

FACT SHEET: IPPs & Run-of-the-river Hydro in BC

Independent Power Projects, or IPPs, play a big role in British Columbia's vision of energy development in the future. The majority of installed or proposed IPPs in BC are run-of-the-river hydro projects. These smaller-scale hydro projects are seen as the most viable "green" alternative – providing clean, low environmental impact solutions to new power generation. The following facts reveal the somewhat more complex picture of run-of-the-river hydro impacts on BC's waters.

IPPs in BC's Energy Policy

- The BC government's 2002 Energy Plan called for new sources of energy and promoted a goal of energy self-sufficiency for the province.
- Since a major change in policy in 2002, BC Hydro's role in energy development has been limited to maintaining existing power structures (including the large dams that provide most of the BC's power) and purchasing new power from privately owned sources.
- IPP projects that are successful receive a 25-year purchasing contract from BC Hydro. Once the term of this contract is up the private owners of the station are free to sell power to other buyers throughout Western North America.

How BC Generates Its Power

- BC Hydro currently generates 90% of its energy with hydro power. By 2015, BC Hydro intends to acquire another 10,000 gigawatt (GW) hours of power from Independent Power Projects (IPPs).
- The capacity of most run-of-the-river hydro projects in BC is 50 megawatts (MW) or less.
- A single IPP station's power generation is relatively small compared to overall provincial capacity; 50 MW represents only .0045% of BC's total installed electrical generating capacity (11,000 MW).
- Since 1 MW can power 500 homes, a 50 MW run-of-the-river hydro station can still have a significant impact on a small community by bringing power to 25,000 homes.

Social and Environmental Impacts of IPPs

- The social costs of run-of-the-river hydro stations include changes to river access and flow that affect tourism and recreational values. These environmental changes affect anglers, hunters, kayakers and hikers.
- Run-of-the-river developments can negatively impact fish by altering the aquatic environment, for example, by reducing river flow, speed and depth can reduce habitat quality by changing water temperatures (warmer in summer, cooler in winter), affecting dissolved oxygen levels, allowing the formation of ice, and potentially stranding fish.
- Headpond dams, which are a feature of all run-of-the-river projects, can block gravel and timber from moving downstream, this alters stream channels and habitat

Source: Watershed Watch Salmon Society "Run-of-the-River Hydropower in BC: A Citizen's Guide to Understanding Approvals, Impacts and Sustainability of Independent Power Projects" August 2007. Available online at www.watershed-watch.org

- composition for distances well past the end of the water diversion. They may also disrupt upstream habitat by stilling otherwise fast-flowing sections of the river. Luckily, most headpond dams are situated upstream of natural barriers to fish, such as salmon and where salmon are present regulations are in place to protect their passage.
- Measures that can be taken to mediate dam impacts and protect fish include screening penstocks (pipes to carry water to turbines) and low flow regulations near the penstocks that prevent fish from being pinned up against the screens.
- Non-riparian environmental impacts associated with IPPs often centre around the
 introduction of roads and transmission lines that can cause habitat fragmentation,
 introduce invasive species, potentially increase opportunities for poaching, negatively
 impact "wilderness aesthetics", and alter the gene flow in plant and wildlife
 populations.
- While individual projects may have extremely localized impacts, the cumulative risks of several IPP projects in one region need to be further considered by the province and independent power producers.