

# Development options for Siviour Graphite Project

ASX: RNU

## ASX RELEASE

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## ASX CODE

RNU

Developing  
Australia's largest  
graphite deposit



Renascor Resources (ASX: RNU) is pleased to announce results from continuing studies that have confirmed that the Siviour Graphite Project is economically robust in a number of development scenarios.

In particular, the studies show that, in addition to offering impressive returns as a large-scale operation, Siviour offers a competitive pathway to production through a low start-up capital, staged development.

## Study Parameters – Cautionary Statements

*This study is intended to offer an option to the production case outlined in the Siviour Scoping Study, released on 23 May 2017, by offering a two-staged approach to developing an open pit mine and graphite production plant constructed adjacent to the Siviour Graphite Deposit and to reach a decision to proceed with more definitive feasibility studies.*

*The first stage considers a smaller start-up operation than assessed in the Siviour Scoping Study. After the first three years, this study incorporates as a second-stage, the larger production scenario envisaged in the Siviour Scoping Study.*

*This study is a preliminary technical and economic study of the potential viability of the Siviour Graphite Deposit. It is based on low level technical and economic assessments that are not sufficient to support the estimation of ore reserves. Further evaluation work and appropriate studies are required before Renascor will be in a position to estimate any ore reserves or to provide any assurance of an economic development.*

*Renascor has chosen to base 100% of the total Life of Mine (LOM) production target on resources identified within the Indicated Resource category. This study has not included any Inferred Resources in the LOM production target because there is a lower level of geological certainty associated with Inferred Resources.*

*This study is based on the material assumptions outlined elsewhere in this announcement. These include assumptions about the availability of funding. While Renascor considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by this study will be achieved.*

*To achieve the range of outcomes indicated in this study, additional funding will likely be required. Investors should note that there is no certainty that Renascor will be able to raise that amount of funding when needed. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of Renascor's existing shares. It is also possible that Renascor could pursue other 'value realisation' strategies such as a sale, partial sale or joint venture of the project. If it does, this could materially reduce Renascor's proportionate ownership of the project.*

*This announcement contains forward-looking statements. Renascor has concluded it has a reasonable basis for providing the forward-looking statements included in and believes it has reasonable basis to expect it will be able to fund development of the project. However, a number of factors could cause actual results, or expectations to differ materially from the results expressed or implied in the forward-looking statements. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of this study.*

## Highlights

The project economics of the two-stage option are encouraging and offer Renascor a potential low start-up capital alternative to achieve competitive commercial production from Siviour.

|                         |                             |                     |
|-------------------------|-----------------------------|---------------------|
| <b><u>Stage-one</u></b> | Start-up capital cost:      | AU\$15.9 million    |
|                         | Commencement of production: | 2019                |
|                         | Annual production:          | 10,800 tonnes       |
|                         | Cash cost of production:    | AU\$589 per tonne   |
|                         | Basket price:               | AU\$1,222 per tonne |
| <b><u>Stage-two</u></b> | Start-up capital cost:      | AU\$138 million     |
|                         | Commencement of production: | 2022                |
|                         | Annual production:          | 123,000 tonnes      |
|                         | Cash cost of production:    | AU\$452 per tonne   |
|                         | Basket price:               | AU\$1,347 per tonne |

## Benefits of staged approach

- *Reduced start-up capital.* In addition to reducing up-front capital by commissioning a smaller-scale stage-one plant, the staged-approach reduces start-up capital by leveraging off of Siviour's access to existing infrastructure.
- *Competitive stage-one production.* By commencing mining operations in a near-surface, high-grade zone, pre-strip requirements are reduced and average feed grade increases from 8.1% (as per the Siviour Scoping Study) to 11.1% during stage-one, permitting positive cash flow from the first year of production.
- *Develop customer base.* The successful execution of stage-one will assist in developing a customer base optimal for the Siviour basket of products and supporting the capital requirement needed to fund the larger scale, stage-two operation.

Commenting on the results of this study, Renascor Managing Director David Christensen stated:

*The results of the recent studies show that Siviour offers impressive returns at a range of production levels.*

*The staged approach offers a potential lower-risk alternative to a large-scale start-up by taking advantage of some of the key strengths of Siviour. Pre-production capital costs are minimized due to the project's proximity to South Australia's established infrastructure, and Siviour's shallow, flat-lying orientation keeps projected operating costs competitive, with stage-one getting an additional benefit as mining commences in a near-surface, high-grade zone.*

*As we move towards completion of the Siviour Pre-Feasibility Study and advance discussions with potential offtake and finance partners, we will actively consider all viable options for bringing Siviour into production.*

## Key Outcomes of Staged Development Study

The staged development study is intended to offer a potential low up-front capital start-up option for the Siviour Graphite Project. Stage-one considers a higher-grade, small-scale operation for three years, before transitioning in the second stage to the larger production case contemplated in the Siviour Scoping Study (see Renascor ASX announcement dated 23 May 2017) in year four.

