

14 October 2020

## Quarterly Activities Report – September 2020

**ASX/TSX: CLQ**  
**OTCQX: CTEQF**

**Corporate Information:**

Ordinary shares: 746.5M  
Unlisted options: 13.4M  
Performance rights: 15.2M  
Cash at bank: A\$34.0M

**Co-Chairmen**  
Robert Friedland  
Jiang Zhaobai

**MD & CEO**  
Sam Riggall

**Non-Executive Directors**  
Judith Downes  
Eric Finlayson  
Ian Knight  
Stefanie Loader

**Company Secretary**  
Melanie Leydin

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### HIGHLIGHTS

- **Project Execution Plan confirms Sunrise as one of the world's lowest cost sources of sustainable nickel and cobalt**
- **Scandium offtake and collaboration with Relativity Space Inc.**
- **Drill program to test structure beneath high-grade Phoenix Platinum Zone outlined as part of existing 1,000,000 oz Pt resource at Sunrise**
- **Formal completion of water treatment plant at Victorian gold mine**

### About Clean TeQ Holdings Limited

Our vision is to empower the clean revolution by providing specialty materials and clean solutions to a range of industries using our proprietary Clean-iX<sup>®</sup> continuous ion exchange technology.

### Sunrise Battery Materials Complex

Sunrise is one of the largest and most cobalt-rich laterite deposits in the world. Once developed, the Project will become a globally significant producer of nickel sulphate and cobalt sulphate – key cathode materials for the electric vehicle battery market. Sunrise is also one of the largest and highest-grade scandium deposits in the world, positioning Clean TeQ to be a major supplier of low-cost scandium for production of next generation aluminium alloys for aerospace and automotive markets.

### Clean TeQ Water

Clean TeQ's water division delivers cost effective water treatment solutions to the power, mining, oil and gas and municipal industries using our proprietary technologies, including Continuous Ionic Filtration & Exchange (CIF<sup>®</sup>) and DeSALx<sup>®</sup>. These technologies are designed to cope with the most demanding waters to provide best in class performance in water recovery and operability.

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## SUNRISE BATTERY MATERIALS COMPLEX

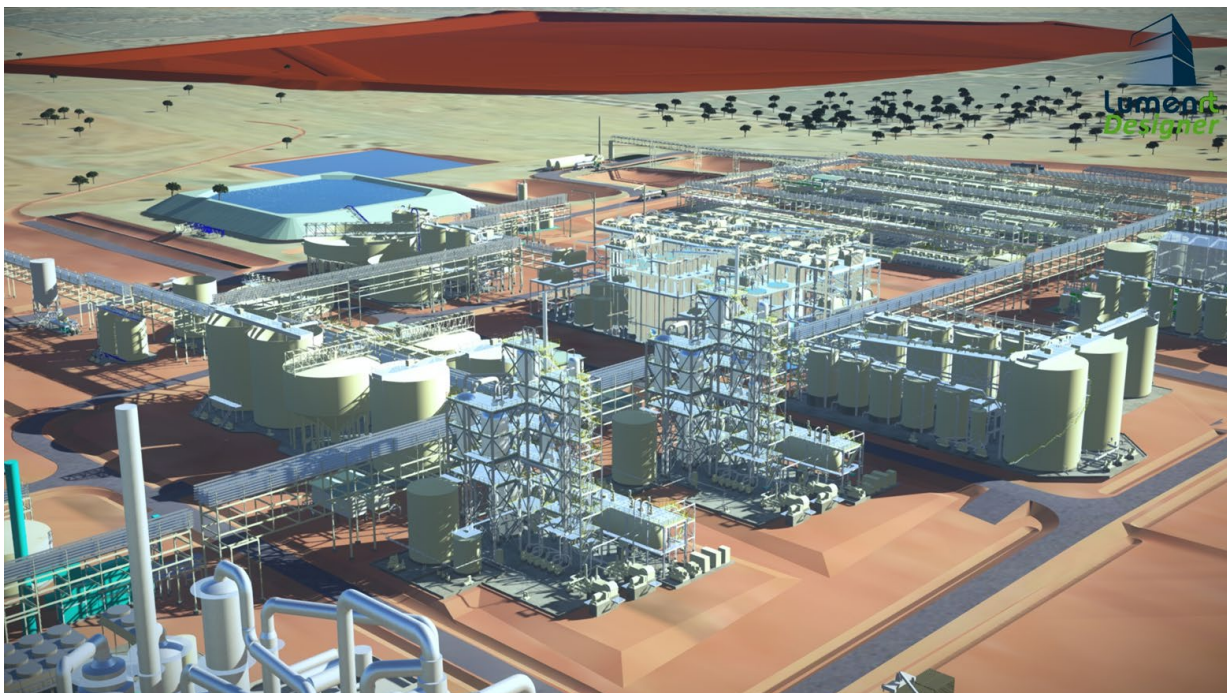
During the quarter, Clean TeQ Holdings Limited and its controlled entities (**Clean TeQ** or the **Company**) continued to advance the development of the Sunrise Battery Materials Complex (**Sunrise** or **Project**) in New South Wales, Australia.

### Project Execution Plan

During the quarter the Company completed the Project Execution Plan (**PEP**) in conjunction with Fluor Australia Pty Ltd (**Fluor**), part of the Fluor global engineering group headquartered in Irving, Texas.

Undertaken by an integrated Clean TeQ and Fluor project delivery and engineering team, the PEP updated the 2018 Definitive Feasibility Study (**DFS**), incorporating revised cost estimates, design and engineering work to date, as well as a revised master schedule for the engineering, procurement, construction, commissioning and ramp-up of the Project.

The PEP outcomes confirm Sunrise's status as one of the world's lowest cost, development-ready sources of critical electric vehicle battery materials. In production it will be a major supplier of nickel and cobalt to the lithium-ion battery market, and scandium to the aerospace, consumer electronics and automotive sectors.



*Three-Dimensional Image of the Clean TeQ Sunrise Process Plant Facilities*

On 1 October 2020 CEO and Managing Director, Sam Riggall, hosted the Clean TeQ Battery Metals Day Webcast with other members of the management team to discuss battery materials market developments and present the highlights of the Sunrise Project Execution Plan. A recording of the Battery Metals Day Webcast is available to watch here: [https://youtu.be/oxqJt27VH\\_4](https://youtu.be/oxqJt27VH_4)

Highlights<sup>1</sup> of the PEP include:

- The PEP results have been finalised at a time of encouragingly strong market demand for EVs, particularly in Europe, as new EU emissions standards take effect and carmakers begin to focus on the environmental and social aspects of supply chains. Despite significant economic uncertainty created by COVID-19, global electric vehicle sales surged in June and July and are, again, back to a healthy growth trajectory.
- Benchmarked against other operations and process flowsheets, Sunrise is the template for sustainable, reputable and auditable nickel and cobalt supply for the next generation of electric vehicles.
- The PEP modelled the first 25 years of production, with sufficient ore reserves to extend operations up to approximately 50 years.
- Long-term nickel and cobalt sulphate price forecasts obtained from independent expert Benchmark Mineral Intelligence. Weighted average forecast (metal equivalent) sulphate prices over the life of mine are approximately:
  - Nickel: US\$24,200/t (including sulphate premium).
  - Cobalt: US\$59,200/t.
- The PEP scope of works included a range of studies which have optimised metal production rates while holding autoclave ore feed constant at the approved maximum 2.5 million tonnes per annum. Average annual (metal equivalent) production rates are:
  - 21,293 tonnes nickel and 4,366 tonnes cobalt (Year 2 – 11).
  - 18,439 tonnes nickel and 3,179 tonnes cobalt (Year 2 – 25).
- The Project is forecast to deliver over US\$16 billion in revenue and average annual (real) post-tax free cashflow of US\$308 million over the first 25 years of operations.
- Strong cash flows result in a post-tax net present value<sup>2</sup> (**NPV**) of US\$1.21 billion (A\$1.72 billion<sup>3</sup>) and post-tax Internal Rate of Return (**IRR**) of 15.44%.

