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## Sunrise to Secure 100% Renewable Power

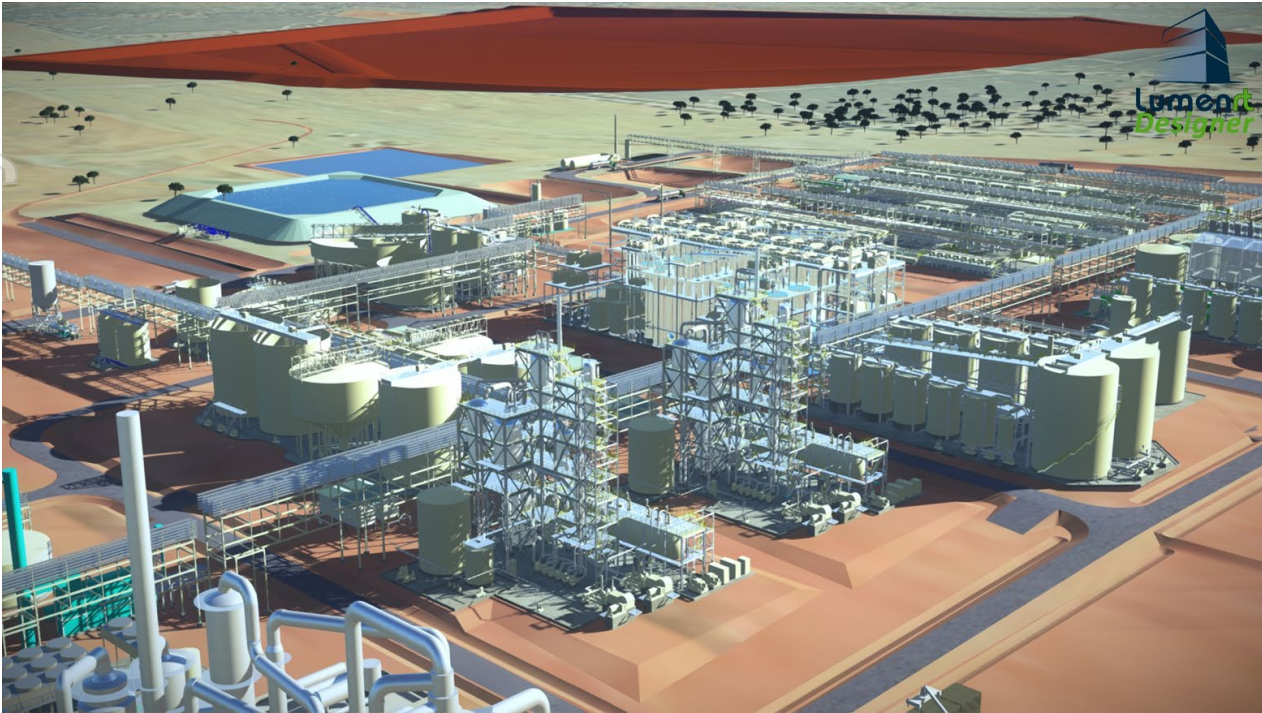
### Targeting Industry-Leading Carbon Intensity for the Battery Materials Supply Chain

MELBOURNE, Australia – Co-Chairman, Robert Friedland, and CEO, Sam Riggall, of Clean TeQ Holdings Limited ('Clean TeQ' or 'Company') (ASX:CLQ; OTCQX:CTEQF) are pleased to announce the completion of a study confirming the availability and cost of renewable energy to supply 100% of the external power requirements for the Company's landmark Sunrise Battery Materials Project in New South Wales ('Sunrise').

Transformative in its impact, the proposal eliminates approximately one-third of the project's total carbon emissions and positions Sunrise as one of the world's largest battery metals producers, designed to run on 100% renewable power.

Over the first 25 years of operation, the change is estimated to reduce carbon dioxide emissions by 4.6 million tonnes, equivalent to taking over 1 million cars off the road for a year. It will also lower Sunrise's estimated carbon intensity to 12kg CO<sub>2e</sub>/kg Ni (in nickel sulphate), giving it one of the lowest carbon footprints for battery-grade nickel production in the world.

