**6.  Think about an academic subject that inspires you. Describe how you have furthered this interest inside and/or outside of the classroom. (350 words)**

300 OMR. Our electricity bill had never reached that high; even in the 110F degree summer heat with all our air conditioners blasting at 65 degrees, the bill was usually 80 OMR at most. During my quest to uncover this surge in cost, I was wallowed into the idea of how I can reduce the unpredictability of my electricity bill. I stumbled upon a method to track electricity usage in real-time: the smart grid, or more specifically, the smart meter.

I was intrigued by smart meters’ potential to record near real-time data about the amount of electricity being used in homes, while also being able to send this information directly to energy suppliers. To widen my knowledge on smart meters, I interviewed an innovation engineer at the UK’s National Grid, who introduced me to a challenge that currently hinders smart meter’s rollout in the UK: the one directional flow of electricity in the current grid. By enabling a bidirectional flow of electricity, the smart grid facilitates effective communication between suppliers and consumers, thus, creating a more reliable and sustainable grid.

I continued my smart grid endeavour by pursuing an internship at a local Indonesian electrical consulting company. My previous research on electrical grids had focused on that of the UK. It was not until I started my internship did I realise the major differences between the UK's and Indonesia’s grid. Due to these differences, I had to adapt and relearn aspects of the electrical distribution process I thought I already knew to ensure it syncs with the case study given. While modelling a rural grid, I worked with people much more experienced than me and learned to take constructive criticism and be more vulnerable with any gaps in my knowledge.

While the value of my electricity bill that month still remains a mystery, it brought me something of greater value to me: how I can prevent unusually high electricity bills for others in the future. My initial shock of receiving that bill has brought me to pursue the ‘smart grid’ field in the future, which begins from my drive to study electrical engineering.