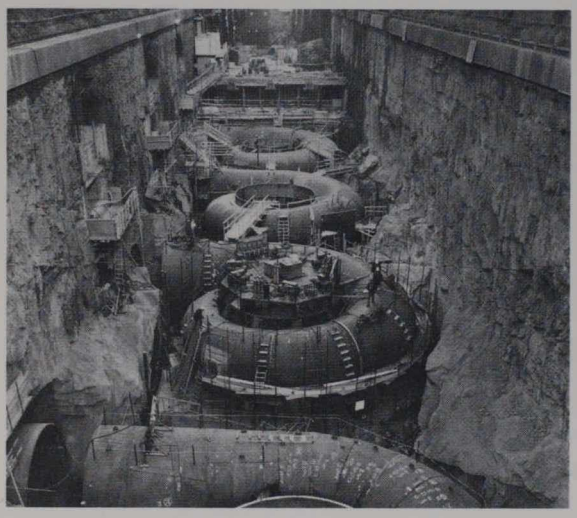
l'échéancier prévu, et les coûts se maintiennent en dessous des prévisions.

Ce n'est là qu'un début. En effet, vers 1990, l'électricité produite permettra de satisfaire 40 pour cent des besoins énergétiques du Québec. Entièrement aménagée, la région de la Baie James pourrait produire plus de 35 millions de kilowatts. En été, période où la demande canadienne est au plus bas, une grande partie de l'énergie sera acheminée vers les Etats-Unis où, au contraire, le demande est la plus forte.

Le présent projet de 15,1 milliards de dollars, l'un des plus ambitieux de l'histoire, comprend déjà 130 kilomètres (80 milles) de digues, 1600 kilomètres (1000 milles) de routes, quatre centrales, sept barrages et un réservoir qui, une fois rempli, sera le plus grand lac du Québec.



James Bay waters will turn these turbines, 140 metres underground.

is expected to supply 40 per cent of Quebec's energy needs. The James Bay area, if fully developed, could produce over 35 million kilowatts. In the summer, the season of lowest Canadian demand, much of the power will be sent south to the United States where summer is the season of highest demand.

The present $15.1 billion project, one of the greatest construction efforts in history, already includes 130 kilometres (80 miles) of dikes, 1600 kilometres (1000 miles) of roads, four powerhouses, seven dams, and a lake, which will be Quebec's largest when it is full.

James Bay is only one of Canada's many sources of hydro power (though easily the most spectacular). Canada has more water and more hydro power than any other country in the world. It gets 70 per cent of its electricity from dammed-up waters, and it has been exporting electric power for years—in 1977 it sent 20.2 billion killowatt-hours to the United States.

In addition to the ones in Quebec, turbines spin at Churchill Falls in the Labrador part of Newfoundland (5.2 million kilowatts) and at the Nelson River project in Manitoba (4 million kilowatts by the 1980s).

Until fuel prices escalated, small or slow moving rivers were not economical producers of hydroelectric power. However, Newfoundland and the federal government are now jointly studying the practicality of small hydro installations at fifty remote sites. In 1977 Newfoundland imported 833,000 barrels of oil at a cost of $10.5 million, much of it for oil-fired generating stations in small communities that cannot be joined economically to the province's power grid.

The Tides of Fundy Bay

Never tie your ship too close to the pier in the Bay of Fundy. The tides are the highest in the world, and in the Minas Basin the range between successive high and low water can reach 53 feet.

The tides are an obvious potential source of electric power. They can turn turbines, and schemes for harnessing the Fundy tides have ebbed and flowed for centuries. The technology to control the flow on a massive scale has been long available. Dams could be built, but their construction would be enormously expensive. In 1969 the Atlantic Tidal Power Programming Board concluded that they wouldn't pay. Tidal power planners, then and now, have to compete with the economical turbines of Hydro Quebec.

Since the rapid rise in the price of fossil fuels, however, the cost of harnessing the bay seems less prohibitive, and the possibilities are being reconsidered. Dr. G. F. D. Duff, Chairman of the University of Toronto's mathematics department, is studying a model that describes tidal behaviour in the bay and in the adjacent waters of the Atlantic. The Tidal Power Review Board has recommended consideration of construction of a 1,085-megawatt plant in the Cumberland Basin near Amherst, Nova Scotia.

Tides have been harnessed in France and Russia. The 230-kilowatt power plant at La Rance in Brittany began operation in 1967 and uses tides both as they ebb and flow. The Russians have an experimental 400-kilowatt, single-pool plant at Kislaya inlet on the White Sea. Both are considering larger projects.