Green Scene: Are We Running out of Electricity?

by Elaine Golds

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[Title in Tri-City News: Are we really running out of electricity?]

Whenever I speak to people about the so-called run-of-river projects proposed for many wilderness areas around the province, I generally find people believe wild salmon streams and wilderness areas should, first and foremost, be protected and kept in the public trust. However, there are some members of the public who have become so terrified by news stories that they believe, unless salmon habitat and wilderness are sacrificed, there soon won't be enough electricity to turn on their lights or cook their supper. Nothing could be further from the truth.

The reality is that we are not about to run out of electricity in this province. Over the years, BC Hydro has developed an integrated system of dams and reservoirs that presently supply most of us with greater than 90% of our electricity needs. The rest of our supply comes from a variety of sources including the BC Hydro-owned Burrard Thermal Generating Plant in Port Moody, imports (mainly from Alberta) and private power producers. A report by the Pembina Institute (2006) documented that, with the exception of low-water years, BC Hydro tends to be a net exporter of electricity.

BC Hydro currently has the capacity to produce about 11,000 MW (megawatts) of electricity; its gas-fired Burrard Thermal Plant alone can supply 950 MW. This thermal plant is used infrequently but is very valuable to have in the lower mainland (close to half of the province's population) in case of emergencies. In 2007, BC Hydro supplied just over 12,000 MW to consumers of which only 827 MW came from private producers. The Pembina report also documented a number of potential new sources of electricity. These include wind, wave, tidal, solar, biomass, geothermal and run-of-river. In total, these sources were estimated to have the potential to generate an additional 65,000 MW of electricity. While not all these sources are ready to come on-stream immediately, there are obviously a number of opportunities and abundant potential to wisely choose the right mix of options to meet our future electricity needs and minimize environmental impacts.

The most economic and sensible way to meet increased electricity needs is, of course, through conservation. A report released by BC Hydro in November, 2007 indicated that, even with population growth and growing economic prosperity, the amount of electricity needed in 2027 could be no greater than what we use today if we simply apply a number of conservation measures to make more efficient use of the existing electricity supply. Greater efficiency is also the best way to ensure the least impact on the natural environment.

It's important to remember the flooding of valleys in the interior of BC to create storage reservoirs and dams was not without huge environmental impacts. Productive agricultural land and forests were lost; people and wildlife were displaced. Future energy projects also have the potential to damage the environment - some of them more so than others. However, there are enough options available to enable us to choose wisely. Conservation will always the best way to meet future needs for electricity.

Private power producers and the provincial government criticize BC Hydro for importing small amounts of electricity from "dirty" sources in Alberta. However, even these imports can make environmental sense if they are done at appropriate times. While hydro-derived electricity generation is remarkably efficient and easy to adjust or shut down, coal-fired plants are not. BC Hydro typically purchases electricity from Alberta in the middle of the night when electricity demands drop. This actually helps these plants to operate more efficiently and produce more electricity per fossil fuel unit consumed because their output does not need to be ramped down or turned off on a daily basis.

BC Hydro should also have the flexibility to make energy purchases at certain times to provide lower prices for their customers. The "spot" market price for electricity drops when demand is low (e.g., the middle of the night) or when the supply is high (e.g., in spring when snow melt increases river flow). Provincial energy policies that prevent BC Hydro from importing electricity from Alberta in the middle of the night or force BC Hydro, in the spring, to buy high-priced electricity from private energy producers add to our electricity costs and prevent the most efficient use of existing electricity sources.

As new sources of fossil fuel-free electricity are developed, it will be important to balance the supply. For example, BC Hydro cannot become overly reliant on wind turbines because electricity can only be generated from them when the wind blows. Similarly, run-of-river projects generate electricity mainly in the spring. In BC, our period of greatest electricity consumption is in the winter when it's cold and dark. Using the Burrard Thermal Generating Plant for a few weeks in the winter may remain the best option to get through this period of peak demand for the next decade or so. Such limited use, which would generate only 1-5% of the greenhouse gas emissions that come from lower mainland vehicles, should be quite acceptable…at least, until we can significantly reduce our vehicle emissions.

Clearly, if we choose wisely, we shouldn't be forced to destroy wilderness and wild salmon streams in order to meet our electricity needs. But we do need to start turning off the lights when not in use and take a number of other conservation measures.