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<sup>1</sup> For full details see ASX announcement dated 28 September 2020

<sup>2</sup> Ungeared net present value calculated using real 8% discount rate

<sup>3</sup> AUD/USD 0.70 exchange rate applied for life of mine

- High cobalt credits result in very low average C1<sup>4</sup> operating costs of negative US\$1.97/lb of nickel after by-product credits<sup>5</sup> (US\$4.31/lb nickel before credits) in years 2-11.
- Average C1 operating costs of negative US\$0.80/lb nickel after by-product credits (US\$4.58/lb nickel before credits) over years 2-25, positioning the Project to generate high margins and strong cash flows over many decades.
- Global supply of scandium oxide is approximately 10-15 tonnes per annum. Consistent with the Company's strategy of facilitating wider-scale adoption in key emerging markets (such as high-performance aluminium alloys), Clean TeQ has adopted a long-term scandium oxide price assumption of US\$1500/kg in the PEP.
- Scandium oxide refining capacity of up to 20 tonnes per year installed from year three, which can be readily expanded to 80 tonnes per year with approximately A\$25 million capital expenditure on additional refining capacity. As the scandium market grows, future investment in a dedicated resin-in-pulp scandium extraction circuit and further refining capacity offers the potential to increase by-product scandium production to up to approximately 150 tonnes per annum.
- The PEP conservatively ramps up scandium oxide sales from 2 to 20 tonnes per year over the first decade of the mine life. Clean TeQ has existing offtake heads of agreement with companies including Panasonic Corporation Global Procurement Company and Relativity Space, Inc. and programs underway with a range of additional parties to develop new light-weight aluminum scandium alloys for the aerospace, additive layer manufacturing, consumer electronics and automotive sectors.
- Pre-production capital cost estimate of US\$1.658 billion (A\$2.368 billion) (excluding US\$168 million estimated contingency) reflects a significantly de-risked capital cost, with approximately 79% of total equipment and materials costs covered by vendor quotations. Submissions were also obtained from contractors to validate the labour costs included in the total direct cost.
- Future value optimization studies will assess opportunities to reduce capex in areas of off-site pre-assembly, modularization and low-cost offshore procurement.
- The PEP assumed Project execution on an engineering, procurement, construction management (**EPCM**) basis. Prior to making a final investment decision (**FID**), Clean TeQ will select an EPCM contractor for the engineering, procurement and construction phase of the Project.
- Engineering, procurement and construction schedule from signing of an EPCM contract to first production of approximately three years, followed by a 24-month ramp-up to full production.

<sup>4</sup> C1 Cash Cost includes mining, processing, site overhead/admin, haulage and port charges

<sup>5</sup> By-products include cobalt, scandium oxide and ammonium sulphate

## Broad Stakeholder Benefits

Sunrise is set to deliver significant economic and social benefits to a range of stakeholders over many decades, including safe and well-paid employment, infrastructure upgrades, royalties, taxes and local community contributions. Over the initial 25 year mine life the PEP estimated the following:

- Construction workforce forecast to peak at around 1700 full-time equivalent jobs during three-year EPCM period.
- Steady-state operations workforce of approximately 377 people (not including maintenance support and mining and drilling contractors) to generate strong employment opportunities in the state of New South Wales, Australia. The majority of these workers are expected to reside in local communities.
- Employee salaries/wages of approximately A\$1.2 billion (excluding mining contractor wages and logistics contractors and ancillary services).
- Local community contributions in excess of an estimated A\$17 million including payments to compensate communities for local project impacts (principally road upgrades and maintenance) and additional ongoing local community enhancement initiatives. Telecommunications will also be greatly enhanced around the Project area, to the benefit of local residents.
- Services and supply opportunities are also expected for local businesses as suppliers of goods and services to Clean TeQ Sunrise.
- State Royalties and payroll tax payments totalling A\$750 million.
- Commonwealth corporate tax payments of A\$3.5 billion.

## Sunrise Ongoing Works Programs

Although the level of activity associated with the PEP study and engineering works will now significantly reduce, a range of work-streams will continue in order to progress a number of value-adding deliverables aimed at minimising Project restart time once funding is secured:

- Work will be progressed on the long-lead electrical transmission line ('ETL') work scope. The ETL application to connect to the NSW electrical grid is currently in progress and will continue through FY21.
- Progressing ongoing commercial discussions with landowners, local councils, the NSW state government and other impacted parties required for land access agreements for key infrastructure including the water pipeline and the ETL.
- Surveying and planning for autoclave and oversize equipment transport routes to site.

- Preliminary investigations to be undertaken on our exploration licences for limestone resources, a key process reagent for which the Company currently has a supply contract in place with a third party.
- Testwork and process development work assessing opportunities for potential further downstream processing of sulphates into battery precursor materials.
- Ongoing environmental work including monitoring and compliance reporting.
- The Sunrise Community Consultative Committee will be maintained along with a number of local community engagement/support programs.
- A range of scandium alloy development programs will continue to be progressed, consistent with Clean TeQ's long term strategy to work with, and assist, industry players to investigate and develop new applications for scandium-aluminium alloys.

### **Funding and Development**

COVID-19 has presented difficult conditions for financial markets and challenges for funding new projects. Pleasingly, though, engagement with the automotive and mining sectors on Sunrise remains on-going, despite these challenges.

While the timing for completion of a transaction is not possible to forecast, Clean TeQ will continue to engage with potential partners across the supply chain.

### **Scandium Marketing**

During the quarter the Company formed a collaboration program with Relativity Space, Inc. (**Relativity**) to develop scandium-aluminium alloys for 3D printing of launchers for commercial orbital launch services.

The two companies have also agreed a binding Scandium Offtake Heads of Agreement for the Company to supply scandium oxide (volumes to be determined at Relativity's election) from Clean TeQ's Sunrise Project in NSW, Australia.

Headquartered in Los Angeles, California, Relativity Space, Inc. is a private American aerospace manufacturing company which is developing its Terran 1, the world's first 3D printed space launch rocket, and Aeon engines for commercial orbital launch services.

Aerospace manufacturing has traditionally relied on large factories, fixed tooling, complex supply chains and extensive manual labour to build costly rockets comprised of 100,000+ parts, with lead-times of two years or more. Relativity has engineered and built the Stargate factory, the first aerospace platform to automate rocket manufacturing, vertically integrating intelligent robotics, software, and data-driven 3D printing technology.



