international news

Congress boosts electric car research

by Colin Norman, Washington

MEMBERS of the House of Representatives returned to Washington from their summer vacations last week and promptly passed a bill which, according to its supporters, may save the United States as much petroleum as the entire supply from Alaska's North Slope. The key to that amazing prediction is the successful development and mass production of an electrically powered car—an idea which has been backed in recent years by plenty of rhetoric but few dollars.

The bill would provide as much as $160 million over the next five years for a research and development effort designed to improve battery technology and to pave the way for commercial introduction of electric vehicles on a grand scale. That amount should be compared with the trifling sum of $1.166 million which was spent by the federal government on battery-powered vehicle studies between 1969 and 1974.

Battery-powered cars are, of course, already in commercial production, but their range is limited to about 50 miles because they use conventional lead–acid batteries which need frequent recharging. Nevertheless, as one proud owner of an electric vehicle, former Atomic Energy Commissioner Clarence E. Larson, pointed out in a letter to the *Washington Post* last week, 50 miles is quite far enough for most city trips.

The potential market for electric cars is certainly large. For one thing, it is estimated that 50% of all car journeys in the United States are less than five miles, which says a lot about unnecessary use of the automobile. A more pertinent statistic is that about 98% of all trips taken with second family cars, lie within the 50-mile range of present battery technology. The second car, which is part of the American way of life, is therefore clearly the target of the electric car industry if, or when, it is in business.

Other advantages claimed for electric cars are that since they will mostly be charged up overnight, when electricity demand is low, no new electricity generating capacity will be required. It also goes without saying that the lack of pollution from the car itself will be a good selling point. And much is also made of the fact that transportation now accounts directly for about 25% of total energy use in the United States; the potential saving in imported oil by replacing petrol-driven cars with electric vehicles is therefore immense. (But it should be noted that total energy savings will be negligible since the energy required to produce the electricity will offset the savings in petroleum. The important point, however, is that the net effect will be to shift energy consumption away from oil to coal and nuclear power.)

But the picture is not quite as bright as the most ardent enthusiasts maintain. Political, technical and economic problems could all stunt the growth of the fledgling electric car industry.

First, the costs. A study carried out by the Environmental Protection Agency, which was published last October, concluded that electric cars would be between 20 and 60% more expensive overall than equivalent conventional cars until battery development significantly reduces battery depreciation costs. The expense of charging up the battery is only a part of the total operating costs, and some technological advances will be required both to extend the capacity of batteries and to make them more durable.

As for the range of electric cars—probably the chief commercial drawback of present models—a committee of the National Academy of Sciences estimated in 1973 that it would take at least four years, assuming adequate funding, to develop an advanced battery power plant with a range of over 100 miles. The committee estimated that it would then take an additional seven to 10 years to mass produce cars with advanced batteries. Those time scales are now considered to be optimistic, however, largely because private and public funding has not built up as rapidly as expected.

Finally, neither the automobile industry nor the oil industry have shown much enthusiasm for the electric car. Both are powerful lobbies and according to some observers they have been effective in holding up the development of battery technologies. Whatever the truth of allegations, it would certainly be a major operation for Detroit to

Pasteur Institute on way back to solvency

AFTER reviewing a report of the Pasteur institute's financial status, Madame Simone Veil, Minister of Health, has persuaded the French government to increase credits allocated to it from some 20 million francs in 1975 to 50 million francs in 1976. This is in addition to subsidies to the institute's teaching activities, and to total or partial salaries paid to some Institute researchers by the Centre National de la Recherche Scientifique and the Institut National de la Santé et de la Recherche Médicale.

The new budget is to be approved by the parliament, but it has already been announced by the Ministry of Health and, barring the unforeseen, should be passed.

According to Dr Joel de Rosnay, director of development, the grant will ensure solvency, and enable the institute to continue its development following a businesslike reorganisation earlier this year. It covers about half of the expenses of the foundation, the research branch of the institute. The rest will come from other resources, including interest on capital, donations, and income earned by Institut Pasteur Productions, the institute's commercial arm. (A forthcoming innovation will be the standardisation of the "mutatest" devised by Dr Bruce Ames of the University of California at Berkeley. The test relies on the ability of carcinogenic chemicals to cause mutations of strains of the common bacteria *Salmonella typhimurium*. Developed in France in collaboration with the International Agency for Research on Cancer in Lyon, it will be available commercially).

In addition, during the recent visit to France of Sheikh Sabas Al Salem Al Sabah, the Pasteur Institute received from Kuwait a donation of 5 million francs, about half of the institute's annual deficit. This donation will be used "out of budget" to finance research on infectious and tropical diseases, embryology and cancer.

—Alexander Dorozynski