A summary of the estimated key results of this study, and a comparison to the Siviour Scoping Study, is described below in Table 1. Additional information, including the material assumptions used in the study, are included elsewhere in this announcement.

| Parameter                                              | Two-stage option                  |           |                             |           | Siviour Scoping Study |           |
|--------------------------------------------------------|-----------------------------------|-----------|-----------------------------|-----------|-----------------------|-----------|
|                                                        | Stage-one<br>(years 1 to 3)       |           | Stage-two<br>(year 4 to 23) |           |                       |           |
| Currency <sup>1</sup>                                  | AU\$                              | US\$      | AU\$                        | US\$      | AU\$                  | US\$      |
| Annual production                                      | 10,800t                           |           | 123,000t                    |           | 123,000t              |           |
| Plant throughput                                       | 100,000tpa                        |           | 1,650,000tpa                |           | 1,650,000tpa          |           |
| Average feed grade                                     | 11.1% TGC                         |           | 8.1% TGC                    |           | 8.1% TGC              |           |
| Cash cost of production (per tonne)                    | AU\$589                           | US\$459   | AU\$452                     | US\$353   | AU\$450               | US\$333   |
| Basket price (per tonne) <sup>2</sup>                  | AU\$1,222                         | US\$953   | AU\$1,347                   | US\$1,051 | AU\$1,420             | US\$1,051 |
| Life of mine                                           | 23 years                          |           |                             |           | 20 years              |           |
| Development capital                                    | AU\$15.9m                         | US\$12.4m | AU\$138m <sup>3</sup>       | US\$108   | AU\$144m              | US\$107m  |
| Payback of development capital (from first production) | 3.1                               |           | 1.8                         |           | 1.7                   |           |
| NPV <sub>10</sub> (after tax) (life of mine)           | AU\$370m or US\$288m <sup>4</sup> |           |                             |           | AU\$551m              | US\$408m  |
| IRR (after tax) (life of mine)                         | 46%                               |           |                             |           | 59%                   |           |

**Table 1. Summary of key results**

<sup>1</sup> Stage-one and stage-two adopt an exchange rate of AU\$1.00 = US\$0.78. The Siviour Scoping Study adopted a rate of AU\$1.00 = US\$0.74.

<sup>2</sup> Product prices for both stage-one and stage-two are based on pricing assumptions adopted in the Siviour Scoping Study for each flake size category. See Appendix 1 – Product pricing. Stage-one flake sizes are based on metallurgical testing completed in July 2017. Stage-two flake sizes are based on metallurgical testing adopted in the Siviour Scoping Study. See Appendix 1 – Metallurgical test work.

<sup>3</sup> Reflects pre-production capital cost for stage-two, less approximately \$6m in net profit over three years of stage-one production.

<sup>4</sup> NPV<sub>10</sub> for stage-two reflects lower net present value based on additional three years of discounting due to deferred start-up. Stage-two NPV<sub>10</sub> would be approximately equal to Siviour Scoping Study NPV<sub>10</sub> if there were no deferral.

## Overview of Study

The stage-one assumptions and conceptual financial models were compiled by Renascor and a range of specialist consultants who have consented to the information used in the context in which it appears in this announcement.

Details regarding the consultants who contributed to key components of stage-one this study are provided below in Table 2.

| Consultant                                                     | Scope of Work                       |
|----------------------------------------------------------------|-------------------------------------|
| Christine Standing (MAusIMM), Optiro Pty Ltd                   | Resource estimate                   |
| Simon Hall (MAusIMM)                                           | Metallurgical test work             |
| Ben Brown (MAusIMM), Optima Consulting and Contracting Pty Ltd | Mining study                        |
| Matthew Langridge (FAusIMM), Minnovo Pty Ltd                   | Process plant                       |
| Ben Jeuken (MAusIMM), Ground Water Science Pty Ltd             | Hydrogeology                        |
| Evelyn G Poole (AAusIMM), Evelyn G Poole & Associates          | Environmental and social permitting |
| George Wilby                                                   | Logistics                           |

**Table 2. Consultants contributing to stage-one**

Stage-two of this study maintains the assumptions and conceptual financial models adopted in the Siviour Scoping Study, however, construction and production are deferred for three years during the stage-one operating period. Information on these assumptions and conceptual financial models are described in Renascor's ASX announcement dated 23 May 2017.