***3D printing of the Terran 1 launch vehicle at Relativity's Stargate factory***



***Encompassing four buildings with 20,000 square feet of office space and production facilities, Relativity's LA facility houses design, engineering, and production of the Terran 1 launch vehicle and the Stargate printers***

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Incorporating the world's largest metal 3D printers and artificial intelligence driven controls, the Stargate factory continuously optimizes production, resulting in greatly enhanced quality and time improvements, lower costs and part counts, and product designs previously not possible. Relativity has developed multiple proprietary alloys, custom designed for 3D printing to meet mission-critical performance.

The collaboration is consistent with Clean TeQ's long term strategy, led by Dr. Timothy Langan, manager of Clean TeQ's scandium alloy development programs, to assist industry players to investigate and develop new applications for scandium-aluminium alloys. The Company's aim is to stimulate growth in demand for the material which will be converted into sales of scandium from the Sunrise Project once it is in operation.

### **Phoenix Platinum Zone**

During the quarter the Company announced that an area of high-grade platinum mineralisation has been defined within the Sunrise laterite resource based on downhole intersections from earlier drilling campaigns, forming a newly-classified Phoenix Platinum Zone.

The Sunrise laterite hosts a significant resource<sup>6</sup> of 103.1 Mt @ 0.33 g/t Pt for 1,076,170 ounces of platinum, using a 0.15 g/t Pt cut-off grade, making it one of the largest platinum resources in Australia. Of this total resource, approximately 90% (metal content) is in the measured and indicated categories. While the average grade over the global resource is relatively low, areas of significantly higher-grade platinum mineralisation exist within the resource envelope – the Phoenix Platinum Zone.

The Sunrise Project is located approximately 5km northwest of Fifield, at the eastern end of an intrusion known as the Tout Intrusive Complex. The core of the intrusive body is a dunitic, olivine-rich igneous rock of ultramafic composition, exhibiting a coarse-grained texture and surrounded by pyroxenite and gabbro. The surface expression of this magmatic system is a nickel-cobalt-scandium bearing laterite that forms the existing ore reserve<sup>7</sup> for the Sunrise Project. The laterite is the product of weathering and decomposition of one or more dunite pipes, resulting in the gradual concentration of metals near surface.

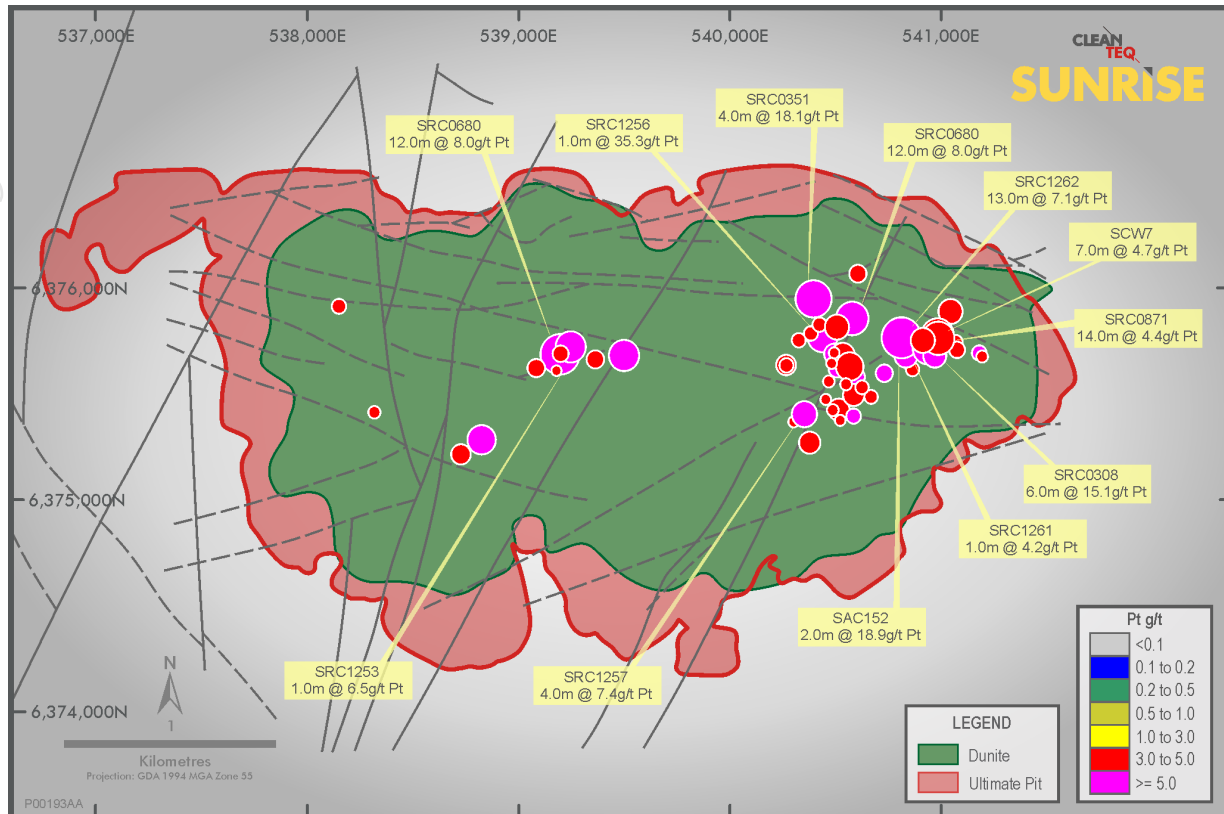
Current interpretations of platinum distributions across the laterite suggest that the higher-grade accumulations have formed above one or more primary platinum sources within the underlying dunite. This has resulted in two zones of higher-grade accumulation – one in the east and one in the west – separated by a paleochannel, assumed to be comprised of mostly barren sediment.

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<sup>6</sup> For full details see ASX announcement dated 25 June 2018.

<sup>7</sup> For full details see the ASX announcement dated 28 September 2020





**Plan view of historic drill hole locations with significant Pt intersections within the Phoenix Platinum Zone**

Despite extensive drilling over previous decades, only a handful of holes have been drilled beneath the Sunrise laterite. Of these, significant historic downhole intersections include<sup>8</sup>:

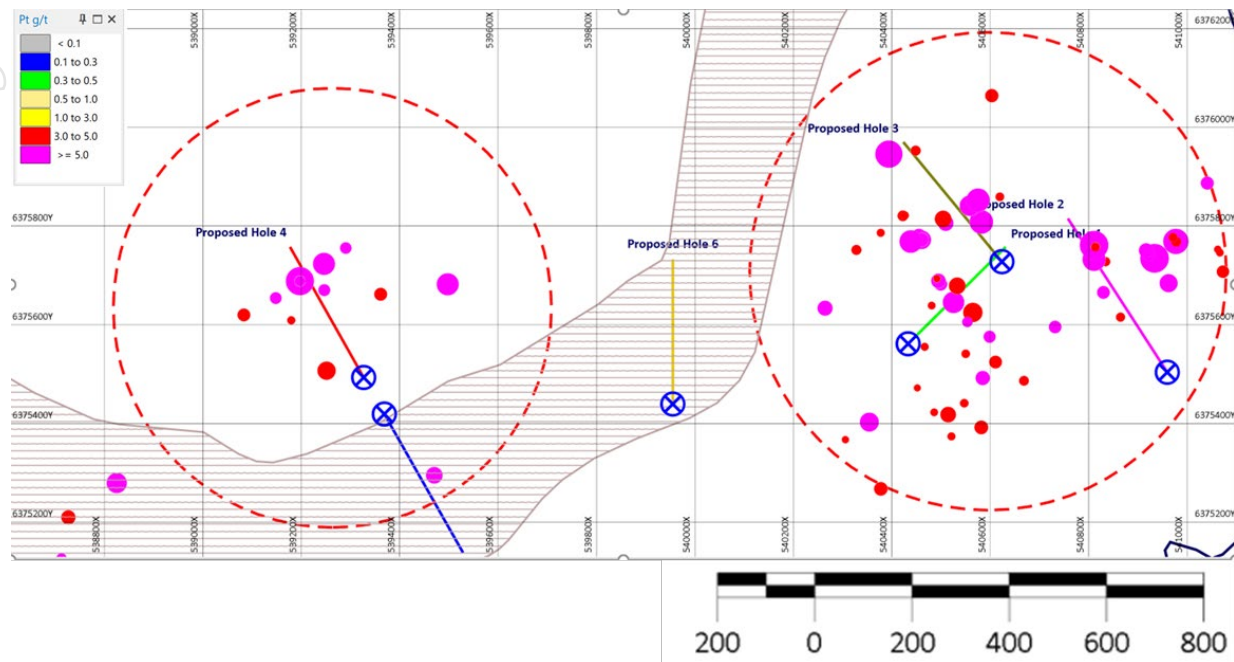
- 4m (from 119m) @ 7.4g/t Pt, 0.13% Ni and 0.01% Co, for 29.4 g.m Pt (SRC1257)
- 1m (from 127m) @ 6.5g/t Pt, 0.15% Ni and 0.01% Co, for 6.5 g.m Pt (SRC1253)
- 1m (from 23m) @ 4.2g/t Pt, 0.15% Ni and 0.01% Co, for 4.2 g.m Pt (SRC1261)

All holes were drilled using reverse circulation rigs and no assays were undertaken for other PGEs in these drill samples.

Given the high platinum grades near surface and historic intercepts beneath the laterite, a program of work has commenced to test the structural geology of the Tout Intrusive Complex, targeting the establishment of a platinum resource that will either integrate

<sup>8</sup>For full details see ASX announcement dated 3 September 2020. Drilling undertaken by previous owner Ivanplats in 2005/06 with assays undertaken by ALS in Orange, NSW. Data is as per the drilling data records provided by Ivanplats to the Company. This historical data is relevant and material in the context of the deeper drilling program detailed herein. Although the Company is confident the drill data is accurate, the information is based on historic drilling and records and therefore does not conform to JORC 2012 standards.

with the development of the Sunrise nickel-cobalt-scandium mine, or be developed as a stand-alone operation.



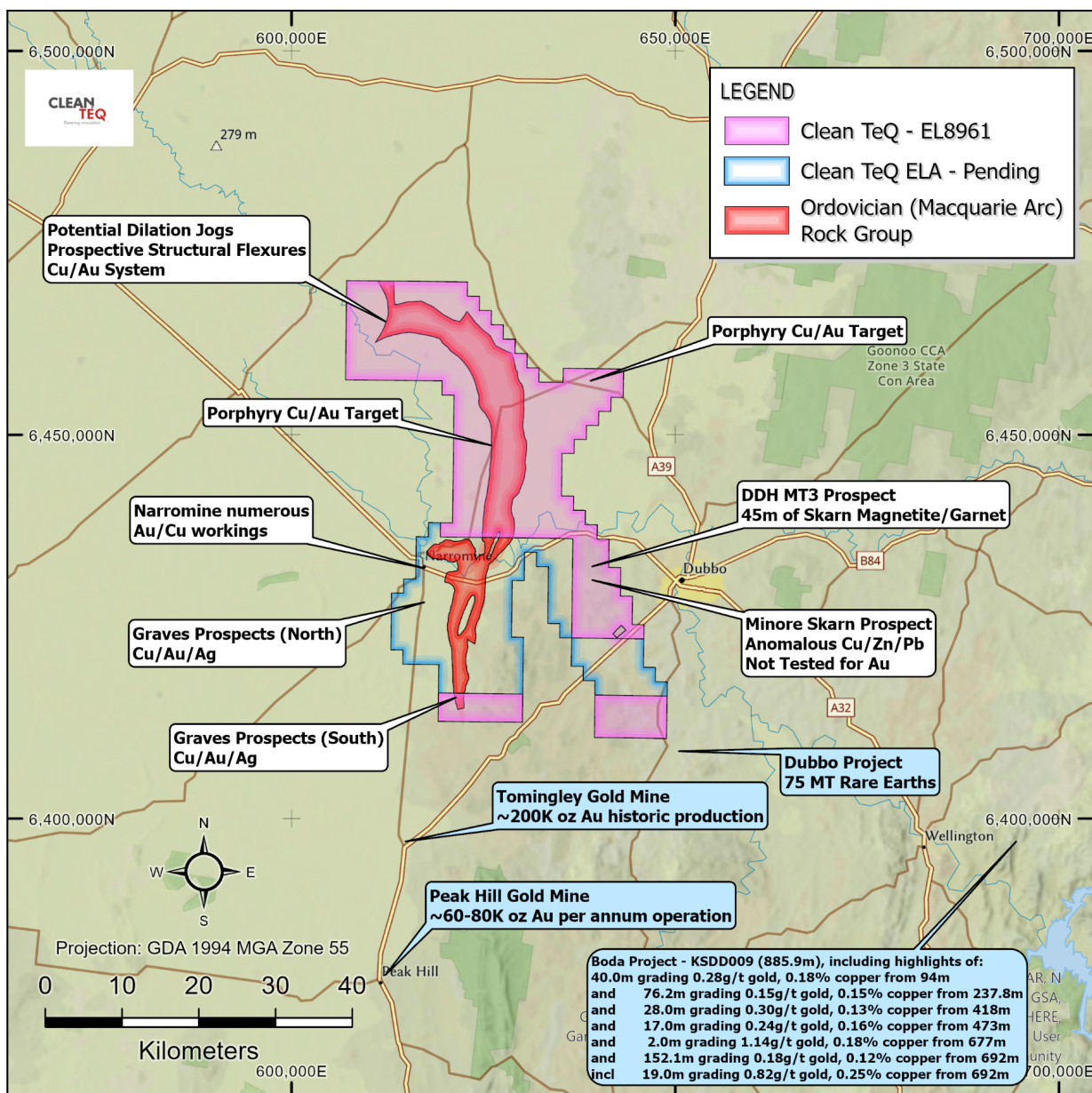
***Proposed drill hole locations to test the geological interpretation of the dunite pipes***

Future work to better define the Phoenix Platinum Zone includes:

- Diamond core drilling - a six hole drill program is planned for the second half of CY 2020. The program is aiming to intersect the dunite structures at depth (targeting 400-600m below surface).
- Geophysics –re-processing and interpretation of aeromagnetic and sub-audio magnetic (SAM) geophysical surveys over the Sunrise deposit is complete and has delineated local scale structures, magnetic zonation and pipe formations. The diamond program will aim to further calibrate and refine the current geophysical model.
- Metallurgy – the platinum in the Sunrise laterite reports predominantly as an isoferroplatinum, whose separation and recovery via simple gravity circuits can often be impeded by grain size and deportment of the platinum. The Sunrise hydrometallurgical process route (to extract nickel, cobalt and scandium) provides an opportunity to test the deportment characteristics of platinum in a system where iron is chemically altered (from goethite to hematite) via a pressure acid leach process.

