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ITRI HIGHLIGHTS GROWTH POTENTIAL FOR TIN ENERGY APPLICATIONS AT PDAC

ITRI's markets manager Peter Kettle has addressed a special session of the Prospectors & Developers Association of Canada (PDAC) convention in Toronto, saying that ITRI sees the storage, generation and conservation of energy as key drivers for new applications for the metal over the next 3 to 30 years.

The global market for refined tin is some 350,000 tonnes per year (tpy), with a further 80,000 tpy used in the form of secondary alloys, other recycled materials and usage focussed in the consumer electronics, transport and packaging sectors. While the current largest market for tin is lead-free solders, looking ahead it appears likely that the main growth area will be in energy-related applications.

In the short term, the biggest growth has been in lead-acid batteries where up to 2% tin addition to battery grids increases energy efficiency. Global tin use in this application in 2014 is estimated at some 26,000 tonnes, a little over 7% of total refined tin consumption. China is the market showing the fastest growth, using some 14,000 tonnes of tin in 2014 and trebling in size over the past three years. Despite the advent of competitive products, the lead-acid battery is still the cheapest and best way to store energy in massively growing markets such as electric vehicles, renewable energy and cloud storage backup.

Tin may have some new use in lithium-ion batteries as a nanotin product added into the carbon electrode. Although silicon has a higher charge capacity and currently features most prominently in the field, there is growing interest in tin with a demonstrated benefit of using both materials together. Tin also continues to be featured prominently in research on materials for next generation magnesium-ion and sodium-ion batteries.

Smaller, but potentially significant markets for tin include new generation, low cost, solar cell materials and thermoelectric materials - such as tin selenide - which convert waste heat into electricity and are frequently referenced in scientific publications. Other areas of interest that could be part of the future tin story are hydrogen fuel production, fuel cells and fuel catalysts that can greatly reduce emissions as well as boosting efficiency.

New applications for tin will require new sources of the metal, given that production from most current tin mines is declining. ITRI believes that there are ample unexploited world tin resources, sufficient to meet demand for some 40 years and probably much longer. However, more investment in developing new mine projects is urgently needed. Historically low stocks and short-term production constraints should result in a strong recovery in tin prices over the next 5 years, triggering a new wave of exploration and development.

-ENDS-

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About ITRI:

ITRI is the world's foremost authority on tin with over 80 years' experience in tin related technologies. It is a membership based organisation representing major tin producers and smelters and is the premier source of tin related information. ITRI has specialist knowledge of tin use in all the major sectors as well as groups responsible for technology, statistical and market information, regulatory affairs and sustainability. It provides links to the main tin consuming sectors through a substantial network of industry contacts. The organisation hosts seminars, conferences and industry-specific group meetings. It also provides marketing and technical support to its members and the tin industry in general. ITRI is the tin representative to the iTSCi programme Steering Committee and Secretariat of the programme. Further information can be obtained from ITRI http://www.itri.co.uk