Key differences between stage-one and stage-two are outlined in Appendix 1 and elsewhere in this announcement.

## Next Steps

Renascor considers the project economics of the two-staged approach to be highly encouraging and to offer a potentially attractive low start-up capital option to commence commercially competitive production at Siviour.

As part of its Siviour Pre-Feasibility Study (currently underway), Renascor is further evaluating both the staged approach considered herein, as well as an immediate large-scale option, with start-up production scale to be determined after the completion of the pre-feasibility study and further consideration from potential offtake and finance partners.

Renascor anticipates that the Siviour Pre-Feasibility Study, which has now been expanded to include further consideration of the two-staged approach, will be completed in the first quarter of 2018.

## Bibliography

1. Renascor ASX announcement dated 5 September 2017, "Siviour Graphite Project Update"
2. Renascor ASX announcement dated 23 May 2017, "Siviour Graphite Scoping Study Demonstrates Robust Economics"
3. Renascor ASX announcement dated 17 March 2017, "Siviour Now Among Ten Largest Graphite Deposits in the World"

Renascor confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. Renascor confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

## Competent Person Statements

### **Mineral Resource**

*The information in this document that relates to Mineral Resources is based upon information compiled by Mrs Christine Standing who is a Member of the Australasian Institute of Mining and a Member of the Australian Institute of Geoscientists. Mrs Standing is an employee of Optiro Pty Ltd and has sufficient experience relevant to the style of mineralisation, the type of deposit under consideration and to the activity undertaken to qualify as a Competent Person as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mrs Standing consents to the inclusion in the report of a summary based upon her information in the form and context in which it appears.*

### **Exploration Results**

*The information in this document that relates to exploration activities and exploration results is based on information compiled and reviewed by Mr G.W. McConachy who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr McConachy is a director of the Company. Mr McConachy has sufficient experience relevant to the style of mineralisation and type of deposits being considered to qualify as a Competent Person as defined by the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2012 Edition). Mr McConachy consents to the inclusion in the report of the matters based on the reviewed information in the form and context in which it appears.*

### **Mining Study**

*The information in this document that relates to mine design and mine plan scheduling is based on information compiled and reviewed by Mr Ben Brown, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Brown is an employee of Optima Consulting and Contracting Pty Ltd and a consultant to the Company. Mr Brown has sufficient experience relevant to the type of deposit under consideration to qualify as a Competent Person as defined by the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2012 Edition). Mr Brown consents to the inclusion in the report of the matters based on the reviewed information in the form and context in which it appears.*

## **Metallurgical Results**

*The information in this document that relates to metallurgical test work results is based on information compiled and reviewed by Mr Simon Hall, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Hall is a consultant to the Company. Mr Hall has sufficient experience relevant to the mineralogy and type of deposit under consideration and the typical beneficiation thereof to qualify as a Competent Person as defined by the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2012 Edition). Mr Hall consents to the inclusion in the report of the matters based on the reviewed information in the form and context in which it appears.*

## **Process Plant**

*The information in this document that relates to the capital cost estimate for the stage-one process plant is based on information compiled and reviewed by Mr Matthew Langridge, who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Langridge is an employee of Minnovo Pty Ltd. Mr Langridge has sufficient experience relevant to process plants to qualify as a Competent Person as defined by the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2012 Edition). Mr Langridge consents to the inclusion in the report of the matters based on the reviewed information in the form and context in which it appears.*

This report may contain forward-looking statements. Any forward-looking statements reflect management's current beliefs based on information currently available to management and are based on what management believes to be reasonable assumptions. It should be noted that a number of factors could cause actual results, or expectations to differ materially from the results expressed or implied in the forward-looking statements.

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## Appendix 1

### Key Components of Stage-One

The small-scale production case outlined in stage-one is intended as an optional add-on to the production scenario set forth in the Siviour Scoping Study by incorporating a small-scale production option, before transitioning in stage-two to the larger scale production of the scoping study. Accordingly, for stage-two, this study maintains the general assumptions and financial models previously developed for the Siviour Scoping Study, with the exception that the scoping study schedule is deferred for three years. Key differences between stage-one and stage-two are described below.

#### 1. Mineral Resources

Stage-one and stage-two production utilizes Renascor's JORC Mineral Resource Estimate for Siviour as announced on 17 March 2017. See Table 1.

| Category  | Tonnes of mineralisation (millions) | TGC  | Tonnes of contained graphite (millions) |
|-----------|-------------------------------------|------|-----------------------------------------|
| Indicated | 51.8                                | 8.1% | 4.2                                     |
| Inferred  | 28.8                                | 7.6% | 2.2                                     |
| Total     | 80.6                                | 7.9% | 6.4                                     |

Note: Cut-off grade of 3% total graphitic carbon

**Table 3. Siviour Mineral Resource estimate as of 15 March 2017**

One hundred percent (100%) of the total life of mine (LOM) production target for both stage-one and stage-two is included within the Indicated Resources of Siviour.

