Hydropower facilities

TURBINES
Two 600-kilowatt Francis turbines that contain water’s flow and harness its power.

POWER OUTPUT
5 million kilowatt-hours of renewable energy per year.

POWERHOUSE
1,850 square-foot turbine facility.

PENSTOCK
36-inch steel pipe.

FLOW RATE
20 to 75 cubic feet per second.

Why hydropower?

It produces clean power by harnessing energy that is already created by water’s movement within existing C-BT facilities.

Hydropower supports Colorado’s renewable energy ethic, which has been authorized by state standards and officials’ directives.

Hydropower is a reliable option, with a track record extending well beyond a century.

Northern Water

Northern Water is a public agency created in 1937 to contract with the federal government to build the C-BT Project and provide supplemental water to Northeastern Colorado. C-BT Project water helps irrigate more than 640,000 acres of land and supplements the water needs of nearly 900,000 people in Northeastern Colorado.

Northern Water and Reclamation jointly operate and maintain the C-BT Project. In addition, Northern Water collects, distributes and monitors weather and water quality data, tracks streamflows and reservoir levels, and provides water resource management planning and water conservation information.

Financing

CAPITAL COSTS
$5.7 million

LOANS
$5.1 million through the Colorado Water Conservation Board

Remaining balance (seed money) provided by Northern Water

REVENUE
$350,000 annual gross
GRANBY
Hydropower Plant
The Granby Hydropower Plant is located at the outlet of Lake Granby Dam on the Colorado River in Grand County.

The plant began generating power in May 2016. It is the second power structure built, owned and operated by Northern Water. The first was the Robert V. Trout Hydropower Plant at Carter Lake, which began operating in May 2012.

Granby Hydropower
The Granby Hydropower Plant, connected to Lake Granby Dam’s main outlet, is the second project in the region to receive a Lease of Power Privilege from the U.S. Bureau of Reclamation, granting the ability to pursue a hydropower project on the federally-owned Colorado-Big Thompson facilities. The first was the Trout Hydropower Plant at Carter Lake.

In 2015, Mountain Parks Electric signed an agreement with Northern Water to purchase the Granby Hydropower Project’s projected output of 5 million kilowatt-hours per year.

Construction began in the spring of 2015 and was completed in May 2016.

C-BT Hydropower
The C-BT Project was initially constructed with six hydropower plants, all owned and operated by the U.S. Bureau of Reclamation. Five of the plants are located on the East Slope between Rocky Mountain National Park and the mouth of the Big Thompson Canyon. The Green Mountain Power Plant is located at the outlet of Green Mountain Reservoir on the Blue River near Kremmling on the West Slope.

These six hydropower plants generate an average of 770 million kilowatt hours of renewable energy per year, enough to supply approximately 68,000 homes for a year.

The C-BT Project, completed in 1957, diverts snowmelt runoff from the Colorado River and transports it to Northeastern Colorado cities, farms and businesses.

Lake Granby
Lake Granby is the C-BT’s main storage reservoir and the second largest in the state. Construction on Lake Granby started in 1942 and the reservoir began storing water in 1949. Lake Granby’s maximum capacity is approximately 540,000 acre-feet of water.

A minimum fish flow program began in 1961, providing year-round water releases from Granby Dam to the Colorado River. The Granby Hydropower Plant takes advantage of these year-round releases to produce clean hydroelectricity.