How the Swedes Live Well While Consuming Less Energy

The Swedish approach to energy use has excited attention among Americans who are anxious to curb this country's burgeoning consumption of energy. In the face of dire warnings that any effort to cut energy use here might force a return to the Dark Ages, the Swedes have seemed to offer hope that we can have our cake and eat it, too. By many measures, the Swedes have essentially the same standard of living as we do, yet their per capita consumption of energy is only about 60 percent of the American rate. The good life is apparently attainable at a much smaller investment of energy than we are accustomed to.

Early this month a group of energy experts from Sweden descended on this country to explain, in a series of seminars in Washington, D.C., Chicago, and San Francisco, how it is done. The trip was sponsored by the Swedish Embassy and the Swedish Information Service as part of a continuing effort to educate Americans about Sweden.

At the Washington seminar—held in the National Academy of Sciences auditorium on 3 May—it was stressed that the main reason why the Swedes use less energy per capita is that energy costs a lot more there than it does here. The Swedes have abundant hydropower on their northern rivers, but they have negligible fossil fuel reserves (oil, gas, coal) and are importing more than 70 percent of their energy, chiefly in the form of oil. Such heavy reliance on imported energy is not only "very dangerous" politically, according to the Swedish experts, but it also tends to drive up costs. In 1974, for example, light heating oil cost 41 cents a gallon in Sweden compared to 30 cents here, while heavy heating oil cost 30 cents there and 23 cents here. In 1973, a Swedish worker had to work half again as long as his American counterpart to earn wages equal to the cost of a given amount of fuel oil. And in previous years the difference was even greater.

The cost factor has forced the Swedes to pay great attention to energy efficiency. "We produced a generation of more energy conscious engineers than countries with fossil fuel more easily available," says Rune Hellerqvist, executive vice president of Sweden's SCA Corporation. "This might be one of the reasons why Sweden compares relatively well when efficiency in energy utilization is measured."

The Swedes hope to do even better in the future. In 1975, the Swedish Parliament approved an energy policy aimed at reducing the growth rate of energy consumption from its pre-1973 level of about 4.5 percent per year to an interim average of 2 percent per year for the period ending in 1985 and a final goal of zero energy growth in the 1990's. That zero growth goal, in the opinion of some Swedish experts, will require some changes in traditional life styles, such as increased reliance on public transportation. The plan puts as heavy an emphasis on conservation as on supply, largely because the Swedes face problems in expanding their supplies of energy. They want to reduce their dependency on foreign oil. They doubt that power from the sun, wind, or geothermal heat will make any significant contribution before the tail end of the century. And they face political opposition to further expansion of hydropower or nuclear power. Although hydropower could be increased by 50 percent, environmentalists were successful during the 1960's in getting Parliament to oppose damming of the major unexploited rivers so as to preserve them in a more-or-less natural state. And although Sweden contains large reserves of low-grade uranium, environmentalists have put a brake on tearing up the country to mine it. Moreover, the leading party in a coalition that took over the government in 1976 is opposed to nuclear power development. As a result, new laws have tightened the conditions that must be met before a reactor can be put into operation.

Thus far, the Swedes seem to be living well within the 2 percent energy growth budget that they have set for themselves. But this is largely because of a slowing in energy use by industry which may, in turn, reflect recession years in 1975 and 1976 rather than a permanent change in consumption patterns. "We don't think that we can give any considered opinion about industrial consumption until we will anew see what happens during a year of normal economic activity," says Erik Grafström, chairman of the Swedish State Power Board.

The Swedes appear to use energy more sparingly than Americans do in many key sectors of the economy. Various participants in the seminar noted that:

▶ Energy usage for transportation is "remarkably lower" in Sweden than in the United States, primarily because cars are smaller, distances are shorter, and there is greater reliance on mass transit. These trends are encouraged by stiff taxes on gasoline (which now costs $1.50 a gallon) and heavy vehicles. However, further progress may prove elusive. In the current effort to cut energy growth to 2 percent a year, transportation has proved a "problem child" for which "prices and taxes don't seem to work." Moreover, the Swedes import the bulk of their cars from other European countries, thus it is difficult to launch a unilateral program to make automobiles more energy-conserving.

▶ Swedish industry tends to be very conscious of the need to conserve energy, with groups functioning in almost every plant to scrutinize energy use and make proposals for savings. After the shock of the 1973 oil embargo, some companies took simple, inexpensive steps that cut energy use 20 to 25 percent while the overall industry saving was perhaps 10 percent. Some of those savings have been lost now that the embargo pressure is over.

▶ The Swedes use less energy for residential and commercial space heating, largely because of energy-efficient construction techniques that are encouraged by building codes, loans, and subsidies. Moreover, about one-fifth of the Swedish demand for space heating and hot water is met by 50 centralized district heating systems, which distribute hot water to users in a given region. This district heating network yields substantial fuel savings, especially when the plants are also used to produce electricity.

For the future, Sweden's official policy is to try to keep its options open and avoid locking itself into reliance on fast breeder reactors or coal. A smorgasbord of renewable energy sources is under scrutiny, including biomass, solar heating, and wind; but some Swedish experts fear that institutional momentum will push them in the direction of coal or nuclear sources unless strong measures are taken to ensure that all options have an equal chance. An energy commission was appointed a few months ago to analyze the consequences of various alternatives. Its report is to be completed next year and will form the basis for development of a Swedish energy policy for the period up to 1990.—PHILIP M. BOFFEY