#### 2. Mining and Mine Design

The mining schedule and physicals for stage-one were developed based over the three-year mine life utilizing a shallow, high-grade mineralised zone of the Indicated Resource. The average feed-grade of the higher-grade, stage-one zone is 11.1%. In stage-two, the mining schedule increases to accommodate the larger 1.65Mt capacity of the stage-two processing plant. Mining for stage-two also occurs within the Indicated Resource, at an average head-grade of 8.1%.

For the purpose of both stage-one and stage-two, conventional mining, using drill and blast, load and haul and crusher feed and in-pit wet disposal were adopted. Further studies into alternative mining and disposal methods are currently being considered as part of the Siviour Pre-Feasibility Study.

#### 3. Metallurgical Test work

The mineral processing parameters for stage-one are based on test work completed in July 2017 at ALS Metallurgy (Adelaide) on a composite sample from 14 diamond drill holes drilled within the Siviour mineralised body, with parameters for stage-two based on test work completed in March 2017 on three composite samples obtained from core samples from 16 diamond holes drilled within areas of the Siviour mineralised body. In each case, the samples were selected on the basis of being representative of the typical mineralised zone within each core hole. Examination of

these samples has demonstrated continuity of the quality of the graphite. The flake size distribution from the test work to date is summarised below in Table 4.

| Flake category                      | Particle size |              | Stage-one distribution | Stage-two distribution |
|-------------------------------------|---------------|--------------|------------------------|------------------------|
|                                     | Microns (µm)  | Mesh (#)     |                        |                        |
| Jumbo                               | >300          | +48          | 6%                     | 8%                     |
| Large                               | 180 to 300    | -48 to +80   | 20%                    | 25%                    |
| Medium                              | 150 to 180    | -80 to +100  | 10%                    | 15%                    |
| Small                               | 75 to 150     | -100 to +200 | 43%                    | 39%                    |
| Fine                                | <75           | -200         | 21%                    | 13%                    |
| <b>Weighted average grade (TGC)</b> |               |              | 95%                    | 94%                    |
| <b>Recovery rate</b>                |               |              | 91%                    | 85%                    |

**Table 4. Summary of Siviour concentrate size distribution**

Additional test work, including ore variability and optimization test work is currently in progress, with updated results expected to be included in the Siviour Pre-Feasibility Study.

#### **4. Process Plant Design**

The process plant for both stage-one and stage-two is designed to recover graphite concentrate by froth flotation, with ore from the mine to be primary, secondary and tertiary stage-crushed, followed by grinding, flotation, filtering, sizing and drying, before being bagged and containerised for shipment. The results presented for stage-one are based on an annual process plant treatment of 100,00tpa, with stage-two based on 1.65mtpa.

#### **5. Infrastructure and Logistics**

##### ***Process plant and infrastructure***

The stage-one process plant and infrastructure includes a water supply pipeline, a tailings storage facility, access roads within the plant and the project site and a process plant, including complementary equipment, diesel generators and office facilities.

The stage-two process plant and infrastructure includes all of the above, except diesel generators are replaced with a transmission line and the water supply pipeline is supplemented by water supply bores and a desalination facility.

##### ***Electricity***

Electricity for stage-one is expected to be sourced from diesel generators, with stage-two electricity expected to be supplied from an existing 11-33kV transmission line that supplies power to customers between Cleve and Arno Bay. The transmission line, which is owned and operated by SA Power Networks (SAPN), is approximately 14km to the north of Siviour.

##### ***Water supply and management***

Stage-one water is expected to be supplied from a SA water pipeline. Stage-two water supply is based on supplying the plant with ground water from local bore holes. For stage-two, it is

expected that water will be desalinated on site by reverse osmosis and blended for plant treatment purposes, with waste brine re-injected to an aquifer and tails returned to the pit.

### **Transport**

Concentrates in stage-one and stage-two will be bagged and containerised for road transport from the project site to Port Adelaide. It is proposed that concentrates will be packed, bagged and loaded at the plant. The transport route from the project site to Port Adelaide is generally approved for use by restricted access vehicles, such as road trains, with the exception of approximately 5km of road covering the distance from the project site and an arterial road that connects to the Port Lincoln Highway.

