

Redwater cogeneration plant.

Background

Redwater is an industrial cogeneration project located entirely within the fenced boundary of the Pembina Energy (Canada) Fractionation and Storage Plant in Redwater, Alberta. The cogeneration plant uses a single General Electric LM6000 PD combustion turbine to maximize fuel efficiency and minimize air emissions.

TC Energy Corporation participates in Alberta's competitive market for electricity.

The cogeneration plant has been customized to use a blend of natural gas and regeneration gas (a product of the Pembina fractionation process) to fuel both the gas turbine and the duct burner.

Redwater cogeneration plant

The cogeneration plant is configured around a single 40 megawatt (MW) General Electric LM6000 PD combustion turbine generator, duct burner and waste heat recovery unit. Both the combustion turbine and duct burner are equipped with low emissions combustion technology to minimize environmental impact.

Natural gas, or a is burned in the combustion turbine to generate electricity and hot exhaust gases. The turbine exhaust gases, augmented by additional duct firing made up of a blend of natural gas and regeneration gas, then pass through a wasteheat recovery unit to heat water/glycol that is piped to the fractionation plant for process use. After the thermal energy has been used, the water/glycol is returned to the cogeneration plant for re-heating.

The host site fractionation process produces a variable quantity of regeneration gas. This regeneration gas is collected and co-mingled with pipeline quality gas for use as fuel in either the turbine or duct burner. This arrangement allows Pembina to capture and reuse the energy content of the regeneration gas in a much more efficient manner as compared to the conventional process heaters previously used.

The cogeneration plant has been customized to use a blend of natural gas and regeneration gas (a product of the Pembina fractionation process) to fuel both the gas turbine and the duct burner.



Facility highlights

Configuration:

1x0 cogeneration.

Location:

Pembina - Redwater Complex (Canada) Fractionation and Storage Plant, Redwater, Alberta.

In-service date:

Fall 2001.

Capacity:

40 MW electrical and 60 MW thermal (hot water/glycol).

Fuel:

Natural gas and regeneration gas.

Environmental features:

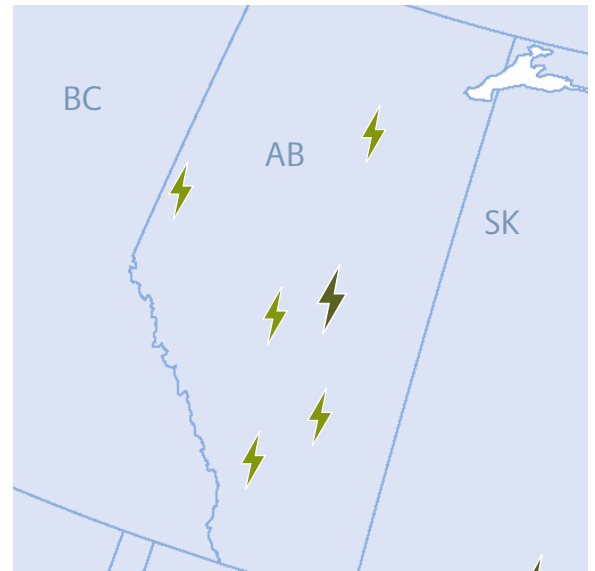
Highly fuel efficient - 75% at design conditions. Dry low NO_x combustion technology to minimize air emissions.

Owner:

TC Energy Corporation

Operator:

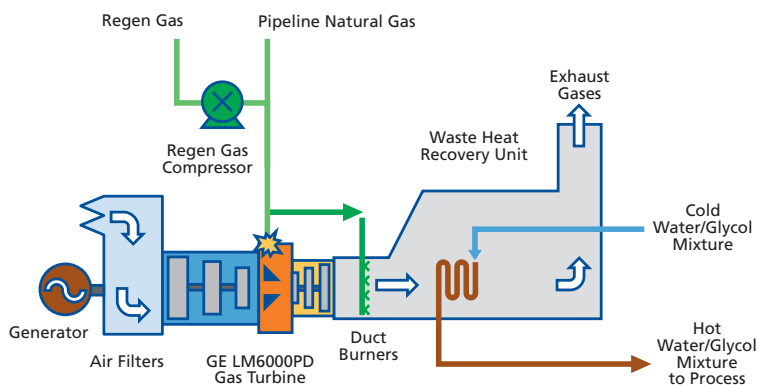
TC Energy Corporation



Redwater cogeneration project

Power plants

Redwater plant schematic



For further information on this facility:

Jamie Draper, Manager,
South Co-Generation & Storage
Power & Storage Operations West

403-946-2262
jamie_draper@tcenergy.com

Contact us

450 - 1 Street S.W. Calgary, AB
Canada, T2P 5H1

TCEnergy.com