

Table 5-3: COMPARISON OF FUTURE CRUDE OIL AND NATURAL GAS PRICES UNDER THE NATIONAL ENERGY PROGRAM

Date	Eastern Canada Gas Price (\$/Mcf)	Gas Price as a Percentage of Oil ^(a) (%)
1980	2.42	80
Under the National Energy Program		
1981	2.98	71
1982	3.39	68
1983	3.84	67

^(a) \$1 per Mcf = \$5.80 per barrel.

Source: Canada, Department of Energy, Mines and Resources, 1980e, p. 32.

tions about prices and costs, they can provide some insight into the timing of development in Canada's energy system.

Cost comparisons among conventional energy forms and alternative options, done by Middleton Associates for the Committee, used estimates of equipment efficiencies, system lifetimes, capital and operating costs, and similar parameters to arrive at such estimates. Three conventional energy price scenarios (similar to those used by the Economic Council in its work for the Committee), comprising elements of world and domestic price forecasts, were used in the analysis.

Middleton Associates found in the transportation sector, for example, that methanol could become com-

petitive with gasoline by 1985 if higher rates of increase in domestic oil prices were allowed, but not until the early 1990s if oil price increases were small. Compressed natural gas and propane were found to be competitive as motor fuels today, regardless of gasoline price increases. The main barriers facing these two fuels are market readiness in the short term and supply limitations in the longer term.

As a substitute for oil in electrical generation, coal combustion using fluidized bed technology was considered to be economical with either high or low oil price increases. Wind turbines, on the other hand, may not be economical until 1990 if the rise in the domestic price of oil is small.

Among those energy sources analyzed for substitution in residential and industrial heating applications, solar water heating appears to be the most sensitive to conventional energy prices. At low rates of conventional energy price increase, solar heating of water may not be economic without incentives until after 1995. The same can be said for heat pumps competing in areas serviced by natural gas (although as a substitute for other fuels, heat pumps are economically preferable now or in the near future). Wood waste as a fuel is preferable, where applicable, through the present decade and beyond, regardless of conventional fuel prices.

Co-generating systems are largely competitive now, although higher rates of increase in oil prices could make oil-fired systems uneconomical towards the end of the decade.

It is accepted by most energy analysts that the real price of energy will continue to increase for a considerable time to come. As conventional energy costs escalate, the alternatives will become increasingly competitive and technological breakthroughs may be expected to lower the real cost of some of them. By reducing our energy requirements, we may also be able to moderate the rate of increase in the total cost of energy services even in the face of rising prices.