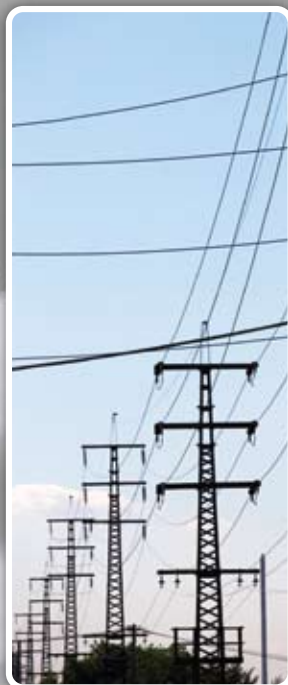


DOWN TO EARTH™

A PRACTICAL LOOK AT ENVIRONMENTAL ISSUES AND TRENDS

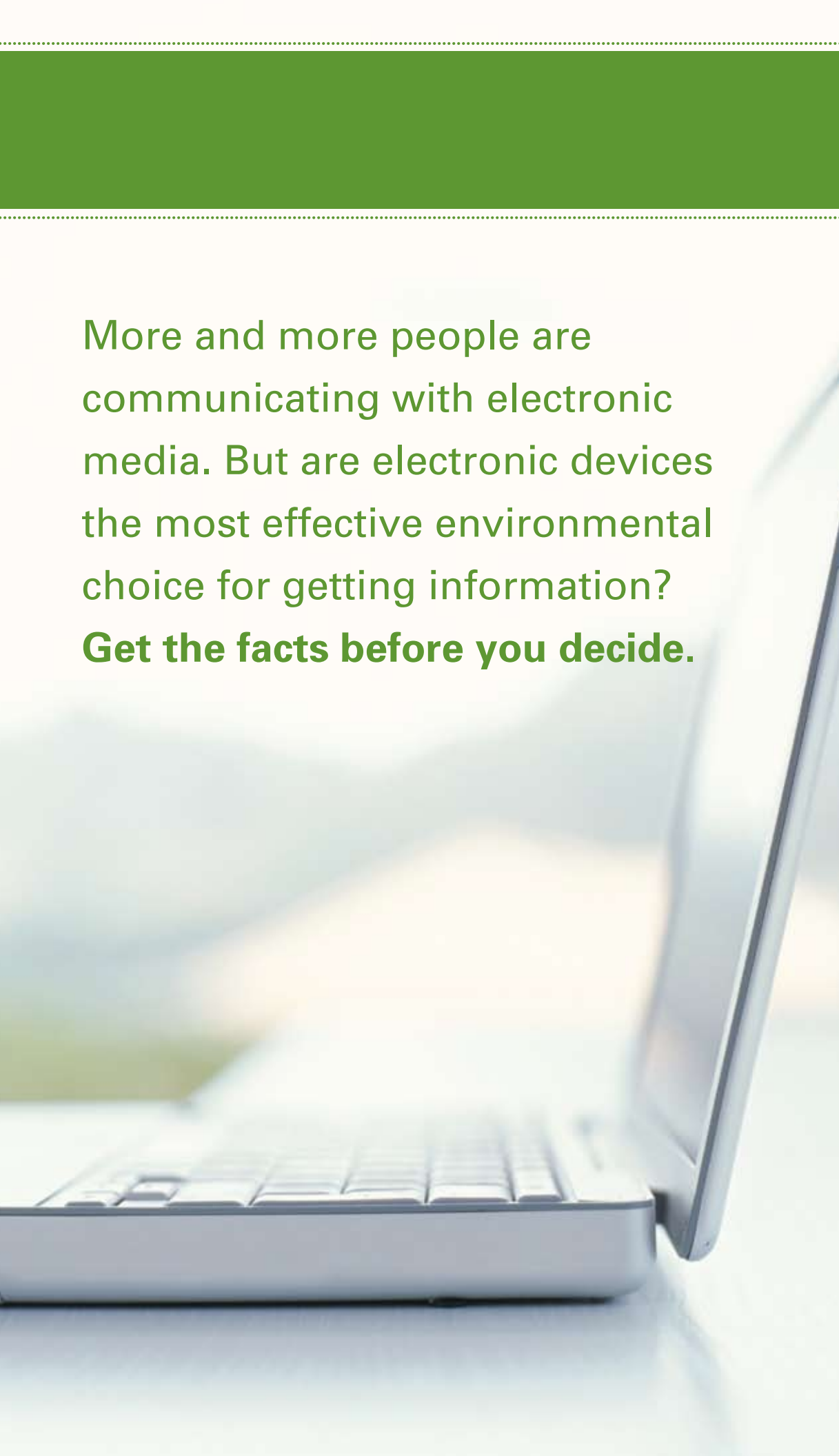


IN THIS ISSUE:

ARE PIXELS GREENER THAN PAPER?

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More and more people are communicating with electronic media. But are electronic devices the most effective environmental choice for getting information?
Get the facts before you decide.

Every decision to communicate has some impact on the environment.

For example, whether we email or send a letter, we consume energy and resources. There are environmental tradeoffs in every choice we make, and there is no simple “right answer”. Effective stewardship requires a careful examination of the larger picture that compares the entire lifecycle, from raw materials to energy use and end of life, to fully understand the impact and performance of both electronic media and paper. **The facts may surprise you.**

“There aren’t many industries around that can aspire to becoming genuinely sustainable. The pulp and paper industry, however, is one of them. It is inherently sustainable.”

JONATHAN PORRITT CHAIRMAN, UK SUSTAINABILITY DEVELOPMENT COMMISSION

RAW MATERIALS: ARE THEY SUSTAINABLE?

PAPER: One of the great things about paper is that its primary raw materials are renewable. The paper and forest products industry replenishes more than it takes and ensures the sustainability of our forests by planting 1.7 million trees every single day, more than three times what is harvested. And the U.S. Dept. of Energy has stated that the carbon sequestered on forested lands in 2006 was greater than the carbon released from harvesting wood over the same period.

