

Committee: Economic and Social Council

Issue: Promoting the development of sustainable transportation infrastructure

Student Officer: Fotis Giannousas

Position: Deputy President

PERSONAL INTRODUCTION

Dear Delegates,

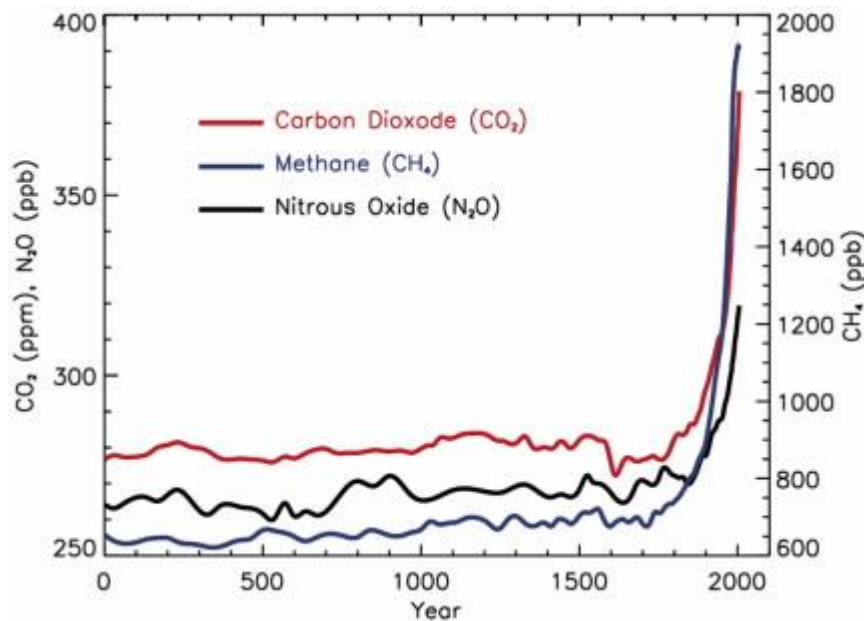
My name is Fotis Giannousas and I am currently in Year 12 in Byron College. This year I have the honor of serving as Deputy President in the Economic and Social Council. In the 21st century, transportation has become a vital part of society and different means of it are used on the daily for a plethora of purposes. Simultaneously, climate change is becoming a major focal area regarding the protection of our planet, and environmentally sustainable transportation infrastructure would be of great importance in hindering the impact of climate change on our planet.

This study guide has the purpose of providing you with information and allowing you to develop a clear understanding on the topic at hand, however, I would like to say that it would also be of great benefit to you as delegates if you conducted extra research on top of this, so to gain a more thorough understanding of the topic. If you have any questions, please do not hesitate to contact me at: fotis.giannousas1@gmail.com

Kind regards,
Fotis Giannousas

TOPIC INTRODUCTION

Transportation is a sector in modern society that is of monumental importance, used for people to move from one place to the other, whether for work, education, entertainment or another purpose. It also allows for businesses' operation, such as online e-shops that rely on aviation and postal services to deliver their products. Transportation is an integral part of economies' business cycle, on top being vital for people's daily lives and enabling them to get to where they need in a day.



Graph showing emissions of three greenhouse gases, Carbon Dioxide, Methane and Nitrous Oxide. The graph shows how the Industrial Revolution worsened climate change through increased greenhouse gases emissions, with the 1700-1800s showing a steep increase in the emissions of such gases, at the same time the Industrial Revolution began. That era triggered greater industrialization globally, and these gases' emissions have increased dramatically, as seen by the drastic increase in the steepness of the gradient representative of the emission of such gases up until the 2000s.

In the 1880-1900s, when the first cars were introduced into society by Carl Benz and Henry Ford, they were undeniably a luxury only available to the upper class society due to their very high cost. However, as time passed and economies of scale led to decreased production costs, making the possibility of lowered prices feasible, they became more and more available to the general public. Car usage increased dramatically, and as a result, so did greenhouse gas emissions, as emissions were no longer confined to the upper class, which comprised an incredibly small part of society as a whole.

Public transport has been part of society, of the urban landscape, since the early 19th century, notable being the development of the first subway system in Boston in 1887. With the passing of time and the development of new technologies and vehicles, public transportation became more and more widespread; in 1890 the London Underground was developed. Despite its prevalence in society with numerous

means of public transportation, many still do not use it for reasons of safety concerns, fearing criminality and the lack of security, inconsistent schedules, or even the lack of cleanliness and overall pleasantness while using them. Many countries have taken steps towards sustainable public transport, such as the Netherlands which possesses electric buses in its public transport fleet. Public transport can be integral in the race for sustainable transportation, with one environmentally sustainable vehicle being used to transport a plethora of people in one trip rather than many vehicles being used, which is bound to result in higher emissions due to the wider usage of vehicles that emit great amounts of greenhouse gases.

