

# Comcast Goes Green

*From its plant to its vehicles, America's largest cable operator is ferreting out inefficiency, saving millions of dollars annually so far.*

By Dawn Bushaus

*Visitors to the 58-story Comcast Center headquarters building in Philadelphia might be impressed by the building's striking architecture and seasonal gardens. But they probably don't know that these features aren't just for show. Instead, they help make the building more energy-efficient — just one of the many ways Comcast is going green.*

Because of data centers, the information and communications technology (ICT) industry is responsible for 2% of the world's carbon output, which puts it on par with the airline industry. A 2007 Environmental Protection Agency report to Congress predicted that this year, annual U.S. data center power consumption will double to 100 billion kilowatt hours. That's \$7.4 billion a year.

As the largest cable operator in the United States, Comcast feels the pain of energy consumption.

"We have electric bills in excess of \$300 million annually, so there is obviously an opportunity for efficient solutions that can help us address that," said Sam Chernak, senior vice president of network architecture at Comcast.

*Comcast's new headquarters is the largest LEED-certified building in the United States. Its highly efficient design is one of the ways that Comcast is reducing its \$300 million-plus annual electric bill.*



## Green is Good

Comcast also sees an opportunity for it and other ICT companies to play a leadership role in reducing energy consumption.

*A 2008 report from The Climate Group, an independent not-for-profit organization dedicated to advancing technology that cuts global carbon emissions, shows that while ICT's 2% carbon footprint will nearly double by 2020, the sector's ability to offer products and services that reduce energy consumption could cut carbon emissions 5-fold. That would save 7.8 Giga-tons of carbon dioxide.*

Comcast has embarked on several initiatives to reduce energy consumption, which promises a 2-fold benefit of saving money and helping the company become a better corporate citizen.

“We will embrace green wherever it makes good business sense,” Chernak said.

In 2009, Comcast formed a sustainability working group to identify ways the company can become more energy efficient. The company also initiated a young leadership program for rising-star employees and gave them the task of identifying ways Comcast can improve.

Collectively, those efforts have identified 4 main target areas:

- Energy-efficiency in buildings, such as data centers, and in the network
- Better fleet management
- Increased telecommuting
- Waste reduction

In terms of energy efficiency, Comcast is working to improve airflow and upgrade air-conditioning equipment in its 8 data centers, which will result in \$2 million in savings over the next 5 years, Chernak said. The company also is rolling out a PC-management program that will encourage employees to power down computers when they leave for the day.

### Fiber's Carbon Footprint

On the network side, Comcast continues its push to replace power-hungry coaxial cable with fiber. Its plant currently consists of about 600,000 miles of HFC.

“The biggest power consumer for us is the plant because there is so much of it,” Chernak said. “We are taking this passive, non-powered piece of glass and laying it into the network, so by definition there is an inherent greening of the network as you push fiber deeper.”

The company is also spearheading an effort to develop a next-generation edge device called the Converged Multiservice Access Platform (CMAP), which merges QAM channel systems with CMTSs.

“With the CMAP, many more subscribers could be provisioned per box, and the power profile on a per-subscriber basis is a fraction of what it has been historically,” Chernak said.

Comcast plans to have a CMAP prototype in its lab early this year, with deployment slated for late 2011 or early 2012.

Better vehicle fleet management is another goal for Comcast. With 38,000 vehicles, the company operates the

fourth-largest fleet in the United States, so improving fuel economy is important. Since 2009, 80% of all Comcast vehicles purchased have been flex-fuel-capable, and all passenger vehicles have been hybrids, Chernak said.

Taking employees' cars off the roads can also reduce Comcast's carbon footprint. Currently about 5% of its 20,000 customer service representatives are participating in a work-at-home trial. The preliminary results are encouraging.



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— Sam Chernak, senior vice president of network architecture at Comcast

### Waste Not, Want Not

Waste reduction is Comcast's fourth area of focus. The company's Philadelphia headquarters is the largest Leadership in Energy and Environmental Design (LEED) certified building in the United States. Comcast also provides recycling bins throughout the building.

Comcast encourages paperless billing, as well, and about 20% of its customers have adopted it. The company also has moved to e-proxies for shareholder meetings, reducing paper use by 85%.

Comcast has not yet set specific carbon-reduction goals, nor has it begun using alternative forms of energy such as solar, wind or fuel cells. But those options are on the horizon, Chernak said. The company is also looking into how it can help its customers use cable technology to manage their homes' energy consumption.

According to The Climate Group's “Smart 2020” report, ICT companies such as Comcast could help save \$800 billion annually in energy use by enabling applications such as smart buildings and homes and smart electricity grids. The report also anticipates savings from replacing physical products, such as servers, with virtual ones.

“We have this wonderful broadband connection into 17 million homes in America, so there's a natural extension of our services to include home, light and energy management,” Chernak said.

“Comcast's goal is to deliver tools to help consumers be as green as they want to be. Ultimately, the world will find its green equilibrium on both the consumer and corporate sides.” ■

**CMTS:** Cable Modem Termination System

**HFC:** Hybrid Fiber Coax

**ICT:** Information and Communications Technology

**QAM:** Quadrature Amplitude Modulation