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Contacts:

Terry Collins, +1-416-538-8712; +1-416-878-8712 terrycollins@rogers.com
StEP, +49-228-815-0213 kuehr@step-initiative.org

*Ruediger Kuehr of the United Nations University and other experts are available for advance interviews. **Photos for media use:** www.yousendit.com/download/YkxJT0NhV3IxUUJjR0E9PO*

Experts Urge Global Standards for Electronics Recycling, Re-use to Curb Growing E-waste Exports to Developing Countries

Sold in 2006: 230 million computers, 1 billion cell phones, 45.5 million TVs; Many destined for disposal without change in policies, consumer practices

Processes and policies governing the reuse and recycling of electronic products need to be standardized worldwide to stem and reverse the growing problem of illegal and harmful e-waste processing practices in developing countries, according to experts behind the world's first international e-waste academy.

Making appropriate recycling technologies available worldwide and standardizing government policy approaches to reuse and recycling could dramatically extend the life of many computers, mobile phones, TVs and similar products and allow for more complete end-of-life harvesting of the highly valuable metals and other components they contain.

"Rapid product innovations and replacements – the shift from analog to newer digital technologies and to flat-screen TVs and monitors, for example – is pushing every country to find more effective ways to cope with their e-waste," says Ruediger Kuehr of United Nations University, Executive Secretary of a global public-private initiative called *Solving the E-Waste Problem (StEP)*. Based in Bonn, Germany, StEP works with policy makers, industry, academia and other stakeholders.

"Millions of old devices in North America and Europe could easily double their typical three or four year 'first life' by being put to use in classrooms and small business offices across Africa, South America and Asia," says Ramzy Kahhat, Center for Earth Systems Engineering and Management at Arizona State University.

"An old Pentium II computer with an open-source operating system like Linux can run faster than some of the latest new models on store shelves."

"It's vitally important, however, to get unwanted devices into re-use before they get too old and damaged to be re-conditioned," says Dr. Kahhat, who advocates a return deposit to discourage consumers from simply storing old equipment in a drawer, garage or basement.

Dr. Kahmat and other international participants in the first E-Waste Summer School Sept. 6-11, organized by NVMP (the Dutch Foundation for the Disposal of Metal and Electrical Products) and StEP, shared and compared ideas on e-waste management.

Hosted at the Philips High Tech Campus in Eindhoven, Netherlands, participants from 15 countries explored topics ranging from policy, technology and economics to the social challenges of reducing e-waste - the first ever academy to look at the e-waste issue in its entirety, rather than through the lens of a specific academic discipline.

NVMP (the Dutch Foundation for the Disposal of Metal and Electrical Products) and Philips were principal partners in the effort, headed by United Nations University and EMPA, the Swiss Federal Institute for Material Science and Technology, and Germany's oldest technical university, Technische Universität Braunschweig.

Conclusions were presented Tuesday Sept. 15 at the R'09 Twin World Congress (www.r2009.org) in Davos, Switzerland.

Gold in the E-waste mountains

An exhaustive study Dr. Kahhat conducted in 2008 in Peru found that more than 85 % of used computers imported by that country were put back into service. That record contrasts sharply with the alarming statistic from Nigeria, Pakistan and Ghana that roughly 80 % of imported devices classified for reuse are simply scrapped.

Computers and other electronics that can no longer be used contain valuable materials when devices are properly dismantled and recycled.

A ton of used mobile phones, for example – or approximately 6,000 handsets (a tiny fraction of today's 1 billion annual production) -- contains about 3.5 kilograms of silver, 340 grams of gold, 140 grams of palladium, and 130 kg of copper, according to StEP. The average mobile phone battery contains another 3.5 grams of copper. Combined value: over US \$15,000 at today's prices.

Recovering these metals with state-of-the art recycling processes generates a small fraction of the CO₂ emissions, land degradation and hazardous emissions caused by mining them.

Recovering 10 kilograms of aluminum via recycling, for example, uses no more than 10% of the energy required for primary production, preventing the creation of 13 kilograms of bauxite residue, 20 kilograms of CO₂, and 0.11 kilograms of sulphur dioxide emissions, and causes many other emissions and impacts.

