

THOUGHT PROVOKING IDEAS OF THE GLOBAL ESSAY COMPETITION 2023

A New Generational Contract: Redefining Future Transportation

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1. Introduction

The previous generations have made enormous contributions to the world in various aspects of human life; however, their legacy in certain areas is significantly unpleasant. Notably, they have wrought enormous havoc on the environment. The effects of climate change are increasingly becoming more evident across the globe, yet the previous generations have paid little attention to the climate and environment to ensure their daily activities are conducted sustainably. The current level of harm being done to our environment is unsustainable and would lead to severe consequences soon if major changes are not implemented. Their chosen means of transportation over many decades is noteworthy for an in-depth discussion as provided in the subsequent sections.

2. Transportation

The advent of motor vehicles was celebrated as a revolutionary invention that would transform the world. While it has largely transformed the paradigm of transporting people and goods from one place to another, its over-reliance has been costly to the planet^{1,2}. The use of cars as a means of transportation for work, leisure and other activities has laid great burdens on the human environment. This has led to the enormous production of greenhouse gases which are destroying the planet with current projections indicating that the levels must reduce by 80% to achieve the Paris Agreement of global warming below 2 ° C by 2050³.

While international and regional organisations set various emission targets for their member states to reduce

the impact of climate change, some of the countries fail to meet these targets with little or no signs to show they will attain them in the near future. Ireland is an example of such a country that fails to meet the yearly emissions target. Ireland has been regularly fined by the European Union for failing to meet its emission targets, costing its economy €600m funds annually⁴. Emissions from private cars are the largest contributor to its levels of greenhouse gases which have seen the country ranked 4th in the rankings of most transport emissions per capita⁵. There is a high car dependence especially in its capital, Dublin, as validated by the last census figures which show that all journeys by cars are estimated as 74%⁶. This is a trend observed across most developed countries. This foundation was laid by the previous generation, and it is at risk of being empowered by the current generation.

In addition, significant car parking infrastructure is available across most cities⁷. However, the reduction of car usage must be addressed either by banning cars completely or significantly

reducing their usage to the lowest minimum in most regions. Schemes such as clean air zones are being adopted in the developed world⁸. Certain areas within a city are chosen and cars that do not meet a set of criteria based on their emissions level are fined. People are charged little amounts of money for the failure of their car's compliance to meet the emissions requirements. However, one can expect this to have little impact since the amount of money charged is relatively equivalent and mostly lower than those that drivers spend at parking slots. Thus, little changes should be expected except major changes are made to the existing systems as proven by theories that have been explored in human psychology. Psychology has helped to understand that changing human behaviour is a process rather than an event since habits are developed over time. People take little action regarding their car usage even though they know it is detrimental to the environment. This is explained by the theory of planned behaviour which stipulates that future behaviour is best predicted by past behaviour⁹. However, if the circumstances relatively differ, past travel

