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WHAT DIRECTION WILL THE DECARBONISING OF THE TRANSPORT SECTOR TAKE?

Investec Conference on Decarbonising the Transport Sector

On 10 November 2017 Investec hosted a conference on trends and technologies for the decarbonisation of the transport sector. Four excellent presentations by Professor Nigel Brandon of Imperial College London, Professor Katsuhiko Hirose of the Toyota Motor Corporation, Professor Neville Jackson of Ricardo plc and Dr Robert Trezona of IP Group plc were followed by a stimulating Q&A session.

Professor Brandon explained that he believed that a wide range of both battery and hydrogen fuel cell electric vehicles offered routes to achieve significant levels of decarbonisation in the transport sector. Both battery and hydrogen fuel cell electric vehicles require the decarbonisation of electricity and/or the development of hydrogen. As such he believed that the provision of low carbon fuels for transport will become increasingly connected to other parts of the energy system, including power and heat.

Professor Hirose began his presentation by noting that increases in wealth were linked to transport and that as GDP per capita rises so did the desire for mobility. He also noted the potential role that hydrogen could play in the transport sector. In this context he explained that Toyota continues to invest and develop its hydrogen fuel cell technology for cars and is undertaking work for its use in heavy duty applications at the Ports of Long Beach and Los Angeles. Hydrogen appears to offer the best solution for higher energy requirements e.g. range, and therefore is a better alternative to batteries for haulage trucks travelling long distances, similarly for automobiles if range and short refuelling times are desired characteristics. During the Q&A Professor Hirose confirmed that did not foresee a “zero-sum” game with one winning technology dominating all others in the transport sector. Instead he anticipated different viable technologies would emerge and co-exist.

Professor Neville Jackson’s presentation emphasised that legislation was being used by a number of different countries to develop Zero Emission Vehicles (ZEV) in order to tackle air pollution. Professor Jackson referenced the limitations of batteries, particularly with regards to energy density, and that as a result he considered low carbon liquid fuels would have a role to play. Electric vehicles are still expensive and battery costs may only fall to below US\$100/kWh by 2030. Shared car ownership policies may therefore be an important factor in making electric vehicles cost competitive.

Dr Trezona used his presentation to offer a start-up investor perspective on the low carbon transport technology sector. The automotive sector was generally not a good market for start-ups but green policy and digital tools had improved the investment environment. He flagged that there was no ‘wonder technology’ that would dramatically change the overall learning rate for (hardware) systems. That said he believed that there were plenty of smaller opportunities for start-up businesses that developed technology that solved real market problems in the transport sector. Dr

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Trezona also confirmed that hydrogen is back and that he envisaged that it would play some role in the transport sector.

Hydrogen's potential contribution to decarbonisation efforts in the UK was largely dismissed by the influential late Professor Mackay author of "Sustainable Energy-Without the Hot Air" published in 2008. The fact that all four speakers now thought hydrogen may have some role to play perhaps illustrates how much thinking on decarbonisation has changed in a relatively short space of time. There also appeared to be no real appetite for developing CCS projects to capture the carbon produced when manufacturing hydrogen. This may be due to the prohibitive development costs and the UK Government's current position on funding CCS. It was also noted that there was presently very little investment in the alternative technology to CCS, producing hydrogen by electrolysis. This suggests that something is going to have to change if hydrogen is indeed to become part of the solution to decarbonisation in the transport sector.

Tim Malloch trained at Macfarlanes and subsequently moved to Freshfields Bruckhaus Deringer, where he advised on corporate transactions and finance projects. After 7 years at Freshfields and a sabbatical spent abroad, Tim joined ClientEarth, an award-winning legal NGO, and devised a litigation strategy that helped persuade the UK Government to abandon its plans to build a new generation of coal power stations. Tim returned to private practice in 2010 and has advised on a wide range of high-value commercial disputes.

Prospect Law is a multi-disciplinary practice with specialist expertise in the energy and environmental sectors with particular experience in the low carbon energy sector. The firm is made up of lawyers, engineers, surveyors and finance experts.

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