Photovoltaics are a phenomenon that could revolutionize sustainable transport methods. The Photovoltaic Effect transforms solar cells into electricity which can then power vehicles. Effectively, sunlight can turn into a power source for vehicles, which would be of great importance in sustainable transport, reducing the need for the combustion of greenhouse gases to power vehicles.

DEFINITION OF KEY TERMS

Transportation systems:

The equipment and logistics of transporting goods and passengers, covering all forms of transport. The vehicle and method with which one gets from one place to the other.

Fossil Fuels

Sources of energy made from geologic processes acting on the remains of dead living organisms in the geological past. Found in the earth's crust and have high contents of hydrogen and carbon, both of which can be burned for energy. Include coal, natural gas, petroleum, oil shales, tar sands and heavy oils.

Photovoltaics

The sector of technology dealing with the production of electric current at the combining of two substances. In transportation, solar cells are converted into electricity which allows for the powering of solar-powered vehicles, known as the Photovoltaic Effect.

Sustainable Transport

A system that allows the basic needs in terms of access and development to be met safely in a way consistent with human as well as ecosystem health. It should promote equity within as well as between successive generations. Additionally, it should be affordable and operate fairly and efficiently, offering a choice regarding wanted transport mode. Lastly, sustainable transport limits waste and emissions confined to the earth's ability to absorb them, while minimising the impact on the use of land and the generation of noise during their usage.

Global Warming

The gradual increase in the earth's atmosphere's overall temperature due to the greenhouse effect, which results in large-scale changes in weather patterns.

Multimodal Transport

Transport processes that require more than one branch of transport to be used.

Greenhouse Gases

Gases that trap heat in the atmosphere, including Carbon Dioxide, Methane, Nitrous Oxide and Fluorinated Gases. These fuel climate change as they trap heat which increases the earth's temperature.

Zero-Emission Vehicles

A vehicle that never releases exhaust gas from its onboard source of power.

Rideshare

The sharing of a motor vehicle upon transport with other people, mostly commuters.

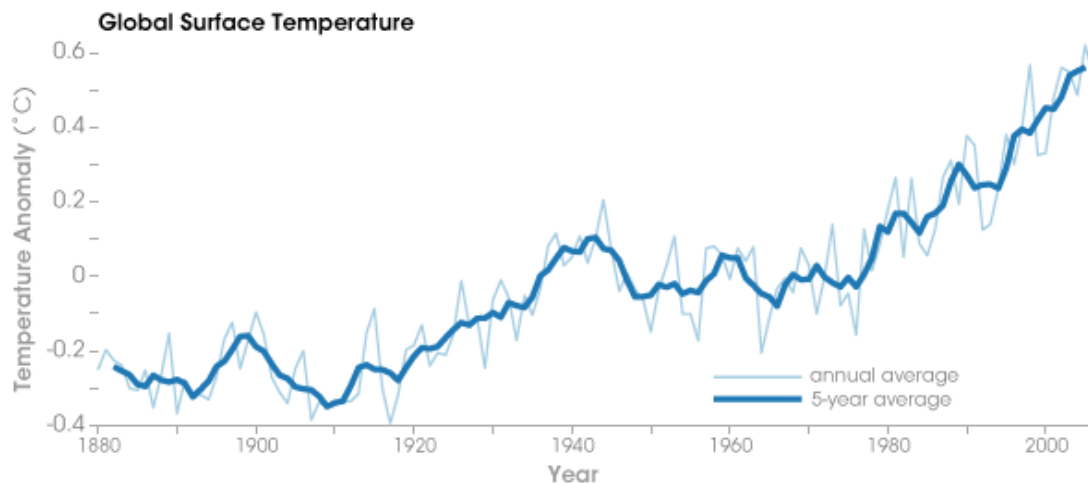
Incentivize

To encourage someone to do something by giving them something motivating them to do so.

