Switzeerland's place on the world energy scene

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THE use of energy in the world remains grossly unbalanced. One American uses as much commercial energy as two Germans, three Swiss, 16 Chinese or 1,072 Nepalese. All the fuel used by the Third World for all purposes is only slightly more than the amount of petrol used by the industrialised world to move its cars.

Those were some of the points made by Mr R.F.Schwab when he gave a talk on Switzerland and the world energy scene at a meeting in London of the Nouvelle Société Helvétique.

Mr Schwab, who is president of Cities Service Europe-Africa Petroleum Corporation, said his studies had reached three main conclusions:

Firstly, there were ample resources of petroleum in the world, as yet undiscovered, which should permit an orderly transition from our present petroleum-dependent civilisation to a society based on alternative energy sources.

Secondly, the price to the public of this undiscovered oil and gas was controlled by an ever increasing "government take" rather than by increasing technical finding costs, although that cost would also increase.

Thirdly, we could no longer afford to "let the oil pay our taxes".

He said that governments, the public and private industry needed to cooperate to make the transition to alternative energy sources properly and timely.

Switzerland's share of oil consumption was about 2 per cent of the oil consumption of continental Western Europe, and the gas consumption of Switzerland amounted to less than 1 per cent in the same comparison.

Forty years ago — just before the outbreak of the second world war — coal was Switzerland's primary source of energy, to the same proportion as oil today, and petroleum products had about the importance of the nuclear energy source of today.

Mr Schwab said it was clear that the more industrialised nations or continents would be depleting their oil and gas reserves much faster than the lesser developed but hydrocarbon rich areas, and they would become more and more dependent on imported energy until new energy sources were better developed. The only present-day exceptions to this strong dependence on energy imports were the United Kingdom, Norway and the Netherlands.

Mr Schwab said that a total of 29 exploration and appraisal wells had been drilled over the past 43 years in the sedimentary basin area of the Mittelland and the Jura mountains of Switzerland — but without a commercial discovery.

The first geological study of the petroleum possibilities of Switzerland were made by Arnold Heim in 1918. Between 1935 and 1945 a study group of Swiss geologists who had gained oil-finding experience overseas in the employ of foreign oil companies were commissioned by agencies of the Swiss Confederation to carry out a detailed geological study of Switzerland's possible petroleum resources. The first well was drilled in the Canton of Vaud in 1936 and the first modern seismic programme was shot in 1962.

One of the deepest wells in Europe was drilled at Linden in the Canton of Berne in 1972. A depth of 5447 metres was reached.

While the exploration for oil and gas in Switzerland showed a fair amount of good source rocks, the large enough structures and good reservoir rocks in the appropriate position were rather scarce. Several wells had encouraging shows of oil or gas but none proved up a commercial field.

A year ago the International Energy Agency accused Switzerland of making no effort to reduce the country's consumption of oil and gas. Swiss newspapers reported proudly in February, 1980, that a reduction of oil consumption of 4.7 per cent had been achieved in 1979, and that only Luxembourg and the United States of America had done better.

But while Switzerland actually "saved" some amount of heating oil, diesel and petrol, it increased in the same period its consumption of natural gas by 12 per cent.

Mr Schwab said that the International Energy Agency might be right with its accusation. From the point of view of an energy balance Switzerland had quite obviously increased total consumption, and what was "saved" energy-wise in oil was consumed primarily as natural gas.

On March 2, 1980, the Swiss had the opportunity to accept or reject a new article of the Constitution — to give the Confederation certain powers, even in peacetime, should there be difficulty in obtaining necessary supplies of raw materials.

As an example, rationing of scarce products could be introduced or alternative raw materials could be made available by recycling refuse. This proposed amendment to the Constitution was approved by public vote.

The same day the voters of Basel-Land gave an overwhelming "Yes" to the first Energy Bill of a canton. The aims of this Bill were to save energy and to secure reasonably priced energy. The voters of Basel-Land also approved a Nuclear Bill which obligates the government of the canton to prevent the building of nuclear power plants in the canton and in the surrounding areas.

It was just 23 years before that 77 per cent of the Swiss voting on that occasion were overwhelmingly in favour of introducing nuclear energy.

Swiss newspapers today also carry articles discussing the need or the desirability of introducing a Federal Energy Saving Bill which would primarily be concerned with electricity. According to some proposals the heating of roads, private swimming pools and other outdoor heating should be stopped.

But short of building a large number of nuclear power plants, Switzerland had not much chance of considerably reducing its dependence on imported oil, gas and coal as primary energy sources to supplement its own available hydro-electric resources.

In conclusion Mr Schwab said that Switzerland and the world as a whole was frighteningly dependent on oil and gas as an energy source. But there was a great deal of oil and gas still to be found — enough to guarantee an orderly transition to forms of energy which were based on less exhaustible resources.

Much of the oil and gas still to be found was in smaller fields or in harsher environments and its technical finding cost would be higher. These costs should be offset by lower government takes at the production stage which would have the effect of stimulating the building up of reserves.

Industry as a whole needed to continue developing tools to improve its capabilities of supplying the quantities and types of energy today's world required.

Reasonable measures of energy conservation by everyone was vital. These would ultimately help to better bridge the energy gaps which countries like Switzerland in particular might experience from time to time because they lacked sufficient indigenous sources of energy.

"If there were to be an energy gap due to a widespread petroleum shortage before the end of this century, it will not be because oil and gas reserves are not available to be found and developed", said Mr Schwab. "Neither will it be because the industry as a whole lacks the technology to bridge such an energy gap.

"It will rather be because we use non-renewable sources of energy in great quantities without giving much thought to gradually developing sources of less exhaustible energy".