THE ELECTRIC CAR AND EUROPE'S INTELLIGENT TRANSPORT SYSTEMS FUTURE... FOLLOW THE MONEY.

Transport policy is usually seen as running counter to politicians' rawest political instincts. Offering solutions that cost billions and often stir up media-fuelled opposition from local communities, they rarely get credit and in any event pay off only well beyond the lifetime of the administration that proposed them.

Be that political reality as it may, those at the forefront of policy today know that we are at a crossroads where that icon of mobility and cornerstone of all our transport policy - the oil fueled car that delivered the first transport revolution, stands out as an unsustainable addiction that we are not as yet truly ready to address. As the climate change agenda, "peak oil" controversy, congestion management and, most importantly budgetary pressures collide, transport, and road transport in particular, are set to cause increasing consternation and challenge to those at the highest levels of European government.

The transport sector makes up around 25% of our carbon emissions, with road transport providing well over half of that, mostly from cars. In order to achieve Europe's 2020 target of 20% emissions cuts, let alone the 30% cut contemplated by the European Union, we are going to have to dramatically reduce emissions from cars. In the near term (i.e. 2010-2015), this will mean greater use of biofuels and hybrid technologies, plus significant modal shift between the car and public transport. But in the medium term (i.e. 2015-2025) a move towards the electric vehicle is increasingly invoked as the way to ensure that the transport sector makes its contribution to meeting the overall target.

Governments across the world are increasingly attracted to this vision, and are banking on innovation from the private sector car manufacturers to deliver technical solutions as soon as possible. But beyond the daunting infrastructure investment needed to turn this vision into reality, it carries another – less remarked on – sting in the tail: it threatens a major government revenue stream – fuel duty. This is money no Government can afford to do without, yet the advent of the liquid-fuel free electric car is a direct threat to what accounts for approximately 5% of Government revenues.

Petrol and diesel can only be delivered to the mass market through filling stations; this makes it simple to tax. It is not the same for electricity. We all have access to electricity in our homes, offices and daily lives and its consumption is not subject to special duty. Furthermore, once in a vehicle, it would not be possible to confirm that duty had been paid on electricity, assuming a duty on electricity used to power vehicles were introduced – at least without the further ubiquitous uptake of costly technologies.

Looking to technical solutions, it may be fairly easy to design a specialist plug and socket, but this could be copied and would need to be adopted as a common standard across international boundaries to allow the freedom of movement we currently enjoy. And because under any technology scenario the charging time for electric vehicles is going to be substantially longer than the couple of minutes it takes to fill a car with petrol, we are going to have to find many new and varied sites for charging stations (on streets, car parks, home) rather than the relatively scarce and easily identifiable filling stations that we are used to. This physical reality means even greater cost and complexity for the "smart" infrastructure necessary to enforce and collect a fuel duty on electricity (not to mention the high cost of installing a new electric grid to deal with increased demand on the network).

In theory the transport revenue shortfall could partly be made up by congestion charging schemes. However, while congestion charging schemes have been trialled around the world, successful ones are few and far between. Local populations are never keen to introduce what they see as an additional form of taxation for limited benefit and in regional cities many of the revenue-raising ambitions of transport planners and policy makers have been dashed against the electoral rocks of local referenda.

It is only in cities where the congestion problems are acute and widely shared, and alternative forms of transport already exist, that such schemes have won public support. London is a prime example and yet even here a proposed enlargement of the charging zone suffered electoral defeat. So if not a classic congestion charging scheme as we know it, what?

To date, national road pricing has fallen in the 'too difficult' box for most political leaders. Yet with the fiscal problems facing governments, now looks like an opportune time to reopen it. The technology already exists to improve traffic flows, co-ordinate traffic light phasing, optimise routes and charge vehicles by the journeys taken. What is needed is the vision and drive from politicians to bring these varied tools together to form comprehensive solutions to passenger car-based transport.

The prospective loss of billions in fuel duty revenue for the exchequers of countries across Europe given a move towards electric cars could just provide the necessary added stimulant for action. And indeed, although in their infancy, such Intelligent Transport Systems (ITS) are starting to make their way up the transport policy agenda across Europe.

The creation of such systems (turbo-charged or not by the revenue conundrum in the electric car vision) represents an enormous challenge for government, and opportunity for industry. The implementation of a coordinated, joined up, technologically-enabled solution is not something Governments have traditionally been very good at. But this challenge – by its very nature – demands it. The key will be to develop innovative revenue and funding solutions that enable cash strapped governments to invest in an ITS future they can't afford to lose.

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