# Growing energy demand adds stress to water supply

August 24 2011, by Martin Abbugao

A Cambodian man throws a fishing net into the fertile Mekong river in Phnom Penh. A Google search for "world water shortage" will produce more than four million results in 0.17 seconds and it will also use a tenth of a teaspoon of water, experts say.

A Google search for "world water shortage" will produce more than four million results in 0.17 seconds. It will also use a tenth of a teaspoon of water, experts say.

Given water's role in power generation, the impact of about 300 million Google searches a day is around 150,000 litres (40,000 gallons) daily -- in a world where water supplies are increasingly a major concern.

"These two things -- water and energy -- come together and that's a big thing for the world to understand," says Len Rodman, a US-based water

and energy expert.

"If you squander water, if you indiscriminately use power, then in the long run that will have implications for the world," the chief executive of Black & Veatch, a major global water and energy company told AFP in an interview.

Water is used not only to generate power through dams and steam but also as a coolant for nuclear, coal and gas-fired power plants, which are competing with agriculture, industry and urban consumption for water supplies.

The Asian Development Bank has forecast the region's energy demand to double by 2030 to 6,325 million tonnes of oil equivalent, or about 74 billion kilowatt-hours of electricity.

Water will play an increasing role as a power source for Asia but supplies are already under threat, said the ADB.

China and India, the world's most populous nations, are expected to have a combined shortfall of one trillion cubic metres (35 trillion cubic feet) of water within 20 years.

Bangladesh, Cambodia, Nepal, Pakistan, the Philippines and Vietnam are already under "water stress" conditions, meaning they are experiencing periodic or limited water shortages.

A boy plays in a water feature nearby Singapore's Lower Seletar Reservoir. Water is used not only to generate power through dams and steam but also as a coolant for nuclear, coal and gas-fired power plants, which are competing with agriculture, industry and urban consumption for water supplies.

During an international water conference in Singapore in July attended by Rodman, industry players and government officials called for better integration of water and energy policies to help find solutions to looming shortages.

"There is a growing realisation that we can no longer think about energy and water separately," Peter Gleick, president of the Pacific Institute in California, said at the conference.

A recent survey of more than 700 US utilities firms by Black & Veatch showed that for the first time, water supply was the top environmental concern among the respondents.

Asia is likely to face the same problems, Rodman said.

"It will truly be exacerbated in this region because of the urban densities that are there. You've got tremendous numbers of highly concentrated urban areas," he said.

The needs of the region's agricultural sector can also affect power supplies.

In 2008, 2.2 billion cubic metres of water were diverted from three major hydroelectric plants in Vietnam for agriculture, leading to a shortfall of 430 million kilowatt-hours of electricity, Black & Veatch said.

Research is continually being carried out on water treatment technologies that require less energy as well as power-generation facilities that would need less water, experts said.

Advanced technologies to treat polluted water as well as recycle water from toilets, kitchen sinks and sewers for use in homes and industries will help address Asia's future needs, they said.

Companies like Siemens Water Technologies are doing research aimed at integrating desalination -- an energy-intensive process to purify seawater -- with solar power.

Rodman said encouraging people to change their consumption patterns of water and energy by helping them understand the link between the two is equally important.

"Gone are the days when water is independent from energy," he said.