

Mackay River Plant



Mackay River is an industrial cogeneration project that is situated on Suncor's Mackay River oilsands development, 60 kilometres northwest of Fort McMurray, Alberta. The cogeneration plant is an integral part of Suncor's bitumen extraction facilities.

The project uses a General Electric 7FA combustion turbine equipped with a dry low NO_x combustion system to maximize fuel efficiency and minimize air emissions.

In order to deliver the large quantities of steam required by Suncor, the Mackay River project uses one of the largest Enhanced Oil Recovery HRSGs ever built.

TransCanada Energy Ltd. participates in Alberta's competitive electricity market.

Facility Highlights

Configuration:

1 x 0 cogeneration consisting of a combustion turbine generator and a heat recovery steam generator.

Location:

Suncor's Mackay River Development, 60 km NW of Fort McMurray, Alberta.

In-Service Date:

Fall 2004.

Capacity:

165 MW electrical 440 tonnes/hr of steam.

Fuel:

Natural gas and produced gas.

Environmental Features:

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

Owner:

TransCanada Energy Ltd.

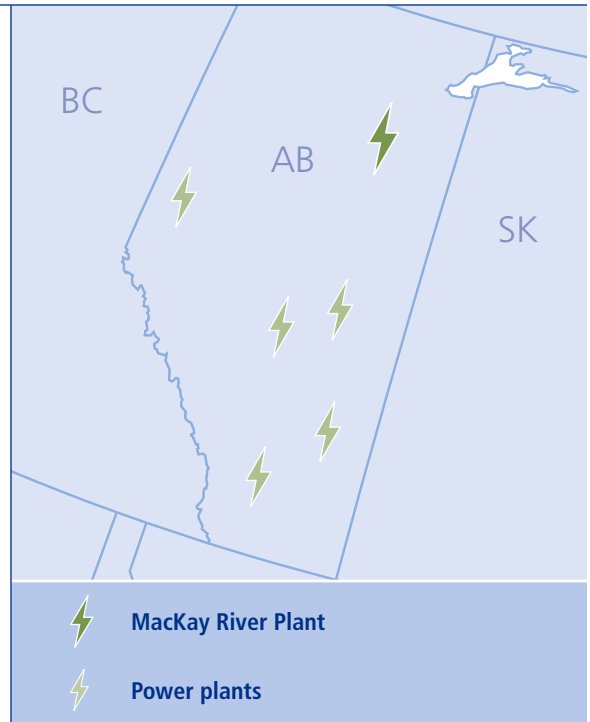
Operator:

TransCanada Energy Ltd.

MacKay River Plant

The MacKay River cogeneration plant is configured around a single 165 megawatt (MW) General Electric 7241 (FA) industrial combustion turbine generator equipped with a dry low emission system to serve Suncor's enhanced oil recovery (EOR) bitumen extraction facilities. The turbine exhaust gases, augmented by duct burners, pass through an EOR heat recovery steam generator (HRSG) to produce high-pressure, wet steam for use in Suncor's steam injection wells and production heaters. Produced gas, a byproduct from the Suncor injection wells, will be used in the HRSG duct burners to augment steam production from the gas turbine train.

A large portion of the steam used in the injection wells is recovered by Suncor as produced water. This produced water supplies most of the feedwater required for the HRSG. Feedwater makeup is obtained from a groundwater aquifer.

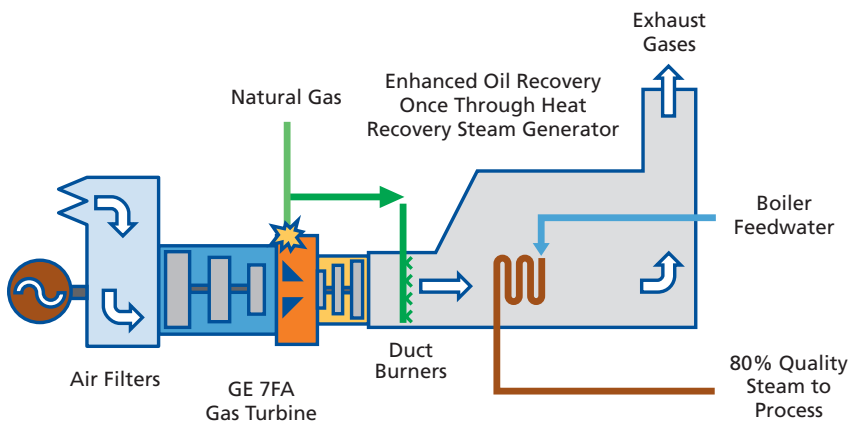


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MacKay River Plant Schematic