Clean TeQ CEO Sam Riggall stated, *"In coming decades, the deepest impression the global auto industry is likely to leave on the planet will come not from the tailpipe, but from the shovel. Unless we can find ways to lower carbon emissions from mining and mineral processing, e-mobility will simply redistribute carbon emissions further up the supply chain. At Sunrise we will produce renewable energy materials using renewable energy inputs. This will be the reliability, cost and sustainability benchmark for nickel and cobalt supply for decades to come."*



Three-Dimensional Model of the Clean TeQ Sunrise Process Plant Facilities

### **The NSW Electricity Infrastructure Roadmap**

Sunrise is located on the doorstep of the Central West Orana Renewable Energy Zone ('REZ') in New South Wales, one of the fastest growing renewable energy corridors in Australia. With the REZ expected to unlock up to 3 Gigawatts (GW) of new renewable electricity supply by the mid-2020s (and with expressions of interest for 27GW already submitted by prospective developers) the REZ forms the backbone of the NSW Electricity Infrastructure Roadmap. This Roadmap will see a further 12GW of new renewable transmission capacity built across NSW, delivering 90 million tonnes of carbon emission reductions, by 2030.

The Roadmap, with its focus on decentralised renewable power generation, is a game changer for regional and remote industries, such as mining and agriculture. The increased integration of renewable power into the NSW grid, combined with the roll-out of generation capacity across the state, provides an extraordinary opportunity for regionally-based industrial projects, like Sunrise, to form a key plank in the state's Electricity Infrastructure Roadmap by providing baseload demand to support reliable, low-cost and low-carbon power generation over many decades .

Andrew Lewis, Executive Director Energy in the NSW Department of Planning, Industry and Environment, stated *"NSW has an enormous opportunity if we act now. The NSW Government has outlined its vision to deliver some of the cheapest, most*

*reliable and cleanest energy in the world. NSW wants to be a State where new industries thrive and jobs and wealth are created. Projects like Sunrise that focus on high-value sustainable manufacturing for the technologies of the future represent a great opportunity for NSW and Australia.”*

### The Sunrise Renewable Power Study

The majority of Sunrise’s energy demand will be generated on-site from a co-generation circuit attached to the acid plant. Supplemental energy is required for peak demand and at times when the acid plant may not be operating at full capacity, such as during maintenance shut-downs.

Throughout 2020 a joint study was undertaken with AGL Energy Limited (ASX:AGL), the owner of Australia’s largest portfolio of electricity generation assets, to identify several alternatives for the delivery of renewable energy to Sunrise.

The study considered Sunrise’s electricity demand profile over the first ten years of operations and assessed a range of options, including a dedicated BOOT proposal to build a behind the meter on-site solar array (with and without battery storage), as well as renewable electricity sourced directly from the generator/retailer via the NSW grid.

While the Company has yet to commit to a final development option, several viable proposals have been presented and these will now be incorporated into our development plans.

The cost competitiveness of these proposals is a testament to the rapid advances that have been made towards increasing renewable energy capacity within the eastern Australian electricity market, and the rapid maturation of technologies in the energy sector.

AGL’s Major Projects Sales Manager, Chad Floyd, said *“AGL is pleased to be working on one of the world’s largest integrated battery materials projects.*

*“As the largest private investor in renewable generation, AGL is committed to developing integrated solutions for customers that will help in creating a low emissions future.*

*“We look forward to continuing our work with Clean TeQ to deliver this world-class project.”*





AGL's Nyngan Solar Farm, Central New South Wales

The capital and operating cost estimates contained in the Sunrise Project Execution Plan<sup>1</sup> ('PEP') assumed Sunrise would purchase supplemental energy directly from the NSW grid. This entailed construction of a longer electrical transmission line from site to the regional centre of Parkes. This cost was included in the PEP capital cost estimate and it remains an important enabler for providing options for renewable power supply. Accordingly, there is no capital cost impact from adopting 100% renewable electricity supply, when compared with the base case PEP cost assumptions.

For operating costs, the proposed renewable energy tariffs have no material impact on post-tax cashflow or the project's net present value, highlighting just how competitive renewable power options have become compared to conventional grid supply. The study confirms the credentials of the Sunrise Project as one of the lowest-cost and most sustainable sources of critical battery cathode materials for the electric vehicle industry.

Discussions continue with AGL on the scope and timing of a technical and commercial feasibility proposal to support commercial arrangements for power supply.

<sup>1</sup> For full details of the Project Execution Plan see the ASX announcement of 28 September 2020

## Parke Special Activation Precinct

In addition to the significant investments in renewable power generation being made across NSW, Sunrise is also well placed to benefit from development of the first Special Activation Precinct in NSW, located in Parke ('SAP').

