

Electric cars and super batteries – energy game-changers.

Notes arising from a discussion that was organised on the 26th of October 2017 by the Windsor Energy Group (WEG). The meeting was chaired by Lord Howell, chairman of WEG



Speakers included:

- **Graeme Purdy**, Ilika plc
- **Asad Farid**, Thematics team at Berenberg Bank
- **Clive Southwell**, Clive Southwell Consulting
- **Chris Wright**, Moixa Energy Holdings Ltd
- **Zhenggang Nie**, Imperial College London
- **Stafford Lloyd**, Riversimple
- **Prof. Nilli Lavie**, UCL Institute of Cognitive Neuroscience

Points arising:

- Toyota to launch 100 % electric car by 2020 and intends to commercialise solid state batteries by the early 2020s .
- Current electrolyte technology is unsafe, expensive and offers limited range.

- Solid state batteries will double to triple the range of electric cars to 500-600 miles.
- Solid state battery manufactured at scale should be cheaper.
- Solid state lithium ion batteries to become mainstream over the next decade.
- UK currently lacks a well-planned standardised charging infrastructure
- There is great potential for more home and workplace charging.
- The growing contribution of renewable energy on the grid, combined with increasing numbers of EVs will put a strain on the electricity grid.
- The solution to this is intelligent control of the assets that are causing the issue, turning them from being the cause of the problem to being part of the solution.
- Ensuring all charge points are smart (internet connected) would be part of developing a virtual national grid with real-time power management.
- More than 95% of China EV sales were made by domestic manufacturers.
- China plans to have five million EVs on the road in 2020 and growing to one in five vehicles by 2025.
- Impact on oil demand of the growth of EVs by 2040 ranges from less than 1 million barrels per day to 14 million barrels per day.
- China is set to be the world leader in EVs and next generation batteries.
- Hydrogen powered vehicles may complement EVs as an alternative power source for transport
- Hydrogen is suitable for a broad range of applications, including larger vehicles, rail and space heating.
- Driverless transport will also reduce fuel demand as it should be more efficient with fewer accidents.
- At present automated transport is energy intensive so research is underway to simplify by mimicking human processing skills that focus on essential core detail.

If you would like to contribute to the on-going review of new energy developments and would like more information then please contact the WEG Secretariat on info@meconsult.co.uk