**MINORE PROJECT**

In April 2020 the Company was granted Exploration Licence 8961 (Mining Act 1992) for Group One (1) metals (including base and precious metals) located near Dubbo and Narromine. Clean TeQ has also applied for an adjacent area subject to the existing Dubbo Mineral Allocation Area (MAA). The MAA system is a mineral exploration stimulus initiative by the NSW Government pursuant to which new exploration licence applications may not be lodged without Ministerial consent. The area is prospective primarily for copper/gold porphyry targets. During the quarter the Company received Ministerial consent for grant of the MAA area. That area is now the subject of a pending exploration licence application.



**EL8961 and pending ELA**

The tenement overlies what is interpreted to be Macquarie Arc Ordovician sequences and the St Andrews Beds in the Minore township. At Minore the sediments have been intruded and metamorphosed by the Devonian Yeoval Granite. Magnetite, copper, zinc, tungsten and trace lead mineralisation are known to occur at the prospect from work undertaken by CRA Exploration in the 1970's.

The area has been subject to limited mineral exploration, but there have been a number of shallow historic exploration drilling intercepts, largely drilled by CRA Exploration. The drilling targeted an outcropping north-west striking skarn, known as Minore, which exhibited boxwork structures and manganese in outcrop and magnetite, garnets, sulphides and epidote in fresher rock. The units dip moderately to the north-east where further structures of interest are noted from unprocessed Total Magnetic Intensity geophysical images. Reverse circulation drilling has intercepted anomalous copper, lead, zinc and tungsten intercepts, up to 3700ppm copper and 7m averaging 2000ppm copper from RC drilling. This drilling was followed up by 3 deeper (180m) diamond drill holes downdip of the anomalies. Two of these holes also intercepted similar anomalies. The host rocks have been logged as metamorphosed green quartzite, fine-grained grey laminated quartzite, quartzite and garnet (calc-silicate) hornfels, microgranite and fine-grained acid volcanics. Magnetite is closely associated with the garnet hornfels. The skarn is thought to have a strike extent of at least 1km.

Historic CRA diamond drill core is held at the Londonderry core library in NSW where Hylogger multispectral scans have recently been run on the core. Over the balance of 2020 Clean TeQ's geologists will further interpret this data while Southern Geoscience re-processes and interprets existing geophysical data over the area to better understand mineralisation target opportunities.

## CLEAN TEQ WATER

### Water Projects

During the quarter the Company announced successful achievement of formal completion and handover of a ground-breaking Continuous Ion Exchange Desalination (**DESALX**<sup>®</sup>) plant at the Fosterville Gold Mine owned by Kirkland Lake Gold Ltd. (TSX/NYSE: KL & ASX: KLA).

At the Fosterville Gold Mine in Victoria, Australia, Clean TeQ was engaged to design, supply and commission a two million litre-per-day Clean TeQ DESALX<sup>®</sup> mine water treatment plant. The plant is designed to deliver a sustainable water management solution by treating mine process water.



***Clean TeQ plant installation at Fosterville Gold Mine, Victoria***

The plant construction was completed in late 2019, with commissioning and operations commencing in early 2020. During the quarter the Clean TeQ designed and constructed plant passed the performance tests specified in the engineering, procurement and construction contract and the customer has issued a formal notice of acceptance and completion.

The DESALX<sup>®</sup> technology consists of two continuous ionic filtration (**CIF<sup>®</sup>**) modules in series removing divalent cations and anions present in the water through complementary processes. The CIF<sup>®</sup> modules contain ion exchange resins that are cycled between columns using air lifts, allowing for continuous operation and regeneration of the system. This system increases impurity removal efficiency, reduces chemical use, and provides protection against fouling. The DESALX<sup>®</sup> solution is well suited to purification of difficult to treat waste waters with high hardness, sulphate, and heavy metals as well as suspended solids which can foul reverse osmosis membranes. These types of waste waters are common in the mining industry, including acid mine drainage water.

At Fosterville, the equipment provided by Clean TeQ includes a precipitation package to remove antimony and arsenic. The effluent from the clarifiers is treated by the DESALX<sup>®</sup> plant to remove Sulphate, Calcium, and Magnesium with gypsum as the only by-product. The DESALX<sup>®</sup> effluent is then further treated by reverse osmosis to produce water for re-use. The Clean TeQ system is a key enabling component of the customer's overall water management strategy which includes a medium-term target of creating a true 'zero liquid discharge' solution that does not produce any saline brine and includes aquifer reinjection.



***Clean TeQ Continuous Resin-In-Column Ion Exchange plant in DRC***

In the DRC, Clean TeQ has been engaged to design and construct a Continuous Resin-In-Column (**cLX**) Ion Exchange plant to treat up to 20 million litres-per-day of a raffinate stream, removing contaminant metals and improving the quality and environmental rank of the raffinate, prior to further processing. All construction was completed during 2019 with hot commissioning commencing shortly thereafter. Initial tests showed that the cLX plant was performing well, exceeding design expectations. However, an accidental uncontrolled release of very high-pressure water from the main plant into the cLX system resulted in some damage being caused to the Clean TeQ plant, taking it offline. Repairs, as well as some other changes to the plant and process, are now close to completion. A restart of the plant was targeted for June, with performance testing of the cLX system to follow thereafter, but this timing is now highly uncertain given COVID-19 restrictions. Re-commissioning is expected to take around 8 weeks.

