

3 March 2016

Scandium Marketing Update

Further to the ASX release of 1 March 2016 announcing that Clean TeQ Holdings Limited (**Clean TeQ or Company**) had dispatched samples of high purity (99.9%) scandium oxide (Sc_2O_3) to potential offtake customers, Clean TeQ is pleased to provide the following update to the market in respect of the Company's scandium marketing activities.

Scandium Marketing Strategy

The current global supply of scandium oxide is approximately 10-15tpa, with recent prices ranging from USD\$2,000-3,000/kg Sc_2O_3 . A key focus for the Company is securing offtake contracts to support the levels of production proposed in the Syerston scoping study (see ASX announcement of 25 May 2015).

The current market for scandium oxide is very fragmented with poor availability and reliability of supply and highly volatile price metrics. In order to grow and develop a stable market for scandium, Clean TeQ's market development strategy is focused on three particular groups who we believe will most benefit from the development of a cost effective, reliable, scalable supply of high quality scandium oxide:

- 1) The aerospace industry and groups within the aerospace supply chain who develop, supply and utilise aluminium alloy materials and components for manufacturing of commercial aircraft;
- 2) Existing consumers of scandium oxide, primarily for use in solid oxide fuel cells; and
- 3) Other groups within the non-aerospace global transportation sector who would benefit from the unique characteristics of aluminium-scandium alloys including optimal alloy strength to weight ratio, weldability and corrosion resistance.

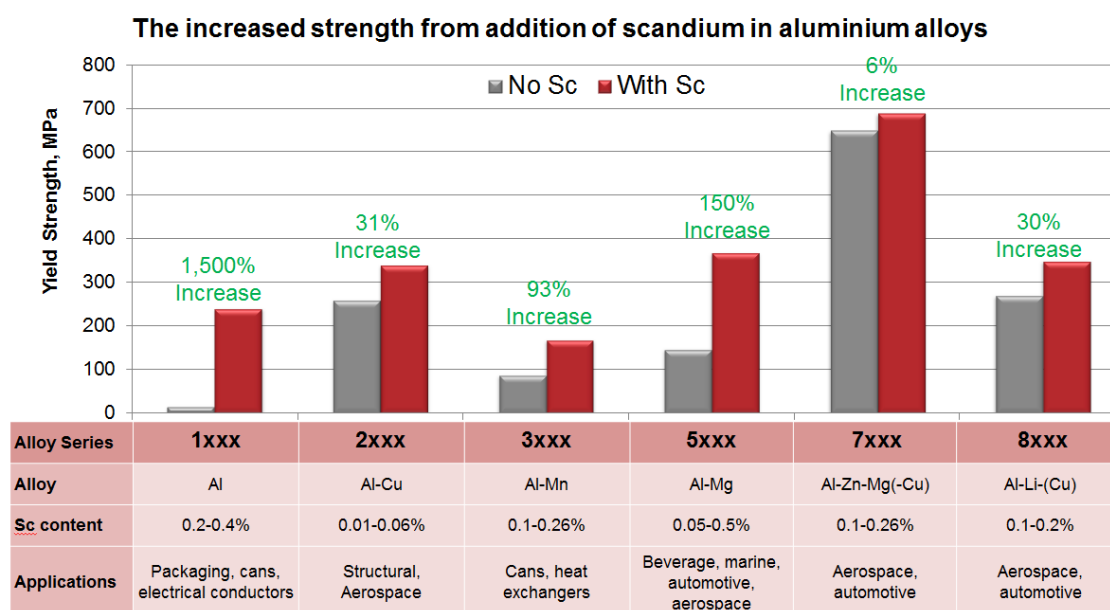
Aluminium Alloys

By far the largest potential market for scandium is as an alloying agent with aluminium, or with existing Al-Cu, Al-Li and Al-Mg alloys. Aluminium alloys containing scandium offer a number of significant benefits to end users:

- Grain refinement: smaller evenly shaped grains provide for increased strength
- Precipitation hardening: Sc-containing alloys are significantly harder and stronger
- Superplasticity: Sc-containing alloys can be subjected to higher stresses to form more complex shapes with no degradation in alloy characteristics
- Greater corrosion resistance
- Higher thermal conductivity

- Increased weldability with no loss in strength

The addition of relatively small amounts of scandium to aluminium and as an additive in a range of other aluminium alloys provides for remarkable increases in strength as outlined in the table below.



