

development to generate electricity for some industries in British Columbia and to heat water for space heating in some northern villages.

Geothermal heat will become more important as geological research and improved technology make it possible to exploit warm rock formations near population centres to supply specialized electrical and heat needs. It is theoretically possible to reach a worthwhile temperature anywhere by drilling deep enough, but in order to provide hot steamy water to a city like Toronto, one would have to drill about 9000 metres below the surface. At present this is neither technically feasible nor economically viable. There have been some experiments with deep drilling, however, in Saskatchewan, porous sedimentary rocks 2000 metres underground hold water at 63 degrees C, more than adequate to use in radiators at the University of Regina. The water will supply three buildings with geothermal heat as soon as a second hole is drilled to return the cooled water to its warm source.

Advanced drilling technology that may speed the search for useful heated rocks in other areas of Canada, especially the Atlantic provinces is being tested. It was discovered at Cornwall, Ontario, recently that fast drills can cut through 2000 metres of granite in less than 18 weeks. Researchers hope that the new technique can be used in Atlantic Canada to create steam-generating caverns as deep as 6000 metres. The techniques and equipment developed could also be exported once they have proved successful.

The Canadian Government's approach has been to identify the most promising areas and then to involve the relevant provincial government or utility in the development stage. To better define Canada's geothermal potential, a modest programme of resource appraisal is underway costing about 600,000 dollars annually. Total federal government expenditures on geothermal energy have been about one million dollars per year, including shared-cost projects. In 1981, a special parliamentary committee studying energy alternatives recommended that federal expenditures on geothermal energy be sufficiently large to define the size of the resource in Canada; to promote development of the extraction of steam or high temperature water; and to determine the feasibility of extracting thermal energy from hot, dry rocks.

MANITOBA: THE LONG TERM PROSPECTS APPEAR GOOD

The Province of Manitoba lies mid-way between Canada's Atlantic and Pacific coasts, and is a geographical paradox. Although so far from both oceans it has a long saltwater coastline on Hudson's Bay and contains over 100,000 lakes. Although considered one of the "prairie provinces" its prairie land is less than 15 percent of its territory, the rest being made up of forests and northern tundra. Manitoba is known for its long cold winters, but also enjoys three, and sometimes four, months of summer temperatures ranging from 20 to 35 degrees C. Winnipeg, the capital, is western Canada's oldest settlement, and in the first Green Guide that Michelin has produced on Canada it received a three star rating.

Manitoba has been weathering the economic slowdown relatively well. It expects a real growth of about 2 percent this year, and the inflation rate has been running at almost 2 percentage points below the Canadian average. Long term prospects, judging by the number of large scale investment plans being implemented, appear