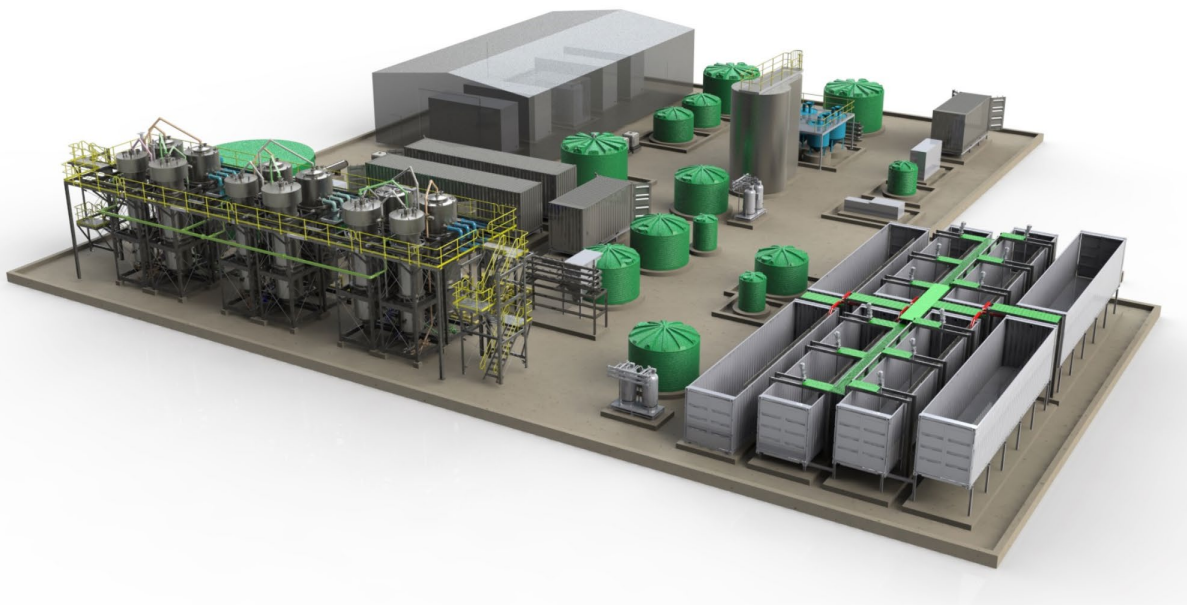
The plants delivered in Oman, Australia and DRC are the first of their type anywhere in the world and have been deployed as part of three different technical solutions. The successful delivery and commissioning of these plants provides strong demonstration of the efficacy of Clean TeQ's suite of proprietary ion exchange technologies and their versatility for metal extraction and waste water treatment. As commercial scale plants, the facilities provide a valuable platform from which to now rapidly grow Clean TeQ Water.

The mining and minerals processing industry provides Clean TeQ Water with significant opportunities across the globe. In particular, large-scale mining businesses in Latin America are in urgent need of integrated water management solutions to enable a move towards more sustainable operations and water-saving solutions. As a result of

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tightening environmental regulations and increasing social and environmental awareness among investors, other water stressed areas in parts of the Middle East, Africa, China, India, and Australia, are expected to see great investment into water management technologies, with a strong focus on water recovery and recycling, zero liquid discharge and metal recovery technologies. The global mining water and wastewater treatment market is estimated to be valued at approximately \$5 billion per annum, with projections that it will expand to approximately \$8 billion by the end of 2023<sup>9</sup>. With a demonstrable track record of successfully delivering customised water treatment solutions for a range of mining and mineral processing customers, Clean TeQ is uniquely positioned to capitalise on this growing market.

As the Company announced in March, strong progress is being made towards Clean TeQ securing an engineering, procurement and construction (**EPC**) contract with Townsville City Council for a large-scale water recycling plant utilizing our HiROx<sup>®</sup> process and BIOCLENS encapsulated bacteria. HiROx<sup>®</sup> is an ultra-high recovery water treatment process which combines Clean TeQ's CIF technology with reverse osmosis.



***Townsville Water Purification Plant Render: The Clean TeQ HiROx<sup>®</sup> plant combines Clean TeQ's continuous ion exchange technology with reverse osmosis and encapsulated bacteria***

Clean TeQ Water has been advised that it is the preferred contractor to deliver a recycled water re-use plant at the Cleveland Bay Purification Plant in Townsville, however, award of a final EPC contract is subject to a range of conditions including agreement on commercial terms, construction schedule and pricing. While the EPC

<sup>9</sup> Research and Markets: Growth Opportunities for Sustainable Solutions in the Global Mining Water and Wastewater Treatment Market, Forecast to 2023

contract discussions are ongoing, Townsville Council has engaged Clean TeQ on an initial scope of work valued at A\$920,000 for detailed design and procurement of long-lead items for the plant. This work is now underway. Although contract negotiations remain ongoing, Townsville Council has delayed the award of the contract and commencement of works due to COVID19 related council budgetary issues. Based on the latest feedback from Townsville, the Company anticipates that the majority of the EPC works will now not commence until July 2021 at the earliest.

### **BIOCLENS Manufacturing Facility**

In 2018, Clean TeQ acquired an encapsulated bacteria technology comprising technology licences and a production plant for the manufacture of bacteria encapsulated in a polyvinyl alcohol (PVA) lens (**BIOCLENS**). BIOCLENS offers significant opportunities in water treatment applications given the bacteria's ability to break down and remove over ninety percent of harmful nitrates and ammonia from wastewater. BIOCLENS, with encapsulated bacteria or enzymes, also has potential applications in the food and pharmaceuticals industries.

The bacteria are encapsulated in a plastic polymer in the shape of a lens. The lens shape and size are important as they ensure maximum biological activity while protecting the biology from potentially harmful environmental conditions.



**BIOCLENS lenses**

**BIOCLENS lens manufacturing plant in Tianjin**

In conventional biological purification processes, the salinity of the water suppresses the activity of the bacteria and limits its ability to remove ammonia and nitrate to the desirable levels for recycling. The BIOCLENS technology is highly amenable for application in the aquaculture sector because the polymer lens protects the bacteria to maintain high biological activity in this saline environment.

The Company has established the BIOCLENS production facility in China for its growing pipeline of potential water purification projects. Having completed the transportation and

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installation of the lens manufacturing equipment to a facility in Tianjin, trial production runs started in Q3 2019. Stable output at consistent quality from continuous operation was achieved in Q2 2020 and the Company is now piloting the BIOCLENS technology for potential customers as part of product marketing activities.

Clean TeQ has been awarded a contract to pilot the BIOCLENS technology to treat 100 cubic meters per day of wastewater produced by a shrimp farm located in Tianjin. The pilot trial run is scheduled to take place in Q4 2020. Aquaculture facilities around the world generate significant volumes of saline wastewater. The pilot run will confirm that the BIOCLENS technology can successfully reduce nitrate concentration in the wastewater effluent to below 5 ppm. Successful demonstration of this capability will allow Clean TeQ to enter the global aquaculture sector.

The BIOCLENS technology is also an important water purification process in the proposed Townsville Project where it is employed to reduce the nitrogen load of the wastewater effluent discharged from the facility.

Combined with Clean TeQ's proprietary ion exchange capability, the addition of BIOCLENS technology allows Clean TeQ Water to provide a broad suite of solutions to the global water treatment market that are focused on cost-effectiveness, performance and sustainability.