Note: 4xxx and 6xxx series alloys have limited application for Sc addition

Source: Hydro Aluminium R&D Sunddal, 2012

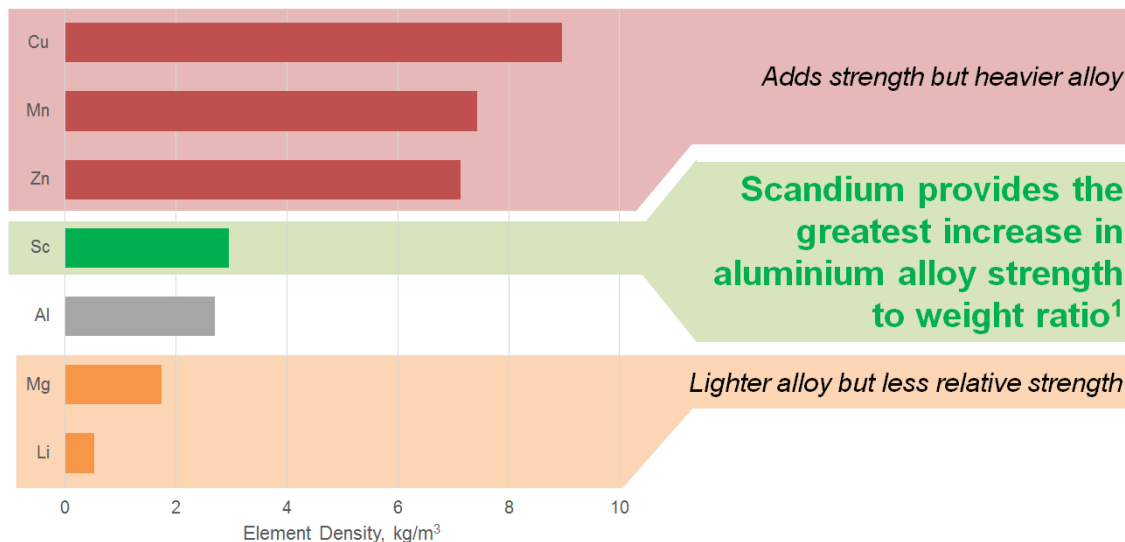
As an alloy with aluminium, scandium provides for increased strength and corrosion resistance with virtually no increase in weight. Compared to typical aluminium alloying agents, scandium provides the greatest increase in strength to weight ratio.

As an alloying element, scandium refines the crystal structure of aluminium to an extent that no other element is able to do – this change in crystal structure means that Al-Sc alloys are able to be welded without loss in strength. This same property makes scandium alloyed aluminium powders ideal for additive layer manufacturing of complex component parts – an emerging application which is effective for the production of very light weight but strong components for the transportation sector.

Aircraft aluminium alloy panels and frames are currently assembled primarily using rivets. The adoption of aluminium alloys containing scandium provides aircraft manufacturers with the opportunity to reduce the use of rivets in favour of assembly via welding. In doing so, significant aircraft weight savings may be achieved as well as reductions in assembly time and cost.

Scandium: Alloy strength to weight ratio

Typical Aluminium Alloying Elements



Note 1: K. Venkateswarlu, et al, High Strength Aluminum Alloys with Emphasis on Scandium Addition, 2008

Aluminium-Scandium Alloys in Aerospace

Given the specific advantageous properties provided by scandium in aluminium alloys, Clean TeQ is highly focused on the aerospace sector as a potentially large source of new demand for the material. A significant amount of work has already been completed over a number of decades by a range of firms within aerospace to develop and qualify specialty aluminium alloys containing scandium for use in commercial airliners. Foremost among these is Airbus Group, which has developed its own aluminium-magnesium-scandium alloy Scalmalloy®. Scalmalloy® was developed by Airbus Group for high and very high-strength extrusions and sheet material. The weblink below contains additional information relating to Scalmalloy® and the creep forming technology which has been developed to form the alloy into sheet materials suitable for use in aircraft fuselages:

<http://www.technology-licensing.com/etl/int/en/What-we-offer/Technologies-for-licensing/Metallics-and-related-manufacturing-technologies/Scalmalloy.html>

Airbus Group has also developed Scalmalloy®RP, a unique aluminum-magnesium-scandium alloy powder. It was developed for rapid prototyping and rapid manufacturing (e-manufacturing) – including the additive layer manufacturing process – and displays high strength in 3-D printed parts. The weblink below contains additional information on Scalmalloy®RP:

<http://www.technology-licensing.com/etl/int/en/What-we-offer/Technologies-for-licensing/Metallics-and-related-manufacturing-technologies/Scalmalloy-RP.html>

As announced in early 2015, Clean TeQ has entered into collaboration agreements with KBM Affilips B.V. (KBM) and Airbus APWorks GmbH, a subsidiary of the Airbus Group. KBM is an innovator and cost leader in the production of highly specialised aluminium based master alloys, including aluminium-scandium master alloys.

The agreements provide the framework under which Airbus APWorks, KBM and Clean TeQ are working together to determine the potential demand for scandium and the ability of the Syerston Project to meet that demand. As part of the process, Clean TeQ agreed to provide KBM with samples of scandium oxide from Clean TeQ's bulk sampling and piloting program for testing and qualification purposes on behalf of the Airbus aluminium-scandium alloy supply chain. These samples were recently sent to KBM for product testing and validation purposes.

