AFRICAN ENERGY AND MINERALS MANAGEMENT INITIATIVE (AEMI)

DECARBONISATION AND INNOVATIONS IN THE ENERGY SECTOR

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In my previous article, I briefly discussed energy transition. Taking into consideration the UN Sustainable Development Goals and the Paris Agreement, there have been efforts to decarbonise the energy sector in different parts of the Globe. Decarbonisation in simple terms refers to the reduction or removal of carbon dioxide from energy sources. This has been a major goal for many countries aiming to decarbonise the power sector by among others increasing the share of low carbon energy such as renewables and natural gas; additionally, capping of greenhouse gas emissions from fossil fuel power stations through carbon capture and storage (CCS) technologies has also been identified as a form of decarbonisation. Recent efforts in decarbonisation have been directed to the deployment of renewable energy and reduction of dirty fuels including oil and coal. Although there are various issues to be addressed with regard to decarbonisation, in this article the focus will be on the deployment of electric vehicles.

Before a discussion on electric cars and decarbonisation, it is worth noting that most countries are still reliant on fossil fuels including oil, gas and coal. Indeed, over 80% of Africa′s electricity is generated from fossil fuels. Additionally, global demand for fossil fuels is expected to grow by around a third by 2040 (BP Energy Outlook, 2018). This increase is mainly driven by increasing prosperity in fast-growing emerging economies such as China and India. Additionally, the increase is also supported by population growth, estimated to increase by around 1.7 billion to reach nearly 9.2 billion people in 2040. Moreover, the global boom in urbanisation is projected to increase, as almost 2 billion more people are likely to live in urban centres by 2040 and Africa is projected to contribute one-third of this increasing urbanisation. (BP Energy Outlook, 2018). All these global developments imply that Africa will require massive energy resources, especially fossil fuels, to not only cope with the population growth but also with booming urbanisation. Nevertheless, decarbonisation should not be ignored.

Movement to electric vehicles

The transport sector is one of the largest contributors of GHG emissions and this has necessitated steps to find alternative transport thus leading to the introduction of e-transport. In the EU there is an ambitious target to reduce the use of internal combustion engine vehicles by 50% by 2030. Further to this, the alternative fuels directive encourages Member States to develop systems which enable electric vehicles (EVs) to feed power back into the grid.

With respect to Africa, there are no ambitious plans and not much progress has been made in the deployment of EVs as is the case in Europe. However, EVs have made their way in countries such as South Africa, Kenya, Madagascar and Zimbabwe. In South Africa, electric cars were introduced by Nissan Leaf in 2014. BMW later also entered the market introducing its i3 and i8 brands. Jaguar Land Rover also has plans to enter the SA electric vehicle market. The brand in partnership with electric vehicle charging authority GridCars, and with a R30-million infrastructure investment- plans to invest in EV infrastructure including setting up 82 new public charging stations in the country′s major hubs and along frequently-travelled holiday routes (Jaguar, 2019). In Kenya, people are embracing second hand EVs and close to 100 units have been imported, mostly Nissan Leafs. There are plans to grow an all-electric fleet (Nissan Leafs) to 200 by 2020 (Nopia, 2019).

Used Nissan Leafs EVs are also common in Zimbabwe and these are sourced from Japan. The country also has electric motorbikes mostly from the Chinese market. Nevertheless, on a general basis, Zimbabwe generally has a small vehicle market with annual new gas/diesel sales of under 5,000. Additionally, in Uganda, there is potential and support for EV. In this respect, Kiira Motors Corporation (KMC) an Automotive Manufacturing Company was incorporated by the Government of Uganda and Makerere University with the main aim of championing value addition in the Domestic Automotive Industry. In 2011, the company designed Africa′s first electric car and this was followed by its first hybrid car in 2014 and a solar bus in 2016. The electric car, under the Kiira EV Smack is a 5-seater front-wheel drive sedan with a traction motor powered by a rechargeable battery bank and an internal combustion engine-based generator (Kiira Motors Corporation, 2019a); the Kiira EV is Africa′s first electric vehicle. Besides the deployment of electric vehicles, there are other efforts to decarbonise the energy sector and these will be tackled in my next article.