BACKGROUND INFORMATION

Fossil Fuels

Fossil fuels continue to be the most widely used energy source for powering vehicles used in transport globally. For example, in the USA in 2019, petroleum accounted for 91% of energy use within the transportation sector. However, fossil fuels pose numerous problems in terms of environmental sustainability. When burned to release the energy they contain to be available to be used, they release vast amounts of Carbon Dioxide into the atmosphere. This, amongst other gases released such as methane, trap heat in the atmosphere meaning that it cannot escape and remains on the earth, thus exposing the planet to increasing amounts of heat that as a result lead to the earth's temperature increasing.



Graph showing the mean surface temperature from 1880 up to the 2000s. As is evident, the temperature anomaly, the difference between a temperature and the baseline temperature has been increasing; the planet is getting hotter. Since 1980, surface temperatures have increased sharply.

Given the aforementioned detrimental impact of fossil fuels on the environment, why do they remain so widely used, a prominent energy source in society?

Remains of plants and animals were compressed and heated into dense carbon deposits, practically being reservoirs of condensed energy. Fossil Fuels have very high energy density. The preference of fossil fuels due to their high energy density can be seen all the way back to when Europe chose to have coal as a main fuel source over wood.

Another reason is that they are high in convenience of preparation and energy extraction. Unlike for example Solar Power, which can be hindered by uncooperative weather and nighttime, fossil fuels can be used anywhere, anytime for energy creation as long as the proper infrastructure is present. Time, weather, and geographical location do not affect the availability of energy from fossil fuels like they do for energy from other sources.

Lastly, fossil fuels have been the primary source of energy for the last two centuries. Right now, most aspects of everyday life needing electricity are set up for the use of fossil fuels to power them. Switching to another energy source would include rethinking the way we live with appliances, etc. and our understanding of energy, which many governments and individuals are hesitant about. As fossil fuels have powered our world for nearly 300 years, there is proper infrastructure in place to distribute it at a low cost. Lastly, fossil fuels are very high in abundance despite being non-renewable energy sources; in the eyes of governments and businesses and much of the general population, there is no pressing need to find an alternative from a cheap, abundant and reliable energy source.

Developments in Sustainable Transport

Despite modern society still greatly relying on fossil fuels, with 84% of energy in 2019 coming from fossil fuels, the transportation sector has seen some progress being made towards it being of greater sustainability, for example in terms of public transport. This can be seen through the introduction of buses and trains running on biogas or electricity, which have already been implemented into many countries' public transport networks as will be further elaborated upon later with examples of such. In terms of privatized transport, cars operating on electricity are becoming increasingly common and alternative, more sustainable fuels to petroleum are becoming integrated into many countries' markets, including biofuels and hydrogen.

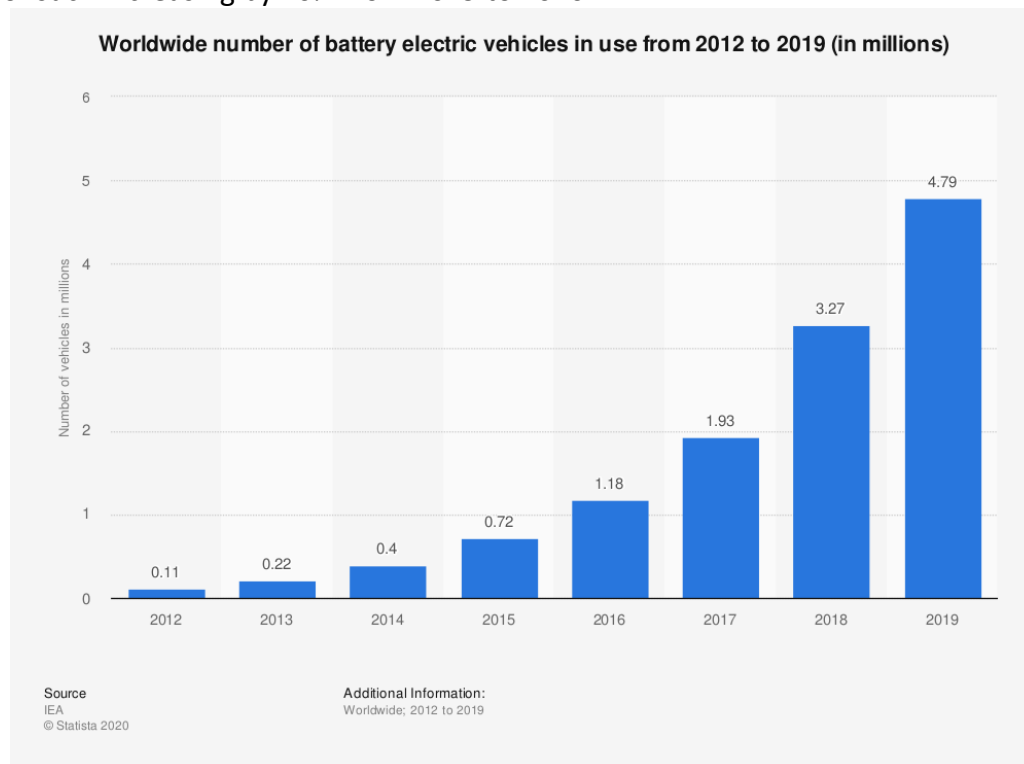
Sustainable transport can also be worked towards by simply opting for non-motorized transport options, such as going somewhere by cycling or walking when feasible. This can help the environment as greenhouse gases that trap heat would not be emitted with such travels, thus there would be a small reduction of greenhouse gas emissions, which would make a great difference collectively if many people chose non-motorized methods of transport when possible. However, many do not engage in such methods of transport due to public perception and status, with many perceiving such methods to be for the working class, ostensibly for those that cannot afford motorized transport, rather than focusing on the environmental reasons behind this. Additionally, some trips are just too great in distance and the factor of fatigue offsets many from using non-motorized methods of transport which instead take from their own energy.

