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***MOBILITY:  
WHERE DOES THE WORLD WANT TO GO?***

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As far as mobility is concerned, one answer to the question in the title might be that the world wants to go further and wants to do so faster, cheaper, more safely and with less environmental harm than before. This is, in fact, a summary of what has actually been achieved over the last fifty years. The public perception of transport is not quite so positive but the facts are clear; transport is faster, cleaner, more efficient and safer than ever. And yet there is still much progress to make on all these parameters. But the key question now is whether we can continue to deliver on all of them simultaneously.

One of the features of transport, and one that is often a problem, is that transport does not exist for itself. It serves the economy and society and is therefore required to respond, often instantly, to changing economic or societal priorities. Over the decades, therefore, you will see transport responding to the need for greater regional balance, for more jobs, for greater safety, for more security, for more accessibility for disadvantaged groups, for less environmental harm. All of these are legitimate concerns, and transport is being called on to advance on many fronts at the same time. One difficulty is balancing the tradeoffs in priorities among these multiple objectives.

At this time, there is no doubt that the priority concern among political decision-makers is global warming. Strikingly, the trends in transport are completely at odds with the political aspirations on climate change. For example, global aviation is set to double in less than 20 years; air freight to even treble. Car ownership is set to more than double, and in China to multiply possibly by 20. Container ports are being built at an unprecedented rate, and port traffic is also expected to more than double in twenty years. Yet, on the greenhouse emissions front, many governments and international bodies are setting targets of 50 % and more for declines in emissions by 2050. While specific targets for transport are rarer, the political expectation is for transport to meet these kinds of reductions, independent of cost effectiveness considerations. In a new UK report, the King Report, the aim being spoken of is for a 90% reduction in per kilometre emissions. It is not an exaggeration to say that we, in the transport sector, do not know how to do this; indeed it is closer to the mark to say we have virtually no idea of how to reconcile our past experience and the trends we see with such targets. The aspirations and the trends are so out of line, one must wonder whether the key assumptions and presumptions about mobility and about transport are to be challenged. In the other policy areas mentioned (such as road safety or traditional air pollution), objectives were met by pushing a little more on traditional policy levers. But for climate, it is not at all certain that tweaking traditional levers will have sufficient impact. The challenge of climate change is unprecedented.

## How can policy respond?

It is clear that there is no simple or single answer. Moreover, though it is a global problem, global responses are unlikely in the short term given the divergence of views.

Some elements of the response might include the following:

First, transport must not stop investing and spending. There are enormous expenditure needs in ports, hinterland rail connections, airports, urban public transport and roads in many places. Without investment, transport will be blocked; congestion will increase, economies will be hindered, environments will degrade. Transport assets need to be maintained, upgraded and renewed. This is costly, but benefits future generations. Some think that sustainable transport means spending less. The opposite is true. We need to spend -- selectively and wisely -- but each kilometre of new capacity costs more now to build and maintain.

Second, to reduce emissions we need both technological advances and policy initiatives.

On technology, expectations vary, but at least for some politicians it is quite likely that these expectations are too high. Politicians speak often of the “hydrogen economy”, the “oil free economy”, and other miracle-like solutions. But, according to the most reliable industry experts, it is highly likely that even in 2030, the majority of cars will still run on conventional fuels. Over this time horizon new vehicles could be as much as 50% more fuel efficient if governments intervene to provide the certainty manufacturers need to make investments to bring the new technologies to commercial production this quickly, as well as to ensure engine technology improvements are not swallowed up by increases in power and weight. One promising possibility is for electric hybrids fuelled partly from the grid. So the emissions will depend on the electricity source and how successful we will be in reducing emissions there. What politicians and others seem to underestimate is the importance of costs. Costs of some alternatives are still an order or orders of magnitude too high. Moreover, transformation is a process that takes time. And new fuel efficient engines do not replace existing technologies overnight – the average car in the fleet is 7 years old in highly developed economies, and much older in developing economies – so it takes at least 7 years to renew only half the fleet.

If this is right, and if new technology cannot deliver the kind of major reductions that we will need for three or four decades, what are we to do? Well, there are actions we can take and take now that can reduce emissions and can do so cost effectively. Several cost effective actions have been identified, also by Industry -- on tyres, on lubricants, lights, air conditioners

and on driving behaviour -- that can make a difference. In summary, little things matter, they add up and they are worth doing. Fuel efficiency improvements are not only worth pursuing, they are the main area where the rapid gains needed are to be had.

But improved fuel efficiency alone is not sufficient. This is because increased fuel efficiency means that driving becomes cheaper, and when something is cheaper, people demand more of it. In addition, increasing fuel economy makes oil-based fuels more attractive, so reduces the incentives to switch to alternative technologies. A carbon tax is a good instrument to re-establish those dynamic incentives. So we should not focus on the choice between carbon taxes and regulation of fuel economy, but rather we should see them as complementary. But of course, the political reality is that such a tax will involve considerable political will. Already however, we see some countries indicating that they will seek to implement such an instrument.

And here the crucial issue is the set of signals that are given to consumers through policy. Up to now these have been inconsistent at best, and for example, if the EU voluntary agreement is thought to be a failure, the failure should be laid as much at the door of Governments who never supported the aims with concrete measures – that is tax incentives to create a market for low emission vehicles. The issue now is that of vehicle performance; large potential CO<sub>2</sub> gains have been lost through the growing weight, size and performance of cars. 0-100 km/hr acceleration times continue to come down. The new CO<sub>2</sub> emissions regulations for passenger cars in Europe need to contain the tendency for weight to increase – which should rule out differentiation of the standard by weight. If the standard is to be differentiated, it should be by vehicle footprint (distance lengthwise between wheels times distance width wise between wheels) not weight. Governments need to create the certainty required for industry to invest in efficient technologies. If Governments are now serious about global warming, this is where the action needs to be focussed. There is no one measure: probably all are needed. Differentiated taxation structures can make a difference (we saw it clearly in the UK with the business car sector), as can regulations and consumer information campaigns. Pricing of road use too can increase economic efficiency and reduce emissions. If we rely on one instrument, it is likely that impacts will be too limited.

Finally, there are the range of traditional transport policy instruments, like traffic management, encouraging public transport and a switch to non-road modes. These are important components of transport policy and can all contribute to CO<sub>2</sub> reduction strategies.