategies and objectives of management, anticipated production or construction commencement dates and expected costs or production outputs. Forward looking statements inherently involve known and unknown risks, uncertainties and other factors that may cause the Company’s actual results, performance and achievements to differ materially from any future results, performance or achievements. Relevant factors may include, but are not limited to, changes in commodity prices, foreign exchange fluctuations and general economic conditions, increased costs and demand for production inputs, the speculative nature of exploration and project development, including the risks of obtaining necessary licences and permits and diminishing quantities or grades of reserves, political and social risks, changes to the regulatory framework within which the company operates or may in the future operate, environmental conditions including extreme weather conditions, recruitment and retention of personnel, industrial relations issues and litigation. Forward looking statements are based on the Company and its management’s good faith assumptions relating to the financial, market, regulatory and other relevant environments that will exist and affect the Company’s business and operations in the future. The Company does not give any assurance that the assumptions on which forward looking statements are based will prove to be correct, or that the Company’s business or operations will not be affected in any material manner by these or other factors not foreseen or foreseeable by the Company or management or beyond the Company’s control. Although the Company attempts and has attempted to identify factors that would cause actual actions, events or results to differ materially from those disclosed in forward looking statements, there may be other factors that could cause actual results, performance, achievements or events not to be as anticipated, estimated or intended, and many events are beyond the reasonable control of the Company. Accordingly, readers are cautioned not to place undue reliance on forward looking statements. Forward looking statements in these materials speak only at the date of issue. Subject to any continuing obligations under applicable law or any relevant stock exchange listing rules, in providing this information the company does not undertake any obligation to publicly update or revise any of the forward looking statements or to advise of any change in events, conditions or circumstances on which any such statement is based.