Other components in e-waste like indium and coltan are increasingly hard to find but vital to electronics manufacturing.

China: 2 million backyard e-waste recyclers

UNU researcher Feng Wang estimates that of the 20 million people (roughly equal to the population of Australia) involved in China's waste management system, 2 million conduct informal e-waste collection, re-use and recycling.

All too often, e-scrap in developing countries is incinerated to recover metals, not only wasting much-needed resources but adding dangerous heavy metals, toxic dioxins, furans and polycyclic aromatic hydrocarbons (PAHs) to the environment, both local and global.

Though China has banned e-waste imports, it is still one of the world's major dumping grounds for e-waste from other countries, says Mr. Wang. In addition, China produces prodigious volumes of e-waste domestically (an estimated 2.3 million tonnes next year; second only to the United States with an estimated 3 million tonnes).

Rising environmental damage and health problems among those involved has prompted China, like many other countries, to initiate an ambitious new formal and regulated processes for managing e-waste with efficient, large scale facilities.

Mr. Wang is contributing to research into innovative and profitable models to help China ensure proper e-waste recycling, from the collection of equipment from households to the expansion of recycling facilities.

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Quotable quotes

UN Under Secretary General Konrad Osterwalder, Rector of UNU: “By providing young researchers a platform to showcase their research, share their knowledge and interact with experts from all over the world we hope to advance innovative approaches to solving the e-waste problem.”

NVMP Chairman André Habets: ‘The manufacturers and importers that have teamed together in the NVMP find it important that all appliances that are put on the market are collected and recycled responsibly. The problem of e-waste transcends national borders. That is why we stimulate the development of insight into waste streams at the international level and promote international collaboration to jointly deal with this issue. This Summer School has brought together a group of motivated and intelligent people, who have shared knowledge and insights with one another and established new contacts. That is why the NVMP will once again be making this Summer School possible in 2010.’

Kazuhiko Takeuchi, Vice Rector of UNU: "In learning to manage e-waste, we need to reflect many inter-connected socio-economic and environmental factors, such as the impact of today's economic crisis and digital divide issues, and to promote closed-loop, resource-circular societies. These capacity development activities led by UNU will help developing countries find their own way to globally sound e-waste management".

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NVMP (www.nvmp.nl)

The NVMP (Dutch E-Waste Compliance Scheme) organises the collection and recycling of electrical and electronic appliances and compact fluorescent lamps by order of the manufacturers and importers. This allows them to give practical shape to their social responsibility and legal obligations. The NVMP relies on a nationwide system for efficient and environmentally friendly collection and recycling.

Philips (www.philips.com)

Royal Philips Electronics of the Netherlands (NYSE: PHG, AEX: PHI) is a diversified Health and Well-being company, focused on improving people's lives through timely innovations. As a world leader in healthcare, lifestyle and lighting, Philips integrates technologies and design into people-centric solutions, based on fundamental customer insights and the brand promise of "sense and simplicity". Headquartered in the Netherlands, Philips employs approximately 116,000 employees in more than 60 countries worldwide. With sales of EUR 26 billion in 2008, the company is a market leader in cardiac care, acute care and home healthcare, energy efficient lighting solutions and new lighting applications, as well as lifestyle products for personal well-being and pleasure with strong leadership positions in flat TV, male shaving and grooming, portable entertainment and oral healthcare. News from Philips is located at www.philips.com/newscenter .

StEP (www.step-initiative.org)

Solving the E-Waste Problem is a partnership of several UN organizations, prominent industry, government and international organizations, NGOs and the science sector. StEP initiates and facilitates sustainable e-waste handling through analysis, planning and pilot projects.

United Nations University (www.unu.edu)

UNU is an autonomous organ of the UN General Assembly dedicated to generating and transferring knowledge and strengthening capacities relevant to global issues of human security, development, and welfare. The University operates through a worldwide network of research and training centres and programmes, coordinated by UNU Centre in Tokyo.