Computing's carbon footprint gets bigger

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LONDON — The global computing industry is starting to rival aviation in its contribution to global warming.

The computing sector has come under increasing scrutiny over energy consumption and the carbon emissions of data centers, in particular, as the debate over emissions widens beyond the traditional targets like coal plants, heavy industry and planes.

The information and communication technology industry makes a contribution to global warming similar to aviation's, and this is growing fast, analysts say.

The computing industry "has been profligate in electrical activity," said Simon Mingay, head analyst at the technology consulting firm Gartner. "No one cared about CO2 over the last 10 years. Suddenly people care about it. The availability of electricity is now a limiting factor."

The computing industry contributes 2 percent of global carbon emissions, similar to the global aviation industry, analysts said.

The computing sector will increase its carbon emissions by 6 percent a year, because of unparalleled demand by consumers for computing hardware, software and services, according to analysts.

That compares with around 3 percent growth in the aviation sector, the International Air Transport Association said in a 2008 report.

Personal computer ownership will quadruple to four billion devices by 2020, with emissions doubling, according to a 2008 report by The Climate Group.

A claim that an Internet search uses half the energy as boiling a kettle of water was false, Google said this week. But media coverage of the debate has shown how the industry is now in the spotlight.

Mingay said the increase in emissions would push the industry to be more efficient.

"It is in the industry's interest to be more efficient," he said. "Information technology has a significant role to play in tapping climate change."

However, the green initiatives by technology companies are still relatively new and do not target relatively inefficient CO2 emitting data centers, said Jos Olivier, a scientist at the Netherlands Environmental Assessment Agency.

"A lot of these green plans are aimed at computers and not for the so called data hotels, other IT technologies and big servers," he said using a term used for the centers.

The computing industry in the Netherlands emits around 3 percent of the national CO2 output, he said.

Many other developed countries, members of the Organization for Economic Cooperation and Development, may have similar emission figures, Olivier said.

"Since OECD countries account for almost half the global total CO2 emissions, and countries in other regions have much less ICT equipment in households and offices, the percentage of global CO2 emissions at 2 or 3 percent will probably be the right order of magnitude," he said.

The figures used to calculate the industry's carbon emissions vary largely, even within particular segments such as data hotels, Olivier said.

With the developing countries of China and India driving technological uptake and escalating demand for laptops, mobile phones and broadband, the sector's carbon footprint is set to expand dramatically.

The Climate Group estimates broadband users will triple to around 900 million accounts by 2020, with emissions doubling over the entire telecommunications infrastructure.