The issue of Traffic Congestion

A commonly overlooked factor contributing to greenhouse gas emissions within transportation is traffic congestion. Traffic congestion not only releases greenhouse gases as vehicles are running on fuel on roads for longer, but also increases fuel demand as more is consumed, which in consequence raises the need for the combustion of fossil fuels to power vehicles. An example would be Lagos in Nigeria, where in 2019, 1560 hours annually were spent in traffic, with these hours being times of massive, redundant greenhouse gas emissions as vehicles are even stationary or barely moving in traffic jams. For this reason, traffic congestion is an issue that ought to be taken into consideration when thinking of ways in which transport can be of greater environmental sustainability.

Alternatively-fueled Vehicles

Worth mentioning is the existence of the alternative to gasoline-powered vehicles. Electric vehicles have become of greater use in recent years, with purchases of such increasing by 40% from 2019 to 2020.



Graph showing the number of battery-powered electric vehicles from 2012 to 2019. As shown, the number of electric vehicles have been steadily increasing since 2012.

Electric vehicles, which work running on rechargeable batteries that are charged at designated charging ports in public places or even at home, offer many benefits. Electric vehicles have no exhaust system, meaning they do not have emissions in their use. However, there are emissions coming from their production and from the production of electricity that powers them, although even with these taken into consideration, electric vehicles continue to be better for the environment compared to a gasoline-powered or diesel vehicle. Additionally, they are cheaper in that their maintenance is less frequent and costly, given that they do not need to undergo things such as oil changes or repairs to combustion engines. Studies have

even proven that the brakes on electric vehicles wear out much slower than in gasoline or diesel vehicles.

Nevertheless, very high charging times, with those even reaching 20 hours in some models, make electric vehicles less convenient in their use than other vehicles which can be refueled quickly at a gas station. Additionally, the availability of charging stations is very limited in some areas and overall inconsistent, making the use of electric cars much more difficult. Greece, for example, only had approximately 115 charging stations for the public, of which only 10 had fast chargers, while at least 3000 charging points are to be required. Thus, many countries lack the infrastructure to make electric vehicles' use feasible, also proven by the fact that in 2019, of Greece's newly-registered vehicles, only less than 1% of the vehicles were electric vehicles.

Another alternative are vehicles that run on LPG. These offer the benefit of being much more environmentally sustainable, reducing emissions by 20% and having very little particulate emissions. Additionally, LPG vehicles prolong the life of vehicle engines, given that LPG vehicles mean 50% of power comes from petrol and the other half from LPG fuel. The reduction of petrol entering the engine means that engines are less subject to becoming worn out, preserving high fuel efficiency. However, the difficulty LPG installation results in in terms of vehicle insurance puts off many people from going ahead with it, suggesting policy changing could increase their use and thus pave the path for future reductions in greenhouse gases and particulate emissions.

Policy Setting

The importance of policy in achieving sustainable transportation methods can be seen within the improvements the European Union has seen in greenhouse gas emissions with the introduction of European Emission Standards, first in 1992, which state the acceptable limits of exhaust emissions within Europe. Additionally, the establishment of Low Emissions Zones within cities and towns forbid vehicles from entering if not meeting the certain emission standard; within defined low emission zones, vehicles with Euro 4 and later standard emissions can enter. The introduction of a new regulation regarding emissions, Regulation (EU) 2019/631 is expected to lead to a 23% reduction in the emissions of greenhouse gases from road transport in 2030 in comparison with levels in 2005.