### **Workforce**

It is expected that Renascor will employ the majority of personnel for both stage-one and stage-two from local communities within the vicinity of the project site, with personnel not based in the district having access to air service from Adelaide to either Port Lincoln or Whyalla. Housing will not be provided on site, with personnel expected to reside in nearby townships. Significant medical requirements are expected to be sourced from Cleve, Tumby Bay, Port Lincoln or Whyalla hospitals, with emergency response and first aid services to be maintained on site.

## **6. Environmental and Social Permitting Requirements**

Renascor has initiated studies as part of the compliance and permitting process to establish baseline characteristics, including studies relating to climate, hydrogeology, pedology, ecology, relief and drainage, air, water and noise quality and social conditions, including economic activities, infrastructure and services. Preliminary studies have not indicated material impediments to the proposed development of Siviour of either stage-one or stage-two.

As part of the permitting process, Renascor has commenced a comprehensive environmental and social impact assessment. It is anticipated that these assessments will support an application for a Mining Lease (ML) under Section 35 of South Australia's Mining Act 1971. Approval of a Program of Environmental Protection and Rehabilitation (PEPR) will be required after ML approval to enable operations to commence.

## **7. Product Pricing**

Product pricing has been calculated for both stage-one and stage-two based on the price assumptions incorporated in the Siviour Scoping Study and shown below in table 5. The basket price adopted for stage-one and stage-two equates to US\$953 and US\$1,051, respectively.

| Flake category | Particle size |              | Pricing – FOB (US\$/t) |
|----------------|---------------|--------------|------------------------|
|                | Microns (µm)  | Mesh (#)     |                        |
| Jumbo          | >300          | +48          | \$2,100                |
| Large          | 180 to 300    | -48 to +80   | \$1,450                |
| Medium         | 150 to 180    | -80 to +100  | \$1,150                |
| Small          | 75 to 150     | -100 to +200 | \$750                  |
| Fine           | <75           | -200         | \$425                  |

**Table 5. Graphite pricing assumptions**

## 8. Capital Costs

Estimated pre-production capital costs for each of stage-one and stage-two are provided below in Table 6.

| Category            | Stage-one   |             | Stage-two    |              |
|---------------------|-------------|-------------|--------------|--------------|
|                     | AU\$ (m)    | US\$ (m)    | AU\$ (m)     | US\$ (m)     |
| Process Plant       | 8.5         | 6.6         | 87.9         | 68.6         |
| Site Infrastructure | 2.5         | 1.9         | 16.7         | 13.0         |
| EPCM                | 1.0         | 0.8         | 15.3         | 11.9         |
| Contingency         | 1.1         | 0.8         | 5.1          | 4.0          |
| Owners' costs       | 1.1         | 0.9         | 15.7         | 12.2         |
| Other               | 1.8         | 1.4         | 3.1          | 2.4          |
| <b>Total</b>        | <b>15.9</b> | <b>12.4</b> | <b>143.9</b> | <b>112.2</b> |

Table 6. Pre-production capital cost estimate summary

## 9. Operating Costs

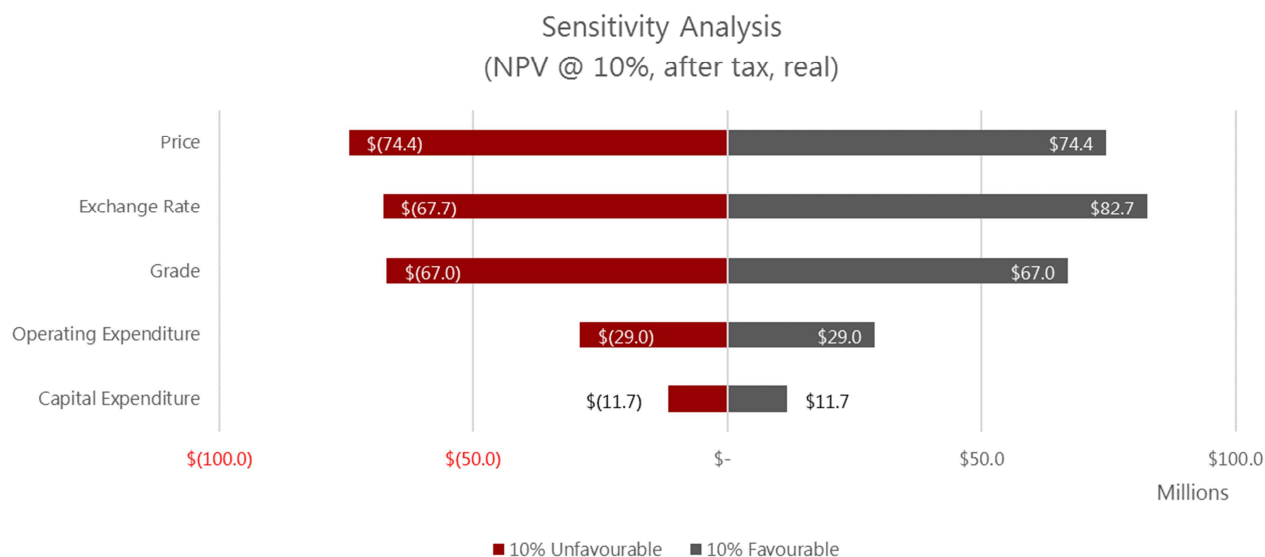
Estimated annual cash operating costs for stage-one and stage-two are provided below in Table 7.

