

generated and used internally by the petroleum industry in the refining process. Other methods of producing hydrogen include the thermal decomposition of water (requiring extremely high temperatures), the thermochemical decomposition of water (which Canada and the EC are working on under the auspices of the IEA) and the photochemical conversion of solar energy. Nevertheless the Parliamentary Committee argued that electrolysis is the most practical way of creating hydrogen fuel.

Hydrogen, like natural gas, can be liquefied and stored at very cold temperatures, but the process itself requires a high energy investment. A more conventional method is to store it as a gas in high-pressure cylinders, however this also has a number of disadvantages including leakages of the small hydrogen molecules between the atoms in metals and the consequent embrittlement of the metal cylinders. It is likely that new design techniques will resolve some of these problems and that in a "hydrogen economy" H₂ will be stored in its gaseous form and will move to market by pipeline.

So far the Columbia space vehicle is the most famous application of hydrogen fuel technology. Canadian researchers are currently examining the possibilities of a variety of commercial applications from urban transport vehicles to aircraft. As the lightest element, hydrogen has only 40% of the weight of conventional jet fuel for the same energy content.

When hydrogen is burned the product is water vapour, which is a natural constituent of the environment, and which is conveniently returned through nature's water cycle for re-use. When hydrogen is produced from water by electrolysis, the oxygen needed to combust it is automatically co-produced and there is no net consumption of atmospheric oxygen, as occurs with the burning of fossil fuels. Other than a controllably small quantity of nitrogen oxide which is produced when hydrogen is burned with air, hydrogen fuel itself makes no contribution to pollution. This environmental advantage of hydrogen may in the end prove to be its most valuable and important characteristic.

NOVA SCOTIA: FISH A MAJOR FACTOR IN GROWING EXPORT TRADE

Nova Scotia is one of the four original partners in the Canadian Confederation of 1867. The province extends south-east towards the Gulf Stream of the Atlantic, a position which gives it a great commercial advantage and marks it as a natural highway for travel between Europe and Canada. Nova Scotia's major Atlantic ports lie almost astride the "great circle" route from the USA to Europe and are a day's sailing closer to Europe than any other North American mainland port. This geographic location, together with large, ice-free and deep-water harbours, has been a key factor in the province's economic development.

The Nova Scotia economy is based on fishing, agriculture, forestry, mining and manufacturing, and particularly on the exports which these sectors permit. In 1981 exports to the EC accounted for 16% of total exports from the province (\$94.1 million). The USA accounted for 64%. Three leading commodity groups traditionally comprise the bulk of Nova Scotia's export trade: fish and fish products, pulp and paper, and transportation equipment. For the full year 1981 they accounted for 75% of the value of commod-