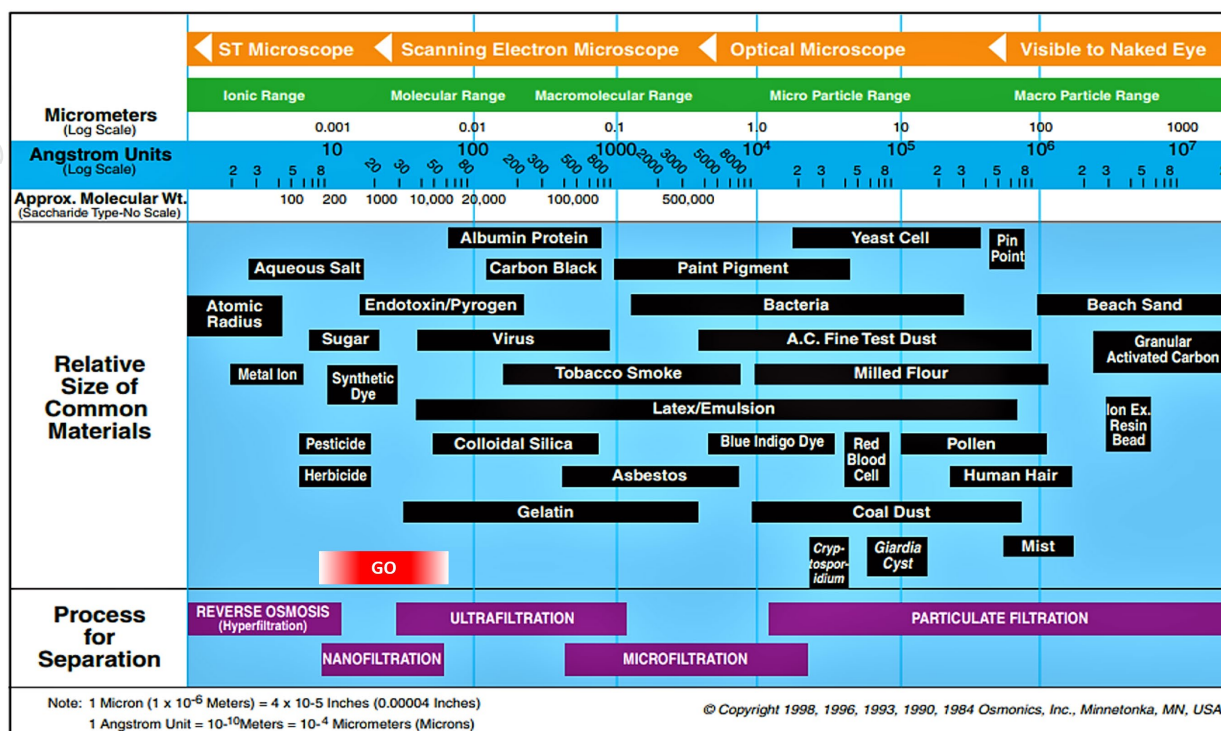
## TECHNOLOGY DEVELOPMENT

Clean TeQ's technology development team continues to advance its work in the development of graphene oxide nanofiltration membranes and adsorbents, as well as ongoing development of the CIF® technology for water treatment applications.

### NematiQ Joint Venture

In late 2018, Clean TeQ and Ionic Industries established a joint venture company NematiQ Pty Ltd (**NematiQ**) to pursue in partnership the development of graphene oxide (**GO**) membranes for water treatment applications. Clean TeQ and Ionic have developed a process to manufacture high-purity GO that can be applied to a membrane support to create a graphene nanofiltration membrane (**GO-Membrane**). Significantly, the GO-Membrane manufacturing process has been demonstrated on commercial scale industrial equipment.

In water purification applications, graphene oxide membranes have the potential to offer distinct operational advantages over the current polymer nanofiltration membranes, providing a significant commercial opportunity should the technology prove successful.



**Hierarchy of water filtration applications: Graphene oxide (GO) membranes have the potential to offer distinct operational advantages over the current polymer nanofiltration membranes**

The benefits of graphene oxide nanofiltration membranes when compared to conventional nanofiltration membranes include higher flux (flow rates) and lower propensity to fouling. These benefits have the potential to deliver lower operating costs, longer membrane life and lower maintenance costs.

NematiQ has established a factory and office premises in Notting Hill, adjacent to the existing Clean TeQ head office and laboratory. From this facility, NematiQ is focused on optimising its proprietary process for refining graphite oxide raw material into graphene oxide, which is used to form the filtration layer of the GO-Membrane. A pilot plant for the manufacture of high purity graphene oxide has been designed and installed at NematiQ’s premises, with graphene oxide produced by the facility to be used for larger scale manufacture of graphene oxide membranes.

The development of the membrane has now progressed to a stage where we have produced at pilot scale a graphene oxide-based membrane with a molecular weight cut-off of 1,000 Daltons (commercial target molecular weight for nanofiltration) and with a flux rate that is superior to the currently available polymer based nanofiltration membranes.

The work completed during the quarter has resulted in the production of an improved graphene oxide ink and the use of the ink in an industrially produced GO-Membrane

product. A GO-Membrane printing trial was undertaken during the quarter using a specialised commercial printing press in the USA. This first trial confirmed that a GO-Membrane, meeting flux and molecular weight cut-off targets, can be produced on commercial equipment at economic printing speeds. Future work programs are aimed at eliminating intermittent membrane defects by improving the GO-Membrane robustness and reducing the cost of the support membrane.

The applications for GO-Membranes are numerous and include many large-scale market segments such as removal of organics from drinking water and from wastewater effluents along with more niche markets in value-added industries such as food and pharmaceutical.

## CORPORATE

As at 30 September 2020, the Company's cash balance was A\$34.0 million.

During the quarter Clean TeQ announced that the Company is considering a separation of its water division from the remainder of the business, comprising the Sunrise Project and the Company's other mineral exploration activities in New South Wales.

Establishing stand-alone, separately-listed entities will allow shareholders to more readily manage their own desired exposure to each of the businesses, as well as simplifying the investment proposition to new investors.

In the case of Sunrise, it also provides an opportunity to pursue investment and funding structures using a corporate vehicle comprising an asset suite focused exclusively on battery materials.

The Company has commenced a formal review for consideration of the Board, which will provide a recommendation to shareholders in due course. The review will consider taxation, structuring and other regulatory implications. The Company expects to conclude the review in Q4 of CY 2020.

Clean TeQ is also undertaking a cost-benefit analysis of the Company's secondary listing on the Toronto Stock Exchange (**TSX**). Approximately 1.6% of Clean TeQ's shares are held on the TSX share register. The review will also consider what impact a delisting from TSX may have on streamlining and simplifying any applicable regulatory processes if a separation of the businesses is to proceed.

### **For more information about Clean TeQ contact:**

Ben Stockdale, CFO and Investor Relations

+61 3 9797 6700

This announcement is authorised for release to the market by the Board of Directors of Clean TeQ Holdings Limited.

## FORWARD-LOOKING STATEMENTS

Certain statements in this Quarterly Activities Report constitute “forward-looking statements” or “forward looking information” within the meaning of applicable securities laws. Such statements involve known and unknown risks, uncertainties and other factors, which may cause actual results, performance or achievements of the Company, or industry results, to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements or information. Such statements can be identified by the use of words such as “may”, “would”, “could”, “will”, “intend”, “expect”, “believe”, “plan”, “anticipate”, “estimate”, “scheduled”, “forecast”, “predict” and other similar terminology, or state that certain actions, events or results “may”, “could”, “would”, “might” or “will” be taken, occur or be achieved. These statements reflect the Company’s current expectations regarding future events, performance and results, and speak only as of the date of this Quarterly Activities Report.