MAJOR COUNTRIES AND ORGANISATIONS INVOLVED

France

France has set a goal that by 2025, all of the buses comprising its public transport network will operate on biogas and electrical energy. Another goal regarding sustainable transport is that it aims to have 2 million electric cars by 2022. The Vélib' Métropole system is an extensive system of bicycles in France, of which a third are electric. These can be picked up from Vélib' stations across France and returned in any other one, with the first half hour being free of charge for mechanical bikes and only a small fee existing for electric bikes; the app makes this even easier in terms of finding nearby stations, etc. Additionally, France has introduced the Sustainable Mobility Allowance which allows employers to pay employees up to 400 euros a year if carpooling, walking, or cycling to come to work. However, France's sustainability in

terms of transport is overshadowed by the fact that $\frac{3}{4}$ of France's energy comes from nuclear power.

Norway

Norway has incentivized the purchase of electric cars within its citizens by adopting a series of measures including No Purchase or Import Taxes, exemption from 25% on VAT upon purchasing an electric vehicle, and no annual road tax to be paid. The success of such measures is evident by the fact that 54% of cars in Norway were battery powered in 2020.

United Kingdom

The United Kingdom showed further progress towards the strive for sustainable transportation by investing into infrastructure for "Active Transport" as well as in local buses' infrastructure. The purchase of 4000 buses with zero carbon emissions were part of this investment. Also important is the target it has set regarding vehicles, this being that by 2050, all its vehicles will have zero emissions.

Denmark

Denmark is a great example of a nation with great sustainable transport. Copenhagen is known as the "Bike City", with 49% of all trips to school and work happening by bike and bicycle lanes extending over 350km across the city. The development of the Integrative Public Transport Model has the aim of mitigating traffic congestion in Copenhagen, by encouraging the use of public transport. Ticketing is made easier by SMS or a smartphone application, which provides vital information about routes, schedules, and provides greater flexibility and efficiency when boarding and transferring to a different mode of public transport. This encourages a reduction in car use and thus a reduction in greenhouse gas emissions.

China

China has played an integral role in the sector of sustainable public transportation, a main part of this contribution being the introduction of Electromobility and New Energy Vehicles. To promote their further use, the government has introduced subsidies for the purchase as well as operation of New Energy Buses, and tax cuts for decommissioning buses with older engines that aren't of great environmental sustainability. By the start of 2020, over 400,000 New Energy buses were being used across China, forming 55% of the bus market compared to just 1% in 2013. Despite it being estimated that over 1 million fuel cell vehicles running on electricity will be operating in China by the next decade, a mass adoption of electric buses operating on fuel cells isn't seen as very feasible, due to the inadequacy in technology levels and infrastructure for the refueling of hydrogen; the high cost of such operations is also a prohibitive factor.

United States of America (USA)

The United States of America play an integral role in the matter of sustainable transport. In 2019, 91% of energy sources for transportation in the USA came from petroleum products, with biofuels accounting for a mere 5% and natural gas for approximately 3%. In 2018, 28.2% of greenhouse gas emissions were a result of transportation. Additionally, the USA formally left the Paris Peace Agreement on the 4th November 2020, a UN agreement regarding the mitigation, adaptation and financing of greenhouse gas emissions.

Spain

Spain developed the Madrid Central Plan, a plan set to tackle the problem of greenhouse gas emissions and traffic congestion. It established a low-emissions zone in Madrid’s historical centre covering 472 hectares, an area which petrol vehicles registered before 2000 and diesel vehicles registered before 2006 cannot enter. This plan has proven to be of great effectiveness, with the zone having seen a 32% reduction in Nitrogen Dioxide emissions since its introduction.

SPIE

SPIE has worked in European countries including France, Germany and Switzerland. This organization devises plans for ameliorating transport safety and flow, while reducing its environmental impact. It has been of instrumental contribution to the establishment of bicycle systems to be used by the general public in major cities like Lyon, and provides electric vehicle charging infrastructure in such cities as well.

Nordea

Nordea has developed a guideline regarding the usage of fossil fuels within the Nordic countries, to limit their use of fossil fuels to an aforementioned level. It additionally aims to diversify countries and businesses away from coal by not investing in companies of which more than 30% of their profits come from the sale of coal. It does not finance projects regarding the extraction of unconventional oil or gas.