ELECTRONIC: Making a computer typically requires the mining and refining of dozens of minerals and metals, including gold, silver and palladium, as well as the extensive use of plastics and hydrocarbon solvents. The lifespan of a computer is short, and electronics have become the fastest growing waste stream in the world.

DOWN TO EARTH INSIGHT

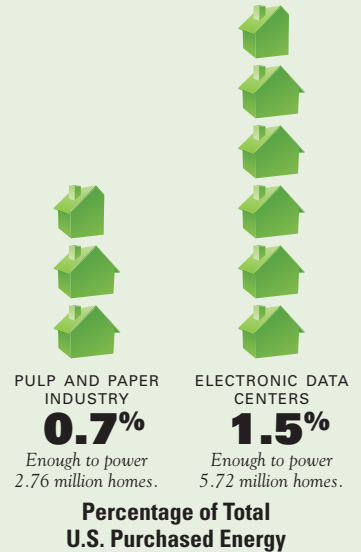
Paper is truly sustainable, with waste fully recoverable, ready for recycling into new paper. When people use more paper, landowners plant more trees. Electronic devices don’t grow on trees. The electronic industry continues to grow rapidly. Based on current non-renewable raw materials and escalating energy demands, this growth is unsustainable.

DID YOU KNOW? Twenty percent less CO₂ is used per year by a person reading a daily printed newspaper versus a person reading web-based news for 30 minutes a day.

ENERGY CONSUMPTION: IS IT EFFICIENT?

PULP AND PAPER INDUSTRY: Our industry is one of the biggest users of renewable, low-carbon energy in the world. Sixty percent of the energy used to make paper in the U.S. comes from carbon-neutral renewable resources and is produced on site at mills. In addition, these facilities use combined heat and power (CHP) generation systems, which are 80-90 percent efficient. Fossil fuel use and purchased energy in this industry is steadily decreasing.

ELECTRONIC DATA CENTER SERVERS: Taking only the servers that power the Internet as comparison, the electronics industry uses more than 90 percent fossil fuels purchased off the grid, which are greenhouse gas emitting. The conventional power-generation systems used are only 45-60 percent efficient. And the consumption rate for data centers in the U.S. alone doubled from 2000-2006 and is set to double again by 2011.



