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Social Awareness for the People of Northumberland

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My proposal aims to raise awareness among the inhabitants of Northumberland on the advantage of using electric cars compared to conventional vehicles. Moxie Energy Group's project is to impact the world by using renewable energies and new techniques to save our beautiful planet. To achieve this, people must also be convinced and participate in the change. Electric vehicles are part of our daily lives, and many people are involved in the zero waste and clean energy policy.

However, vehicles are often parked without doing anything, and the energy stored in the batteries is useless. The old way was to use grid power to charge vehicles and spend money on unused capacity. Vehicle-to-Grid (V2G) technologies use the energy stored in your cars for other purposes. I propose introducing this technology to the people of Northumberland and making them feel how great it is to be part of a project that will help millions of people. V2G battery capacity can be used more efficiently when compared to one-way smart charging. The extra efficiency contributes to decarbonization, energy efficiency and electrification.

V2G directs the charging and discharging of electric vehicle batteries according to user needs and the power supply available on the grid. When the electricity supply exceeds the demand, charging occurs at the maximum level; however, vehicles can then supply electricity to the grid during peaks in electricity demand. This technology can turn the energy stored in your vehicle's batteries into cash. "Their main advantage, in addition to the disadvantages similar to car sharing, is the possibility of moving to different geographical areas according to the needs of the electrical system" [1]

The trial launched by OVO energy shows that the participants earn money by using the V2G charging system in V2G credit which is a saving for them. On average, customers received £80 per month in V2G credits, resulting in a net saving of around £30 per month on the energy bill, or £360 per year [2]. The V2G benefits significantly reduce individual annual bills. It can also be used for domestic energy supply. Moxie Energy Group is working on strategies to preserve electric vehicle batteries while using V2G systems. V2G is beneficial for consumers, energy companies and even car manufacturers. More communication should be done around renewable techniques to increase awareness amongst people and those that do not feel integrated yet.

As an industrial engineering trainee, my goals are to drive Moxie Energy Group to the top of the energy sector in Northumberland and Scotland. Second, find strategies to get people to choose v2g over the conventional billing method. In fact, according to Northumberland Knowledge's 2011 Census Fact Sheet, Northumberland residents are 365, mainly between the ages of 25 and 65, of which 33.2% are retired [3]. With the population being elderly, the traditional method of sensitization will be well chosen. People need to know what they will gain by doing this. For example, car energy bills will be reduced if they choose V2G technologies.

The social aspect is key to the success of the implementation of V2G; however, this is often neglected, with only 27% of the project globally taking the social aspects into account [4]. V2G profit is made while people

are plugged into the system, but people only go online when their batteries are low. Indeed, the ideal technique is to see people connected when their car is static [5].

Challenges in my proposal are;

- Non-acceptance of the technology by the elderly population
- Lack of V2G equipment in Northumberland
- Battery efficiency and durability
- People using a non-electric car

I have a bachelor's degree in mechanical engineering, complemented with a master's degree in industrial engineering. This training helps me understand and learn about V2G technologies and battery degradation with vehicle-to-grid operations. In addition, I have a certificate in waste generation and management, lean and environmental perspective, which can help me find robust solutions while working with Moxie Energy Group.

Concerning the sociological aspect of V2G, through my family and the environment where I grew up, I interact with many older adults. I believe that I can sell them new ideas.

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