| Category                      | Stage-one  |            | Stage-two  |            |
|-------------------------------|------------|------------|------------|------------|
|                               | AU\$/t (m) | US\$/t (m) | AU\$/t (m) | US\$/t (m) |
| Mining and technical services | 126        | 98         | 118        | 92         |
| Processing and power          | 350        | 273        | 225        | 176        |
| General and administration    | 23         | 18         | 19         | 15         |
| Product logistics FOB         | 90         | 70         | 90         | 70         |
| <b>Total</b>                  | <b>589</b> | <b>459</b> | <b>452</b> | <b>353</b> |

Table 7. Operating cost estimate summary

## 10. Financial Sensitivities

The sensitivity of the net present value (10% discount rate, after-tax) for the combined stage-one and stage-two operations as expressed in Australian Dollars to changes in product price, exchange rate, grade, operating expenditure and capital expenditure is set out below in Table 8.



| Variable              | -10% unfavourable |          | +10% favourable |          |
|-----------------------|-------------------|----------|-----------------|----------|
|                       | AU\$ (m)          | US\$ (m) | AU\$ (m)        | US\$ (m) |
| Capital Expenditure   | \$358             | \$279    | \$382           | \$298    |
| Operating Expenditure | \$341             | \$266    | \$399           | \$311    |
| Grade                 | \$303             | \$236    | \$437           | \$341    |
| Exchange Rate         | \$302             | \$236    | \$453           | \$353    |
| Price                 | \$295             | \$230    | \$444           | \$347    |

**Table 8. NPV sensitivity**

## 11. Preliminary Schedule

The preliminary project development schedule for the staged approach is based on obtaining mineral lease approval and completing all feasibility studies in 2018. The schedule calls for obtaining stage-one finance and commencing detailed stage one design work in the second half of 2018. Subject to obtaining stage-one funding and relevant project approvals, stage-one construction and the commencement of stage-one operations is scheduled for 2019. The schedule calls for obtaining stage-two financing and commencing detailed stage-two design work in 2021. Subject to obtaining stage-two funding and relevant project approvals, stage-two construction and the commencement of stage-two operations is scheduled for 2022. See Table 9.

| Year                                       | 2017 |    | 2018 |    |    |    | 2019 |    |    |    | 2020 |    |    |    | 2021 |    |    |    | 2022 |    |    |    | 2023 |    |    |    |
|--------------------------------------------|------|----|------|----|----|----|------|----|----|----|------|----|----|----|------|----|----|----|------|----|----|----|------|----|----|----|
| Calendar Quarter                           | Q3   | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 |
| PFS                                        |      |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Preliminary environmental assessment       |      |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| DFS                                        |      |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Mineral Licence Approval                   |      |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Financing - Stage 1                        |      |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Detailed design and procurement- Stage 1   |      |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Construction of processing plant - Stage 1 |      |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Operations - Stage 1                       |      |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Financing - Stage 2                        |      |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Detailed design and procurement - Stage 2  |      |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Construction of processing plant - Stage 2 |      |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |
| Operations - Stage 2                       |      |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |

**Table 9. Project implementation schedule**

## Material Assumptions

Material assumptions used in the estimation of the production targets and associated financial information are set out in the following table.

