

Resuscitation for advanced ground transport?

THOSE in the UK engaged on research into advanced ground transport, and in particular transport by magnetic levitation and propulsion ("maglev"), suffered a sorely-felt setback two years ago when the Conservative government decided not to continue its support for the work of Tracked Hovercraft Ltd.

If they needed a reminder of how unlucky they were by comparison with their contemporaries working years earlier on supersonic air transport—who were more fortunate in being allowed the indulgence of the "white heat of technology" era, when economic obstacles were less obvious—it came last week in a report from the Science Research Council (SRC).

The report records the reasons why a panel established by the SRC's Engineering Board rejected a request from a group of universities for support for a programme of research using the hovertrain test-track facilities at Earith, near Cambridge. The application followed a recommendation from the House of Commons Select Committee on Science and Technology that the track should be maintained as a focus for research work.

The report's main conclusion is hardly encouraging. The prospects for the adoption of maglev techniques for the "slowly evolving" urban developments, or for inter-city ground transport at speeds in excess of those of the Advanced Passenger Train (APT), are, it says, "at best highly uncertain".

One important reason for this, it adds, is "the lack of knowledge of the technology, and therefore of the likely cost and performance obtainable . . . when seen in the context of the world economic situation".

But the report's real emphasis is on the absence of an adequate body of knowledge, which was underlined by the "lack of success" of large-scale demonstrations. Moreover, "our comprehension of the theory, design and performance of the various forms of linear motor is inadequate".

The report's recommendations, however, offer the scientists more hope. The SRC, it suggests, should encourage analytical studies of linear motors and magnetic suspension systems, experimental verifications of the analyses and, significantly, assessments of the economic implications and safety requirements. And it also proposes that the panel be reconstituted to stimulate research, review the technology and examine the case for a rotation-type test facility, for which a financial commitment of £2.5 million

over five years is tentatively indicated.

Responses to the report from universities, government departments and such concerned industries as British Rail, all of whom were represented on the panel, are now awaited. Grounds for optimism must be few and far between, given the deterioration in the country's (and British Rail's) economic position since the project was dropped amid wide publicity. □

Improving outlook for tidal energy

by Allan Piper

THE slow march towards a fuller exploitation of some of Britain's more unorthodox energy resources advanced another step last week when a proposal for harnessing tidal power in the Severn Estuary received a generally favourable hearing by the House of Commons Select Committee on Science and Technology. The hearing gave leading proponents of the scheme a valuable opportunity to redress a balance that tipped against them following the recent publications of an adverse report by the Central Electricity Generating Board (CEGB), and it seems likely that the committee will have been sufficiently convinced of the project's viability to recommend that it becomes the subject of a full-scale feasibility study.

Meeting in Bristol to take evidence on the Severn Estuary scheme as part of a wider investigation into novel energy sources, the committee heard that the CEGB's main reservations about the cost of a tidal barrage were based on outdated and erroneous assumptions. The main criticism came from Dr Tom Shaw of Bristol University's Department of Civil Engineering, who challenged the estimate that the capital cost involved in the project would be twice that needed to produce an equivalent energy supply from nuclear sources using the American Light Water Reactor (LWR). He claimed that the estimate was no longer valid because recent independent estimates had put the figure at nearly double that quoted by the CEGB. The calculations have in any case been overtaken by Britain's decision not to use the LWR.

Dr Shaw, who has been involved with the project for 10 years, also contested the CEGB's suggestion that the construction of the barrage would consume more energy than would ultimately be produced. He told the committee that once the project was completed, at an estimated present day cost of around £1,500 millions, its pumped storage facility would provide for the continuous generation of elec-

tricity for little or no further capital outlay.

CEGB representatives at the hearing did not dispute Dr Shaw's claims, and the board has indicated its willingness "to cooperate in full" over the future of the scheme. Nonetheless, their apparent opposition to the project so far raises the question of whether the control of any electricity it may ultimately produce need necessarily rest with them rather than with a specially created alternative authority.

The idea of throwing a barrage across the Severn Estuary, which provides an estimated two-thirds of Britain's exploitable tidal energy, was first suggested seriously as long ago as 1924. The latest scheme involves the construction of an h-shaped barrage, the main part of which would span the Estuary from Weston-super-Mare to Cardiff. The pumped storage scheme would operate using the smaller barrier across Bridgewater Bay. Once operative it could produce about 30,000 MWh a year, which is about 10% of the present electricity demand met by the CEGB and about the same as the anticipated output from nuclear sources.

Though the figures and Dr Shaw's evidence may have gone some way towards convincing the Select Committee of the scheme's viability, several reservations remain to be dispelled before it can be given the go-ahead. Not least among these are the problems involved in the construction of the barrage, and its likely effect on the estuarine environment and local shipping movement. Last week's hearing included evidence from local civil engineering consultants, the Severn Valley Water Authority and the Port of Bristol Authority.

Though the attitudes of the SVWA and PBA are apparently not wholly favourable towards the scheme, the corresponding authorities on the Welsh side of the estuary may be less antagonistic. The artificial high tide created by the barrage, for instance, would benefit the port of Cardiff, because for the first time tankers with displacements of up to 150,000 tonnes would be able to approach to within a few hundred yards of the quayside.

Before the Select Committee closes its investigation into the project—a report is unlikely to appear much before the middle of next year—it will call the Secretary of State for Energy, Tony Benn, to give evidence. His ministry has presented him with an unfavourable report on the scheme, and the committee will be interested to learn why the project is not considered worthy of a feasibility study.

Whatever the details of the committee's eventual recommendations, supporters of the scheme should be