During February 2016 representatives from Clean TeQ attended a number of meetings in Europe with representatives of KBM, Airbus APWorks and other parties within the aerospace supply chain. Those discussions confirmed that a significant amount of work has been done, and remains ongoing, by groups within the aerospace industry (and others) to evaluate the use of scandium in a range of industrial products and applications. Although good progress has been made, decisions on the adoption of scandium alloys in these aerospace programs have yet to be made, so the likely timing of offtake commitments and the volumes involved remain uncertain.

Clean TeQ has also entered into a collaboration agreement with Universal Alloy Corporation (UAC) and Deakin University. UAC is a US based global supplier of extruded alloy aerospace components with a vertically integrated manufacturing process incorporating casting, extrusion, machining, surface treatment, kitting, and assembly. Recognised as one of Australia's leading materials research organisations, Deakin University's Institute for Frontier Materials focuses on innovation and development in materials science and engineering, with the aim of commercialising new, more cost-effective manufacturing technologies.

The collaboration alliance with UAC and Deakin is focused on developing the next generation of light-weighting solutions for the commercial aerospace industry. The program of works includes casting and functional testing of a range of aluminium alloys containing scandium, followed by commercial-scale production runs of extruded aerospace parts. A critical objective is to identify the optimum scandium content to allow rapid and broad-based adoption of scandium containing alloy components in lighter, more fuel-efficient commercial aircraft.

Clean TeQ recently assisted in securing a supply of scandium-aluminium master alloy to UAC. The samples are being used by UAC to produce a trial batch of extruded aluminium-scandium alloy aerospace components for testing purposes.

Solid Oxide Fuel Cells

Scandium oxide is an important raw material component used in the production of some solid oxide fuel (SOFC) cell chemistries. While Clean TeQ is focused on securing offtake commitments for SOFC manufacturers, it does not anticipate that the SOFC sector will, of itself, generate sufficient offtake commitments today to underpin a development decision for Syerston. Additional offtake demand from

other sectors will be required to achieve targeted levels of offtake. Nevertheless, the SOFC sector remains a promising market for scandium given existing consumption and its potential for growth.

Aluminium-Scandium Alloys in the Global Transportation Sector

As well as aerospace and the solid oxide fuel cell sector, Clean TeQ is targeting a number of other end users and suppliers of aluminium alloys in the non-aerospace global transportation sectors. Recent marketing activities in these sectors include:

- A meeting was held with one of the world's largest producers of car components. This party is exploring the potential for the addition of scandium into aluminium engine parts which it supplies to the global automotive sector. The hardening characteristics of scandium are of particular interest to this party given the heat and pressure stresses that the parts are subject to in current engine design.
- Clean TeQ personnel met with a major producer of alloy components used in the construction of cargo ship hulls to promote the use of aluminium alloys containing scandium in ship building. Discussions are underway regarding commencement of a program of test-work on the use of scandium containing aluminium alloys in key ship building materials. If the trial is successful, it is anticipated that this party will undertake a formal qualification and registration process for use in commercial production.
- A meeting was held with a major Formula 1 racing team to discuss the potential use of aluminium-scandium alloys for light-weighting of key Formula 1 car components. Clean TeQ is assisting to facilitate concept testing of an aluminium-scandium alloy car component. While the volumes of scandium are expected to be small as a result of this market application, if trials are successful, the timeframes for development and qualification are expected to be relatively short.

In addition to these opportunities, a number of opportunities have been highlighted in automotive and space using Al-Sc sheet, welding wire, extruded parts and powder, which will provide other additional sources of offtake in the future.

The Syerston feasibility study is due for completion by the end of 2Q 2016. Work will continue over coming months with the aim of securing offtake commitments to support financing and development of the project following completion of the feasibility study.

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About Clean TeQ Holdings Limited (ASX: CLQ) – Based in Melbourne, Clean TeQ, using its proprietary Clean-iX[®] continuous ion exchange technology, is a leader in metals recovery and industrial water treatment. For more information about Clean TeQ please visit the Company's website at www.cleanteq.com.



About the Syerston Scandium Project – Clean TeQ is the 100% owner of the Syerston Scandium Project, located in New South Wales. The Syerston Project is one of the largest and highest grade scandium deposits in the world. The Syerston Scandium Project Scoping Study was completed in May 2015 – for details see the ASX announcement dated 25 May 2015.

This release may contain forward-looking statements. The actual results could differ materially from a conclusion, forecast or projection in the forward-looking information. Certain material factors or assumptions were applied in drawing a conclusion or making a forecast or projection as reflected in the forward-looking information.