| Criteria                                                            | Commentary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| <b>Study Status</b>                                                 | The production target and financial information in this announcement are based on a scoping study level assessment. The study referred to in this announcement is based on low-level technical and economic assessments and is insufficient to support the estimation of Ore Reserves or to provide assurance of an economic development case at this stage or to provide certainty that the conclusions of the study will be realised.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Mineral resource estimate underpinning the production target</b> | The Mineral Resource estimate declared in March 2017 (see Renascor ASX announcement dated 17 March 2017) underpins the production target. This estimate was prepared by a Competent Person in accordance with JORC Code 2012 (the JORC Code). The JORC Code (Clause 49) requires that industrial minerals must be reported <i>“in terms of the mineral or minerals on which the project is to be based and must include the specification of those minerals”</i> and that <i>“it may be necessary, prior to the reporting of a Mineral Resource or Ore Reserve, to take particular account of certain key characteristics or qualities such as likely product specifications, proximity to markets and general product marketability.”</i> The likelihood of eventual economic extraction was considered in terms of possible open pit mining, likely product specifications, possible product marketability and potentially favourable logistics to port. |
| <b>Mining factors or assumptions</b>                                | Mining is based on an open cut operation utilising conventional drill and blast, load and haul and crusher feed, with mining to be undertaken by experienced mining contractors. It is expected that wet or paste tailing would be disposed in-pit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Metallurgical factors or assumptions</b>                         | The mineral processing parameters for stage-one are based on test work completed in July 2017 at ALS Metallurgy (Adelaide) on a composite sample from 14 diamond drill holes drilled within the Siviour mineralised body which achieved average purity of 95% TGC and recovery of 91% TGC. Parameters for stage-two are based on test work completed in March 2017 on three composite samples obtained from core samples from 16 diamond holes drilled within areas of the Siviour mineralised body which achieved average purity of 94% TGC and recovery of 87% TGC. In each case, the samples were selected on the basis of being representative of the typical mineralised zone within each                                                                                                                                                                                                                                                             |

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|                                     | <p>core hole. Examination of these samples has demonstrated continuity of the quality of the graphite. For purposes of both stage-one and stage-two, a process flowsheet has been adopted which is similar to flowsheets that have been adopted by similar flake graphite operations. Further test work is currently underway, including further optimisation work, variability testing, salinity testing and the generation of a bulk sample.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Infrastructure and logistics</b> | <p>The infrastructure required to support the plant and mine is based on potable water for stage-one and raw water and process dams, water supply bores and a reverse osmosis facility for stage-two; access roads within the plant and project site and the process plant, together with complementary equipment and facilities. Power is based on diesel generators for stage-one and, for stage-two, access to on-grid power from South Australia Power Network (SAPN) and subsequently negotiating a contract tariff with electricity providers. Renascor has commenced discussions with SAPN to access its existing line located approximately 14km north of the project area. For stage-one, water is expected to be supplied from SA Water. Stage-two water is expected to be supplied from local boreholes and provision is made for desalination on site by reverse osmosis. Waste brine would be re-injected to an aquifer and tails returned to the pit. Transport for both stage-one and stage-two is based on road haulage from the project site to Port Adelaide.</p>                                                                                                                                                                                                                                                                                         |
| <b>Capital costs</b>                | <p>The capital cost estimate for the stage-one process plant has been compiled by Minnovo Pty Ltd based on a high level preliminary process design, for the design, supply, fabrication, construction and commissioning of the process plant facility. The high-level process flowsheet and preliminary mass balance prepared by Renascor underlie the basis of this estimate. The estimate has been prepared based upon, current in-house data from recent projects and industry standard estimating factors and benchmarking against other projects, and excludes duties and taxes, working capital, financing costs, relocation and resettlement costs, rehabilitation and closure costs. A project contingency allowance of 10% has been applied to the estimate. The stage-one process plant cost estimate was compiled in AU\$ with a base date of Q3 2017 with no allowance for escalation to an accuracy of +/-35%. EPCM refers to engineering, procurement and construction management costs and is applied at a rate of 12% of plant costs. The stage-one estimate for site infrastructure was prepared by Renascor and includes an allocation for the initial pre-strip prepared by Optima Consulting and allocations for tailings disposal, roads and associated infrastructure and site preparation. A project contingency of 10% has been applied to site</p> |

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|                               | <p>infrastructure. The estimated owners' costs was prepared by Renascor based on comparable projects and includes allocations for land acquisition and bonding requirements. All stage-two capital costs are based on estimates included in the Siviour Scoping Study. See Renascor's ASX announcement dated 23 May 2017.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Operating costs</b>        | <p>The operating cost estimate for stage-one includes all costs associated with mining, processing, infrastructure, and site-based general and administration costs. The operating cost estimate is presented on an annualised basis and there has been no allowance for initial ramp-up periods or contingencies applied. The operating costs have been developed in AU\$ by Renascor, with mining cost data provided by Optima Consulting, water costs provided by Ground Water Science and power costs provided by George Wilby. Renascor provided labour force estimates based on industry standards from similar operations. The estimate for product logistics was taken from the Siviour Scoping Study. All stage-two operating costs are based on estimates included in the Siviour Scoping Study. See Renascor's ASX announcement dated 23 May 2017. In all cases, the operating cost estimates exclude exchange rate variations, price escalation and interest charges.</p>                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Revenue factors</b>        | <p>Revenue from the project is derived from the sale of graphite concentrates. Renascor has established the characteristics of expected final products through test programs undertaken on composite samples from Siviour core. Renascor has received market feedback that graphite concentrates produced to a minimum purity of approximately 94% TGC will be attractive to potential customers at premium or near premium pricing levels (provided the concentrates do not otherwise contain any potentially disqualifying contaminants). Accordingly, Renascor designed its metallurgical test work to meet this minimum purity threshold. Renascor has received additional market feedback regarding the potential benefits of increasing purity levels to make its graphite concentrates more attractive to potential customers. Renascor's continuing metallurgical work will include investigations designed to further increase the purity of Renascor's concentrates, while maintaining other variables (e.g. flake size, recoveries and capital and operating costs) at optimal levels. Product prices are based on discussions with end-users and market professionals and examination of other studies. Risks associated these assumptions used in product pricing include that the product split is not achieved and that the price assumptions are not met by the prevailing graphite market.</p> |
| <b>Schedule and timeframe</b> | <p>The project development schedule is based on</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