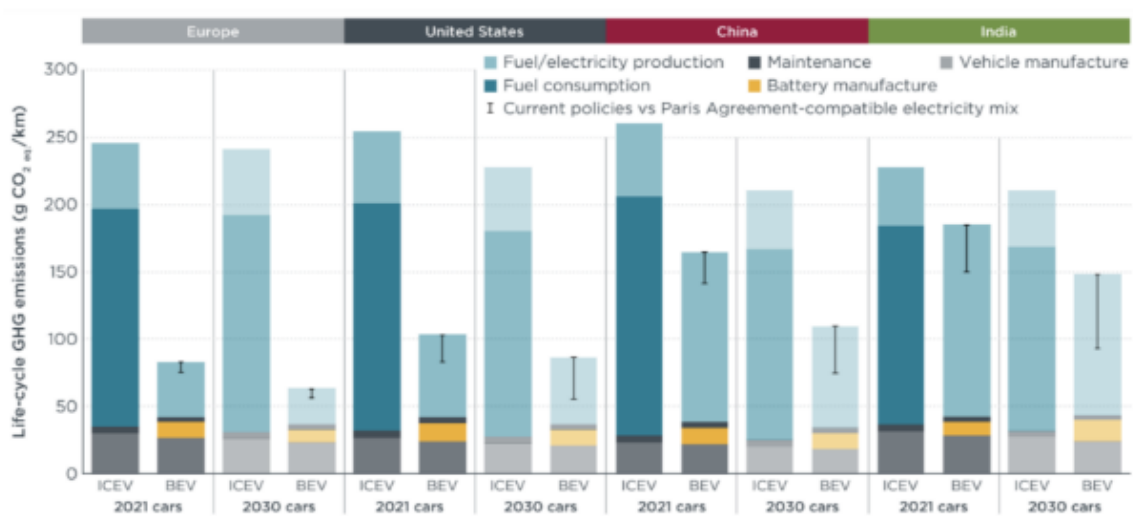


Figure 1: Plot showing the life-cycle greenhouse gas emissions of average medium-size gasoline internal combustion engine in comparison with battery-powered electric vehicles. The illustration shows the vehicles registered in Europe, United States, China, and India for 2021 and the 2030 projections. The gap between the development of the electricity mix and what is required to meet the Paris Agreement are depicted by the error bars [3].

choices would have little contribution in determining future behaviour. Therefore, strategies that focus on interventions that can create changes in attitudes and subjective norms must be implemented.

Electric cars are being touted by governments globally for sustainable transportation. For instance, the Irish government has a set target of a million electric vehicles in Ireland by 2030⁵. While Electric cars reduce emissions in comparison to combustion vehicles; however, they also produce significant emissions over their lifespan as depicted in Fig. 1 which shows the difference in emissions between vehicles with gasoline internal combustion engines and battery-powered electric vehicles. The plot validates the fact that cars in general are not the solution going forward. Thus, the current generation must steer away from the use of cars and aeroplanes as much as possible.

3. Transportation Rating Scheme

A transport rating scheme which will inhibit people from contributing significant levels of greenhouse gas activities based on their travel behaviours should be adopted. Every individual in the society contributes to the total transport emissions; hence each adult over 18 should have the maximum they can contribute to the emissions level each year. This involves tracking transportation modes used by each individual yearly. There are already schemes in place which governments use to assess the cars on the roads yearly. For instance, Ireland has the NCT (National Car Test) checks, a vehicle inspection check, which each vehicle must pass to qualify as road worthy. These checks can be used to check the mileage of a car each year to record how much it was used by its owner and points are then deducted or allocated

based on this. Allocated points would translate to huge fines being awarded to an individual that exceeds the number of accepted miles to be driven by a private car. Individuals who are unable to pay the fines can be mandated to avoid using their car for a specified period as currently being stipulated for drinking-and-driving offences. Alternatively, individuals can be charged higher taxes on a sliding scale of up to a 6% increase. It is also paramount to ensure that individuals with multiple cars have an adjustment that checks that their total does not exceed the stipulated to avoid people owning multiple cars evading the regulation.

The stipulated emission usage of each resident of a country must also include air travel. A digital travel card can be issued to each citizen of a country to monitor their travel behaviour. This can be updated for each trip similar to how people currently use bus and train travel cards. Such travel cards can be synchronised to everyone's digital travel card that collates their travels during the year including air travel with the corresponding national passports. Once a person exceeds their set emissions usage for a year, they must build up their score using sustainable travel modes. This also includes public transportation. This scheme would impose strict travel means on the choice of travel. While people can use their cars within a set number of miles yearly, they would have to combine it largely with public transportation and other sustainable travel modes.

A reward scheme would be incorporated into the system whereby people would have benefits for their sustainable travel choices. This can include a sliding scale reduction in taxes of up to 6%. This can be on the income or property tax for those

who qualify. It is essential to reward people for their environmental consciousness while punishing those who choose to impact damage to the environment through their negligence. Such incentives would ensure that people are geared towards making the necessary changes to their travel behaviour. Travellers who choose to travel by sea would have rewards in comparison to those who choose air travel.