The SAP will be an important industrial and energy precinct covering an area of 4,800 hectares. It is located at the only junction of Australia's two major rail spines, the Inland Rail and the Trans-Australia Railway, providing access to 80 percent of Australia's markets within 12 hours by road or rail, and allowing local products to be efficiently delivered across Australia and around the world.

Clean TeQ has been in discussions with both state and local governments to identify how the SAP may potentially be developed to benefit from the Sunrise project, with a focus on freight and logistics, renewable energy supply, reagent and raw material stockpiles and battery recycling. Recycling, in particular, presents interesting opportunities given access to Sunrise's state-of-the-art hydromet facilities to digest spent battery cathode and recover the valuable metals.

## Benchmarking Sunrise's Emissions Performance

In early 2020 Clean TeQ commissioned Energetics, one of Australia's leading energy and sustainability advisers, to undertake an environmental Life Cycle Assessment ('LCA') of Sunrise to quantify its greenhouse gas impacts, and to benchmark the Project against other hydrometallurgical and pyrometallurgical processes used for nickel and cobalt recovery.

The results of the LCA<sup>2</sup> at the time demonstrated a carbon intensity at Sunrise of 17kg CO<sub>2</sub>e/kg Ni in NiSO<sub>4</sub>. With the introduction of renewable power, estimated carbon intensity has been reduced to 12kg CO<sub>2</sub>e/kg Ni in NiSO<sub>4</sub>, a reduction of approximately one-third. This carbon intensity rates among some of the lowest in the nickel industry, including those for high-grade nickel sulphide deposits.

In the case of intermediate nickel feedstocks, such as LME-grade metal powder or mixed hydroxide product (MHP), these products have carbon intensities that are approximately 130% higher. For lower-grade nickel feedstocks, such as nickel pig iron and ferronickel, the impact is over 300%. This highlights how important the

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<sup>2</sup> The greenhouse gas emission intensities of alternative processing routes are based on literature and study data that are often difficult to harmonize. For benchmarking purposes, harmonization has occurred on end product (NiSO<sub>4</sub>) and using an economic allocation to end products, although processing routes can vary widely within the nickel industry. Hence, benchmarking data should be considered indicative only.

processing route is for managing the carbon footprint of the EV supply chain. It also emphasises the significant challenge for many nickel developments in South-East Asia, which rely heavily on coal, diesel and fuel oil to power their operations and, often, on extensive clearing of forestry areas to access resources.

In May 2020, the Nickel Institute released a report titled Life Cycle Assessment of Nickel Products, which estimates a carbon intensity for battery-grade nickel sulphate not dissimilar to the Energetics' findings.

With future cathode chemistries requiring larger amounts of nickel, the true carbon cost of producing an EV will increasingly depend on the selection of battery raw materials, a fact that many carmakers are now recognising.

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

**About Clean TeQ Holdings Limited (ASX/TSX: CLQ)** – Based in Melbourne, Australia, Clean TeQ is a global leader in metals recovery and industrial water treatment through the application of its proprietary Clean-iX<sup>®</sup> continuous ion exchange technology. For more information about Clean TeQ please visit the Company's website [www.cleanteq.com](http://www.cleanteq.com).

**About the Clean TeQ Sunrise Project** – Clean TeQ is the 100% owner of the Clean TeQ Sunrise Project, located in New South Wales. Clean TeQ Sunrise is one of the largest cobalt deposits outside of Africa, and one of the largest and highest-grade accumulations of scandium ever discovered.

**About Clean TeQ Water** – Through its wholly owned subsidiary Clean TeQ Water, Clean TeQ is also providing innovative wastewater treatment solutions for removing hardness, desalination, nutrient removal and zero liquid discharge. The sectors of focus include municipal wastewater, surface water, industrial waste water and mining waste water. For more information about Clean TeQ Water please visit [www.cleanteqwater.com](http://www.cleanteqwater.com).

**FORWARD-LOOKING STATEMENTS**

Certain statements in this news release 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 new release.

Statements in this news release that constitute forward-looking statements or information include, but are not limited to, statements regarding: financing of the Sunrise Project; the financial results of the PEP including statements regarding the Sunrise Project NPV, capital cost and operating costs; the carbon intensity of metals production at Sunrise and other nickel producers and the availability and cost of renewable electrical supply for the Sunrise Project.

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 news release 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 news release 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 news release.

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