UNSW

SCIENTIA PROFESSOR VEENA SAHAJWALLA
ASSOCIATE DEAN (STRATEGIC INDUSTRY RELATIONS)
DIRECTOR OF CENTRE FOR SUSTAINABLE MATERIALS RESEARCH & TECHNOLOGY
School of Materials Science & Engineering
Faculty of Science

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Green Gown Awards Australasia, Creating Impact Category

Dear Sir/Madam

I am writing to wholeheartedly recommend UNSW Sustainability for this year's Green Gown Awards, based on their initiative, innovation and success in building a community-based recycling solution that is diverting approximately one tonne of potentially toxic waste batteries away from landfill every year. As a significant portion of these batteries are directed into on-campus battery recycling research; this program is contributing not only to better waste management but to advances in battery recycling, with significant benefits well beyond the University.

The foundation of the success of the UNSW battery recycling program is the strength of our student and academic community and their willingness to devote their time and energy to ensuring this particularly challenging waste stream does not end up in landfill.

UNSW has offered on campus battery recycling options since 2010. However, the program really took off in 2014, when it was expanded to provide over 50 recycling stations across UNSW, monitored by 60 students and staff backed by the UNSW Mail Room. It was then a new partnership was forged with the Centre for Sustainable Materials Research and Technology (SMaRT Centre).

Of the one tonne or so of batteries collected every year, about 70% are sent to program partner MRI e-cycle solutions, an established processor of waste batteries. As Director of the SMaRT Centre, I am extremely pleased some 300 kgs of waste batteries diverted into our research programs. At the SMaRT Centre we are leveraging rapid heating to high temperatures to trigger useful reactions to enable the extraction of valuable metals and the segregation of toxic metals, while minimising the generation of hazardous volatiles.

The importance of UNSW Sustainability's battery management system cannot be over-stated. Waste batteries contain both valuable metals that are desirable for recovery and toxic metals that pose a threat to the environment and human health; a combination that poses significant challenges for recycling. In Australia, less than 10% of waste batteries are currently recycled and the remainder are landfilled or stockpiled. As most batteries contain cadmium, lead, mercury, copper, zinc, manganese, or potassium – all of which pose health risks – landfilling (and stockpiling) is unsafe. These harmful substances leach into soil and groundwater, and can be easily taken up by plants, thereby accumulating in agricultural products that are, in turn, consumed by humans. At the same time, valuable secondary resources are being lost.

I believe UNSW Sustainability's battery management program is ideally aligned with the selection criteria as is active and successfully fostering volunteer community action and building new partnerships to achieve important environmental goals, today and into the future.

Yours sincerely,

Professor Veena Sahajwalla

UNIVERSITY OF NEW SOUTH WALES|
UNSW SYDNEY NSW 2052 | AUSTRALIA|
Ph: +61 (2) 9385 4426 |
Fax: +61 (2) 9385 4292|
Email: veena@unsw.edu.au
http://www.smart.unsw.edu.au/
CRICOS Provider Code 00098G