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|                          | <p>completing a pre-feasibility study, transitioning to a definitive feasibility study without material modification and having stage-one funding readily in place to commence construction of stage-one in 2019 and having stage-two funding to commence construction in 2022. The schedule assumes a likely EPC implementation strategy. The project implementation schedule estimates a timeline of approximately 12 months for state-one and 18 months for stage-two from funding approval to operation. The schedule assumes that permitting progresses concurrently with the schedule.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Market assessment</b> | <p>The majority of current world demand for graphite (&gt;80%) is driven by industrial applications (steel making, refractories and lubricants) that are growing at around 3% per annum. The lithium ion batteries represent a potential high growth area due to the impact of electric vehicles and grid power storage. Other new applications comprising expandable graphite (flame retardant materials, graphite foil, graphite paper, knitted tape), and specialist applications (micronised graphite, and graphene) are leading to an increase in demand.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Funding</b>           | <p>To achieve the range of outcomes indicated in this staged study, funding in the range of AU\$17.0m or US\$13.3, for stage-one and AU\$150m or US\$117m for stage two will likely be required for capital works, pre-production working capital and contingency. It is anticipated that the finance will be sourced through a combination of equity and debt instruments from existing shareholders, new equity investment and debt providers from Australia and overseas.</p> <p>The Company has sufficient cash on hand at the date of this announcement to undertake the next stage of planned work programs, including continued metallurgical testing, and the commencement of advanced mining, geotechnical, hydrogeological and other technical studies, completion of the Siviour Pre-Feasibility Study and completion of a mineral lease application.</p> <p>Renascor's Board believes that there is a reasonable basis to assume that funding will be available to complete all feasibility studies and finance the pre-production activities necessary to commence production on the following basis:</p> <ul style="list-style-type: none"> <li>• Renascor's Board and executive team have a strong financing track record in developing resources projects;</li> <li>• The Company has a proven ability to attract new capital;</li> <li>• Renascor's Board believes this study demonstrates the project's strong potential to deliver favourable economic return; and</li> <li>• Other companies at a similar stage in</li> </ul> |

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|                          | development have been able to raise similar amounts of capital in recent capital raisings.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Economic</b>          | A discount rate of 10% has been used for financial modeling. This number was selected as a generic cost of capital and considered a prudent and suitable discount rate for project funding and economic forecasts. The model has been run as a life of mine model and includes sustaining capital and closure costs. The Study outcome was tested for key financial inputs including: basket price, capital and operating costs and US/AU exchange rate. All of these inputs were tested for variations of +/- 10%.                                                                                                                                                      |
| <b>Exchange rate</b>     | The exchange rate for the reporting of all results from stage one and stage two is AU\$1.00 = US\$0.78.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Social</b>            | The local community includes the townships of Arno Bay, Cleve, Port Neill and Cowell. Renascor has commenced meetings with stakeholders within these communities, and the general acceptance of the project has been favourable. There are no known community issues that Renascor has identified as being a likely material impediment to developing the project.                                                                                                                                                                                                                                                                                                       |
| <b>Other</b>             | There are several other material risks to this project including product price, competition, regulatory approval, social licence, scheduling and other risks typical of projects of similar scale.                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Audits or reviews</b> | This study was internally reviewed by Renascor and the following consultants: Christine Standing (Optiro) in relation to the Mineral Resource Estimate, Ben Brown (Optima Consulting), in relation to the mining component, Simon Hall, in relation to the metallurgical component, Ben Jeuken, (Groundwater Science) in relation to the hydrogeological component, Matthew Langridge, in relation to the process plant, Evelyn Poole, in relation to the environmental component, and George Wilby, in relation to logistics. No material issues were identified by the reviewers. All study inputs were prepared by Competent Persons identified in this announcement. |