4. Strategies

Sustainable modes of transportation which have been largely neglected in various parts of the world, especially in the Western world should be incorporated significantly into the transportation infrastructure. Travel modes such as walking, and cycling can play immense roles in mitigating the impact of car journeys on the climate. While the core travel mode of transportation in Dublin for instance is car travel, 330,000 cars are taken off Dublin roads daily through walking and cycling¹⁰. This implies that the prevalence of such modes would contribute enormously to taking cars off the roads in various countries. The health benefits of these modes have also been tremendously ignored. Active transport modes keep a generation healthy with better immunity to fight prevalent viruses such as COVID-19. Studies have shown that a daily routine of 10,000 steps can help with blood pressure levels and body composition such as combating overweight¹¹. Hence, studies such as [12] concluded that it should be fostered within the society. This is also of a notable impact on the health sectors. Statistics from the Walking and Cycling Index reports of Ireland indicate that the HSE (Health Service Executive) saves over €29 million each year through

the engagement of Irish residents in walking and cycling¹³.

Since transport is a derived demand, people would mostly choose convenience to reach opportunities nearby to minimise their personal cost (an assumption is made that each person is a rational actor). Therefore, the intervening opportunities around each local region must be considered. For instance, residents in an inner-city region will have less need to travel to the suburbs where there are lesser opportunities. However, residents in the suburbs would commute regularly to the inner city since all the core activities are generally centralised there hence why a significant traffic jam is a norm in major cities at peak hours every morning and evening¹⁴. Therefore, it is vital to decentralise these activities to other regions of the city. Services should be within proximity; hence, residents will have less need to travel.

The 20-minute city strategy¹⁵ should be adopted globally to ensure the proposed travel rating scheme can be fully effective. This involves having all core activities and opportunities within a 20-minute walking distance of each resident in a country as proposed by the Isobenefit Urbanism strategy¹⁶. Each person should be able to complete their daily activity by walking or cycling with little or no need to travel by car to other regions. Settlement hierarchy can also help to better implement the policies by considering each region based on the available services within it¹⁷.

The previous generations adopted a 5-day workweek schedule; however, recent studies such as¹⁸ have shown that it is ineffective. Hence, the 4-day workweek has been trialled in numerous countries such as Scotland and Finland. It is high time since governments adopt this globally to reduce travel needs. In

addition, COVID-19 was a catalyst for the global adoption of working from home (WFH) which was a widely debated topic before the pandemic¹⁹. The movement restrictions brought about by it meant non-essential workers had to fulfil their duties remotely. This was paramount to reducing the pressure on public transportation and most especially on the use of private cars. Thus, fostering WFH must be ensured by constructing the necessary infrastructure to ensure that remote working is a viable option for most people. Remote working hubs should be developed in strategic locations to ensure that employees can engage with their work without having to commute long distances.

Micro-mobility is emerging as a major transportation mode, especially among the younger generation²⁰. Hence, it is imperative for governments to speed up the regulations inhibiting the rental schemes in cities such as Dublin. The existing roads can also be extended to create additional lanes for e-scooters. The existing infrastructure across all cities should be adapted to ensure there

are more cycling and walking paths with park-and-ride infrastructure. Bus shelters must also be made more modern to accommodate individuals with differing abilities.

5. Conclusion

The previous generations have left some unimpressive legacies that have wreaked significant havoc on the environment. This is a cost that would be borne by the present generation; however, if major changes are not made, the next generation will suffer terrible occurrences due to prolonged damage to the climate. The transportation choices of the past generation stand out as a notable problematic legacy; hence, the use of a transport rating scheme is proposed to drive a major change in travel behaviour as backed by theories such as the planned behaviour theory which prove that human behaviours can only be changed through the implementation of significant changes.

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