ENERGY AND MINES

B. STRAND RATIONALE AND PHILOSOPHY

Alberta's hydrocarbon resources are primary energy sources for Alberta and the rest of Canada and contribute to an important export market. Because our province is so richly endowed with oil, gas, oil sands, heavy oil and coal, the exploration, recovery, production, marketing and management of these resources will likely continue to provide a major contribution to Alberta's economy for the foreseeable future.★

Although Alberta owes much of its present development, lifestyle and demographics to the development of fossil fuels, these resources may, over time, become less readily available and more costly to develop and use. Furthermore, public concern for the environment at local and global levels has expanded to embrace practices that ensure sustainable energy use. The development of renewable energy—the energy generated by water, wind, sun, biomass, waste material and geothermal sources—has the potential to extend the life of Alberta's fossil fuels and supplement conventional energy supplies in specific regions of the province.

The potential of the minerals sector in Alberta has not been fully determined, nor have known deposits been fully developed. In the future, development of metallic, nonmetallic and structural materials could be profoundly important to economic diversification, employment and technological development in Alberta. At present, the recovery and production of minerals for industrial applications have significant effects on Alberta's economy.

Energy and Mines, a strand in Career and Technology Studies, provides a comprehensive view of energy and mineral development in Alberta and Canada. It encompasses resource exploration, recovery, production, marketing and management. Conservation is viewed throughout the strand as a process for managing human use of natural resources to ensure such use is sustainable. Students will develop first-hand knowledge of practices specific to Alberta's energy and mineral industries and will examine technologies that support sustainable development and efficient use of natural resources.

★ *Alberta in the Global Energy Spectrum,* Edmonton, AB: Alberta Energy Information Centre, Government of Alberta, 1995.

Students in Energy and Mines will develop the knowledge, skills, attitudes, motivation and commitment to work individually and collectively, as private citizens and members of the work force, toward the conservation and responsible use of water, land, air, forests and wildlife. Within the philosophy of Career and Technology Studies, *students* in Energy and Mines *will*:

- develop greater awareness of the economic, environmental and social significance of energy and mineral resources in Alberta and the rest of the world, and develop awareness of factors affecting industry decisions

- describe the characteristics of energy and mineral development in Alberta and Canada, and identify resulting products and services

- describe technologies and research programs designed to enhance the development of a range of products and services and to achieve sustainable use of natural resources

- translate sustainable development and conservation goals into viable plans for developing and marketing energy and mineral products and services

- develop competencies and behaviours that have broad application to environmental career paths, and specific application to careers within Alberta's energy and mineral industries.