

RECYCLING & WASTE MANAGEMENT

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Identifying and maximizing the opportunities to recover value from electronic waste

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There is significant value in waste electronic devices, but to date, this has not been fully realized. Large amounts of electronic equipment is shipped abroad, and is subsequently lost to the reuse/recycle/recover opportunities in the original country of use. Even if the products remain in the country where they are originally bought and used, much never makes it to the recycling loops. Mobile phones in particular are prey to 'hibernation' that reduces the reuse options and ultimately reduces the value of the phone.

There are many different definitions of value, ranging from the purely financial to scarce materials to embodied energy. Electronic products exhibit different value profile depending on whether they are new, old, or somewhere in between. These values are dependent not only on the design of the product itself, but also on the surrounding 'landscape'. This landscape includes legislation, geographical location, and local market conditions. In essence, determining the right waste strategy for electronic good requires a dynamic and flexible system that will not look the same in all regions of the world, or even within a countries borders.

This presentation will suggest a method to combine the relevant local conditions with the key decision points in the 'disposal' of a phone ; reuse, recovery of components, and recovery of materials. This approach is dynamic in nature, and will support the creation of appropriate waste systems that maximize the value from the waste streams whilst minimizing associated negative effects.

Speaker Biography

Lee has a MEng in Mechanical Engineering and Materials and holds a PhD in Environmental Systems Analysis from Cranfield University (1996). She is currently the Executive Secretary for the International Society for Industrial Ecology. She has over 25 years of experience across a diverse range of industrial sectors including aerospace, electronics, construction, and is leading research into reducing uncertainty in early design decision making within aerospace, and improving resource efficiency in the electronics industry. She has a holistic approach to sustainability systems analysis, incorporating environmental and social aspects from both academic and industrial perspectives. As Director of the Practitioner Doctorate in Sustainability Program, she is responsible for engaging major industry leaders and high caliber postgraduate researchers to work collaboratively on specific research briefs designed to resolve current sustainability issues within industry. This innovative program offers a unparalleled opportunity, uniting academia and industry to develop solutions that will have enduring value for individual organization, industry and governance.

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