energy resources. Its quasi-judicial functions pertain to granting certificates for construction of interprovincial and international pipelines and international power lines; issuing licences to export power or energy-related commodities or to import gas or motor gasoline; and regulating rates, tolls and tariffs of oil and gas pipelines under its jurisdiction. Regulatory functions of an administrative character include safety orders regarding pipelines and approval of pipeline utility crossings.

Administration of the National Oil Policy to foster the development and use of oil resources within Canada involves protecting indigenous crude oil products in domestic markets, to which the Board's motor gasoline import licensing is related, and allowing export of surplus oil when an adequate determination has been made of Canadian requirements.

Regular examinations of the accounts and records of gas and oil pipeline companies are conducted to ensure conformity with the Board's Uniform Accounting Regulations and to secure the detailed financial information essential to administering the regulatory functions of the Board. Special studies of a financial nature are carried out and close liaison maintained with national and international financial communities.

In early February 1973, the Board recommended that export controls be introduced on crude oil and related hydrocarbons. These controls became effective on March 1. On June 15 export controls were extended to cover motor gasoline and middle distillates (diesel fuel, kerosene and heating oil); and to propane, butanes and heavy fuel oil on October 15, 1973.

## 13.1 Canada's energy resources

Known uranium resources are estimated to be 400,000 tons of uranium oxide available at prices up to $15 a lb. Canada's cumulative domestic needs to the year 2000 could total 100,000 tons, while committed exports amount to some 60,000 tons. Canada has a significant surplus over predicted requirements of low- to medium-cost uranium already proved or indicated. There is an estimated potential of an additional 500,000 tons of uranium oxide available in the same price range. The cost of uranium plays only a minor role in the total cost of nuclear power; an increase in the cost of uranium from the present $6 a lb. to as high as $50 a lb., for example, would only raise electricity costs from a CANDU reactor by two mills from the present seven mills a kilowatt hour.

In the case of oil and gas, there is considerable uncertainty about how large the resource base actually is. Most of the potential resources are expected to be found in the, as yet, largely unexplored frontier areas. Estimates made by the federal government in 1972 and 1973 of potential recoverable conventional oil were 134 billion and 99 billion barrels (bbl); of this, the proven reserve was slightly less than 10 billion bbl at the end of 1973. The Alberta oil sands are very large but present technology and foreseeable prices would restrict recovery to 10% to 15% of the ultimate recoverable reserves of some 250 billion bbl. Proved natural gas reserves yet to be produced total close to 53 trillion cubic feet (MMMMcf). Estimates of gas potential, based on the 1972 and 1973 assessment, range from 906 to 783 MMMMcf.

Canada has extensive coal reserves estimated at about 120 billion tons of which about 118 billion tons are in British Columbia, Alberta and Saskatchewan. These are geological estimates of reserves in place but even on the basis of economic mineability criteria Canada has sufficient mineable coal for the foreseeable future at substantially greater production levels. These reserves are almost all in western Canada; most of the economic Maritime coal has been extracted.

At best, hydro-electric energy production might double to about 310 billion kilowatt hours by 1990. Growth of this source will be moderated thereafter by competition from nuclear power.

**Energy supply and demand**. Primary energy consumption in Canada has tripled during the past 25 years, representing an average annual increase of 4.5%. Oil and gas now meet almost two thirds of total energy requirements compared with less than one quarter 25 years ago, while coal's share has declined from one half to one tenth. The other major primary source is hydro-electricity which has been meeting about one quarter of total energy needs since the mid-1950s. The only significant change in the energy mix in the 1970s has been the introduction of nuclear energy which in 1973 accounted for about 1.5% of primary energy consumption and promises to grow steadily.

The energy industries are a major component of the Canadian economy with a primary production value of $5.1 billion in 1973. In 1973 energy trade had a favourable balance of