as the proposed Quebec and Maritime system. These can be financed by normal methods and should present no difficulties.

Frontier pipelines. The existing pipeline industry is expected to contribute significant equity toward the completion of frontier transportation systems. However, about 75% of the investment will be financed by debt, probably on a project financing basis. Domestic and foreign capital markets can absorb the debt if the terms are right, although some compensation to debt holders for risks may be needed — for example, some participation in profits.

Electric power costs 13.13.3

Electrical power generation represents the largest investment ranging from $90 billion in the first and $110 billion in the second analysis. The main problem seems to be that for the next 15 years emphasis on remote hydro and nuclear growth will transform the risk characteristics of utility debt offerings. Most new capacity will be highly capital intensive (large-unit nuclear or hydro projects). The larger risks associated with such projects may require greater sharing among utilities and governments. Since most Canadian utilities are Crown corporations, equity is unlikely to be forthcoming from the private sector. There should be an increased role for innovative financing in the electrical sector over the medium term.

Costs of efficient-size generating units are very high relative to the financial capacity of some provinces and utilities. Moreover, such additions to capacity are very large in relation to existing load, so that errors in forecasting load growth can lead to under use of capacity, with potentially serious financial effects. All of these risks are likely to decrease in importance over time. With experience, nuclear reactor construction costs should drop — a tendency that may be reinforced by technological breakthroughs. As costs fall, financial capacity of the provinces and utilities should grow so that the relative importance of additional financial constraints in building a new nuclear plant will decline. As the system grows, the percentage increase in capacity due to the addition of a single efficient-size nuclear station will be smaller, thus minimizing the penalty from errors in demand forecast.

It would appear therefore that some provinces and utilities may need federal help to adjust to a structural change in the electrical sector. However, once the adjustment is made, the need for this aid should diminish. The next 10 to 15 years will be crucial.

Sources

13.1 - 13.13 Energy Policy Co-ordination, Department of Energy, Mines and Resources.