

What is Small Hydro?

Information from the Colorado Governor's Energy Office

www.colorado.gov/energy

Small hydroelectric generation is a renewable and decentralized source of electricity that is typically employed with very minimal environmental impact.

Unlike large hydroelectric projects requiring the damming of rivers, small hydro (aka micro-hydro) projects simply divert a portion of a river or creek's flow or are constructed on pre-existing diversions, such as raw water distribution systems.

Such systems have been in use for over a century and in many places (including parts of Colorado) were the original source of electricity.

Small hydroelectric generation has several significant advantages. Reliability is often cited as the number one advantage of small-scale hydropower. Turbine equipment requires relatively little maintenance, has very high efficiency factors and long life spans. It produces high quality electricity and generation is as consistent as its water source, allowing for very predictable performance.

An additional advantage is the low environmental impact of small-scale hydroelectric projects, since they do not impede flows; some projects even result in greater overall in-stream flows.



Yet another advantage is the ability for entities to incorporate small hydroelectric generation into existing hydraulic systems (for example, a raw water supply system), allowing for a better utilization of infrastructure.

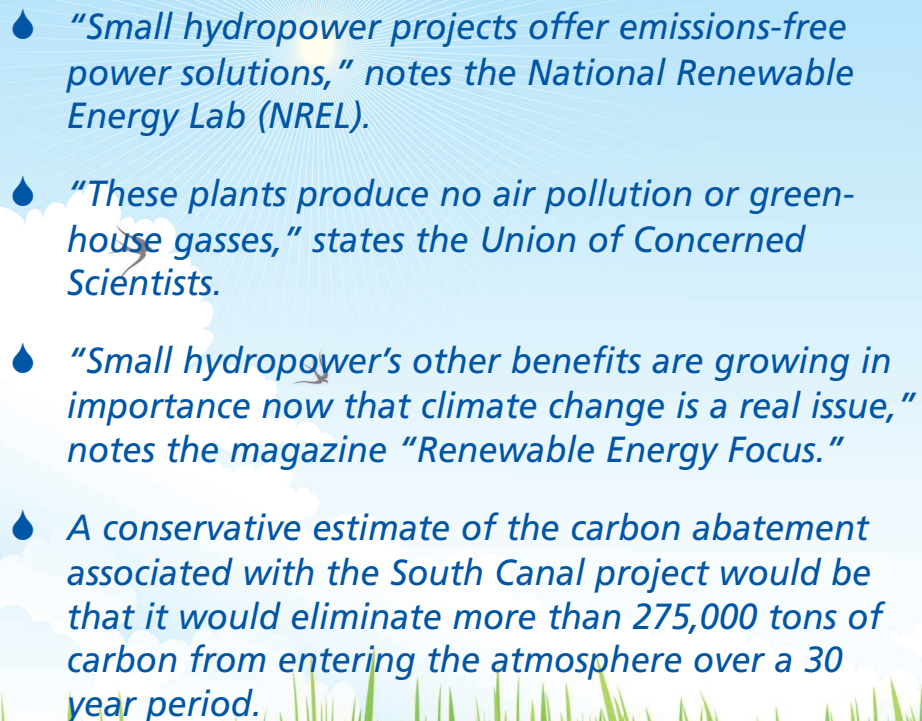
Given all of the various factors impacting the viability of small hydroelectric generation, the mountain regions of Colorado are very well suited for development of such projects. Many municipalities and special districts in particular have opportunities to capitalize on raw water distribution systems, irrigation systems, and even wastewater effluent. The challenge is identifying viable projects. The reward is decades of renewable and home-grown power.



Hydropower: Clean, Renewable Energy for Our Environment and Future

Although the South Canal project would be a multimillion dollar investment and a large project for DMEA and the area, it would still be described as "small hydro" by the U.S. Department of Energy.

Massive hydroelectric facilities such as the Hoover Dam that generate thousands of megawatts of power, make small hydro facilities, defined as up to 30 megawatts of capacity, seem, well, small. However, at whatever scale – large, small, or micro – hydroelectric facilities share a common attribute: no emissions.

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- ◆ *"Small hydropower projects offer emissions-free power solutions," notes the National Renewable Energy Lab (NREL).*
 - ◆ *"These plants produce no air pollution or greenhouse gasses," states the Union of Concerned Scientists.*
 - ◆ *"Small hydropower's other benefits are growing in importance now that climate change is a real issue," notes the magazine "Renewable Energy Focus."*
 - ◆ *A conservative estimate of the carbon abatement associated with the South Canal project would be that it would eliminate more than 275,000 tons of carbon from entering the atmosphere over a 30 year period.*

Plan to attend the free Alternative Energy Expo

Friday and Saturday, October 23 and 24 • 9-4:30 each day

Bill Heddles Recreation Center, Delta

Details found at www.wserc.org