DOWN TO EARTH INSIGHT

On average it takes 500 kilowatt-hours of electricity to produce 440 lbs. of paper, the typical amount of paper each of us consumes annually. That's the equivalent of powering one computer continuously for five months.

ASK THE RIGHT QUESTIONS

Many believe that electronic media are more environmentally friendly than paper and have a smaller environmental footprint. Before you choose, weigh all the tradeoffs between electronic devices and paper. Start by asking the right questions:

- Q Is the medium made from a renewable resource?** Paper is made from wood – a resource that is being renewed on a daily basis by the paper and forest products industry, which plants millions of trees every year. Electronic devices are made of plastics and other non-renewable resources and often contain toxic chemicals and metals.
- Q Aren't most electronics recycled and made into other products?** **No.** Only 18 percent of the U.S. electronic devices are currently recycled, and many of those are not being reused for other products. In the U.S., nearly 60 percent of all paper is recycled, recovered and reused to make new paper products.
- Q Is electronic delivery of communications always greener than paper?** **No.** As new research emerges, it is clear that “either/or” is not the answer. Instead, one must consider all the inputs and outputs before making a decision about which communications are better delivered electronically or on paper.
- Q Is there room for both paper and pixels in the future?** **Yes.** By linking the power of paper with the efficiency of electronics, we can streamline our communications and help maintain the best environmental balance possible.

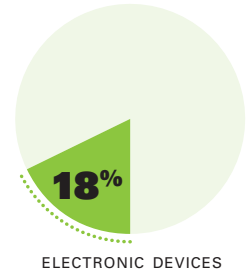
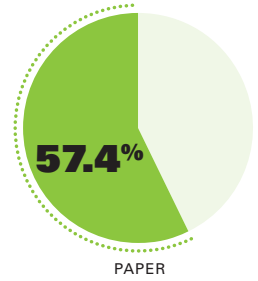
DID YOU KNOW? A government study estimates that the rise in gadget ownership and the switch from analogue to digital TV could boost the electricity usage of the consumer electronics sector by 60 percent by 2010.

END OF LIFE: HOW DOES IT BREAK DOWN?

PAPER: Paper is a biodegradable substance that is also recyclable and reusable. Nearly 60 percent of all paper in the U.S. is recycled and more than 63 percent of the fiber used to make new paper products in the U.S. comes from recycled sources.

ELECTRONIC: Only 18 percent of all electronic devices are currently recycled. 1.84 million tons of these devices were disposed of in U.S. landfills in 2006, and an estimated 30-40 million PCs will be ready for disposal in each of the next few years. Additionally, e-waste now constitutes our single largest toxic waste export.

The fact is, both print and digital media must become increasingly more sustainable to survive, and the choices we make should be based on a data-driven comparative analysis of lifecycle, carbon footprint and total environmental impact. The paper and forest products industry has been addressing sustainability for decades, and now adheres to many third-party certification standards and government regulations. We've made great progress and have a true environmental story to tell. As more scientific data-driven tools are developed, evaluations based on inputs and outputs will become more balanced.



Percentage Recycled

“The fruits of our high-tech revolution are pure poison if these products are improperly disposed of at the end of their useful life.”

TED SMITH FOUNDER, SILICON VALLEY TOXICS COALITION

DID YOU KNOW? It costs an estimated \$2.8 billion of energy annually to leave computers sitting idle overnight in the U.S. alone. On a CO₂ basis, that's 20 million tons of carbon dioxide, about the amount produced by four million cars on the road.

DOWN TO EARTH INSIGHT

The future sustainability of our society is dependent upon sustainable supply chains over the lifecycle of the medium with which we choose to communicate. The ultimate question is not electronics or paper, but what combination of these has the least total impact on our environment.

FIND OUT MORE

FOR MORE INFORMATION ABOUT RELATED TOPICS, VISIT THESE WEBSITES:

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Sources:

Alliance to Save Energy, PC Energy Report 2009; Swedish Royal Institute for Technology; *Paper & the Environment*, ATS Consulting, August 2007; Institute for Supply Management (ISM, formerly NAPM); American Forest and Paper Association (AF&PA); U.S. Environmental Protection Agency (EPA); International Energy Agency (IEA)

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