Statements in this Quarterly Activities Report that constitute forward-looking statements or information include, but are not limited to, statements regarding: financing of the Sunrise Project; the outlook for electric vehicle markets and demand for nickel and cobalt; completing final design and detailed engineering; making a Final Investment Decision; the timing of commencement and/or completion of construction, commissioning, first production and ramp up of the Project; the potential for a scandium market to develop and increase; metal price assumptions; cash flow forecasts; projected capital and operating costs; metal recoveries; mine life and production rates; and the financial results of the PEP including statements regarding the Sunrise Project IRR, the Project's NPV (as well as all other before and after taxation NPV calculations); life of mine revenue; capital cost; average operating costs before and after by-product credits; proposed mining plans and methods; the negotiation and execution of offtake agreements; a mine life estimate; the expected number of people to be employed at the Project during both construction and operations and the availability and development of water, electricity and other infrastructure for the Sunrise Project; the potential for new mineral discoveries at the Company’s exploration licences; sales of BIOCLENS lenses; award of new Clean TeQ Water Projects; anticipated successful completion of the various Clean TeQ Water projects and outcomes related to research and development undertakings.

Readers are cautioned that actual results may vary from those presented.

All such forward-looking information and statements are based on certain assumptions and analyses made by Clean TeQ’s management in light of their experience and perception of historical trends, current conditions and expected future developments, as well as other factors management believe are appropriate in the circumstances. These statements, however, are subject to a variety of risks and uncertainties and other factors that could cause actual events or results to differ materially from those projected in the forward looking information or statements including, but not limited to, unexpected changes in laws, rules or regulations, or their enforcement by applicable authorities; the failure of parties to contracts to perform as agreed; changes in commodity prices; unexpected failure or inadequacy of infrastructure, or delays in the development of infrastructure, and the failure of exploration programs or other studies to deliver anticipated results or results that would justify and support continued studies, development or operations.

Other important factors that could cause actual results to differ from these forward-looking statements also include those described under the heading “Risk Factors” in the Company’s most recently filed Annual Information Form available under its profile on SEDAR at [www.sedar.com](http://www.sedar.com).

Readers are cautioned not to place undue reliance on forward-looking information or statements.

Although the forward-looking statements contained in this Quarterly Activities Report are based upon what management of the Company believes are reasonable assumptions, the Company cannot assure investors that actual results will be consistent with these forward-looking statements. These forward-looking statements are made as of the date of this Quarterly Activities Report and are expressly qualified in their entirety by this cautionary statement. Subject to applicable securities laws, the Company does not assume any obligation to update or revise the forward-looking statements contained herein to reflect events or circumstances occurring after the date of this Quarterly Activities Report.

## Appendix 4C

### Quarterly cash flow report for entities subject to Listing Rule 4.7B

**Name of entity**

CLEAN TEQ HOLDINGS LIMITED

**ABN**

34 127 457 916

**Quarter ended ("current quarter")**

30 September 2020

<b>Consolidated statement of cash flows</b>	<b>Current quarter \$A'000</b>	<b>Year to date (3 months) \$A'000</b>
<b>1. Cash flows from operating activities</b>		
1.1 Receipts from customers	261	261
1.2 Payments for		
(a) research and development	(120)	(120)
(b) product manufacturing and operating costs	(232)	(232)
(c) advertising and marketing	(90)	(90)
(d) leased assets	(342)	(342)
(e) staff costs	(1,073)	(1,073)
(f) administration and corporate costs	(1,438)	(1,438)
(g) exploration and evaluation	(3,188)	(3,188)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	133	133
1.5 Interest and other costs of finance paid	-	-
1.6 Income taxes paid	-	-
1.7 Government grants and tax incentives	27	27
1.8 Other (provide details if material)	-	-
<b>1.9 Net cash from / (used in) operating activities</b>	<b>(6,062)</b>	<b>(6,062)</b>
<b>2. Cash flows from investing activities</b>		
2.1 Payments to acquire:		
(a) entities	-	-
(b) businesses	-	-
(c) property, plant and equipment	-	-
(d) investments	-	-
(e) intellectual property	-	-

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (3 months) \$A'000
	(f) other non-current assets	-	-
2.2	Proceeds from disposal of:		
	(a) entities	-	-
	(b) businesses	-	-
	(c) property, plant and equipment	-	-
	(d) investments	-	-
	(e) intellectual property	-	-
	(f) other non-current assets	-	-
2.3	Cash flows from loans to other entities	-	-
2.4	Dividends received (see note 3)	-	-
2.5	Other (provide details if material)	-	-
<b>2.6</b>	<b>Net cash from / (used in) investing activities</b>	-	-

<b>3.</b>	<b>Cash flows from financing activities</b>		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	-	-
3.2	Proceeds from issue of convertible debt securities	-	-
3.3	Proceeds from exercise of options	-	-
3.4	Transaction costs related to issues of equity securities or convertible debt securities	-	-
3.5	Proceeds from borrowings	-	-
3.6	Repayment of borrowings	-	-
3.7	Transaction costs related to loans and borrowings	-	-
3.8	Dividends paid	-	-
3.9	Other (provide details if material)	-	-
<b>3.10</b>	<b>Net cash from / (used in) financing activities</b>	-	-

<b>4.</b>	<b>Net increase / (decrease) in cash and cash equivalents for the period</b>		
4.1	Cash and cash equivalents at beginning of period	40,083	40,083
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(6,062)	(6,062)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	-	-

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Consolidated statement of cash flows		Current quarter \$A'000	Year to date (3 months) \$A'000
4.4	Net cash from / (used in) financing activities (item 3.10 above)	-	-
4.5	Effect of movement in exchange rates on cash held	-	-
<b>4.6</b>	<b>Cash and cash equivalents at end of period</b>	<b>34,021</b>	<b>34,021</b>

5.	Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current quarter \$A'000	Previous quarter \$A'000
5.1	Bank balances	34,021	40,083
5.2	Call deposits	-	-
5.3	Bank overdrafts	-	-
5.4	Other (provide details)	-	-
<b>5.5</b>	<b>Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>34,021</b>	<b>40,083</b>

**6. Payments to related parties of the entity and their associates**

- 6.1 Aggregate amount of payments to related parties and their associates included in item 1
- 6.2 Aggregate amount of payments to related parties and their associates included in item 2

**Current quarter  
\$A'000**

-

-

Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments

**7. Financing facilities**

Note: the term "facility" includes all forms of financing arrangements available to the entity.

Add notes as necessary for an understanding of the sources of finance available to the entity.

- 7.1 Loan facilities
- 7.2 Credit standby arrangements
- 7.3 Other (please specify)
- 7.4 **Total financing facilities**

	Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
	-	-
	-	-
	-	-
	-	-

**7.5 Unused financing facilities available at quarter end**

-

- 7.6 Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.

**8. Estimated cash available for future operating activities****\$A'000**

8.1	Net cash from / (used in) operating activities (Item 1.9)	(6,062)
8.2	Cash and cash equivalents at quarter end (Item 4.6)	34,021
8.3	Unused finance facilities available at quarter end (Item 7.5)	-
8.4	Total available funding (Item 8.2 + Item 8.3)	34,021
8.5	<b>Estimated quarters of funding available (Item 8.4 divided by Item 8.1)</b>	5.6

- 8.6 If Item 8.5 is less than 2 quarters, please provide answers to the following questions:

1. Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?

Answer:

2. Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?

Answer:

3. Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?

Answer:



## Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Date: 14 October 2020

Authorised by: The Board of Directors  
(Name of body or officer authorising release – see note 4)

## Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standard applies to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [name of board committee – eg Audit and Risk Committee]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.