Volvo

Volvo has set a target for its vehicles to be 100% fossil fuel free by 2040. It focuses on the electrification of its vehicles as well as using biofuels that are sustainable and hydrogen to power its vehicles. It has released many electric car models that are widely used globally, with them having an expectation of 50% of their car models sold to be fully electric by 2025.

TIMELINE OF EVENTS

Date	Description of event
June 1992	The UN ‘Earth Summit’ released the United Nations Framework Convention on Climate Change, discussing ways to tackle the problem of climate change.
June 1997	General Assembly 19th Special Session on the Implementation of Agenda 21, Sustainable transport.
December 1997	The Kyoto Protocol is adopted.
2007	The Fourth Assessment Report was published, which highlighted the need for and ways of preparation for another agreement to succeed the Kyoto Agreement.
2008	First Commitment Period for Kyoto Protocol begins.
2012	First Commitment Period for Kyoto Protocol ends.
2013	Second Commitment Period for Kyoto Protocol begins.
August 2014	Sustainable Goals’ High-Level Advisory Group on Sustainable Transport confers.
April 2016	Paris Agreement is signed.

November 2016	Global Sustainable Transport Conference held in Turkmenistan.
September 2019	Climate Action Summit held, the goal of which was to take more action to reduce greenhouse gas emissions and prevent the global temperature from increasing by over 1.5°C above pre-industrial levels.
December 2019	First commercial flight with an electricity-powered airplane takes off in Vancouver, an unprecedented step in the aviation industry towards sustainable flights in the future
April 2020	2nd Global Conference on Strengthening Synergies between the Paris Agreement and the 2030 Agenda held in Geneva.
November 2020	USA formally withdraws from Paris Agreement.
2020	Second Commitment Period for Kyoto Protocol Ends. In this period, European Union members, Iceland and Australia pledged to make further reductions in their emissions, so to reach a 20% reduction compared to levels in 1990.
2021	International Transport Forum Summit, Transport Innovation for Sustainable Development.

RELEVANT RESOLUTIONS, TREATIES AND EVENTS

Paris Agreement

“The Paris Climate Change Agreement has opened the door to a world where sustainable, low-carbon growth is our singular objective for the rest of this century”, says Christiana Figueres, Executive Secretary UNFCCC. “Every sector of society and economy, including clean transport where some of the most rapid gains can be made, now needs to review their strategies, policies, investments and infrastructure to move them towards the goal of a much safer 1.5 degree Celsius trajectory”. The Paris Agreement was adopted by 196 countries in December 2015. It has the goal of confining global warming to under 2, ideally 1.5 degrees Celsius compared to levels of pre-industrial times. It represents an unprecedented agreement binding all nations with a common goal this being the combatting of global warming and the achievement of sustainability.

Global Sustainable Transport Conference of 2016, Turkmenistan

The Global Conference included representatives from the UN, governments of member states, and similar international organizations. It addressed every mode of transport, whether rail, road, waterborne, air and emphasized attention to the concerns of developing countries, particularly those of Africa. In the “Ashgabat Statement on Commitments and Policy Recommendations”, participants reiterated the commitment to intensifying the role of sustainable transport in connecting people and communities to education, healthcare and work in both urban and rural landscapes, providing equality in sustainable transport infrastructure.

European Green Deal

The European Green Deal aims to make the economy of Europe a sustainable one. It mentions integral measures to be taken as part of this deal, with many addressing the issue of sustainable transport. The Deal calls for the decarbonization of the energy industry, investment in technologies that aren't harmful to the environment, and introducing more environmentally-friendly, healthy and less costly

mediums of public and private transport. The EU members, as part of this deal, signed a commitment to be climate-neutral by 2050.

A/RES/70/1 Transforming our world: The 2030 Agenda for sustainable development, 25th September 2015

This resolution mentions the need for sustainable transport systems in ensuring sustainable development. In Goal 11 of the resolution, the need for sustainable transport systems is mentioned, with it being said it will contribute to making cities sustainable. The expansion of public transport is mentioned as the main way through which the resolution aims to achieve this.

United Nations Frameworks Convention on Climate Change (UNFCCC)

The UNFCCC has the goal of preventing human actions from harming the climate, which of course entails the emission of greenhouse gases which transportation is a great contributor to. A lot of steps have been taken to promote sustainable transport under the convention, such as the strengthening and support of the International Association of Public Transport Declaration on Climate Leadership, which has the objective of doubling the market share of the public transport sector globally by 2025, an objective made possible by the UNFCCC, which undertook 110 public transport entities to its summit. The UNFCCC also adopted and introduced the Kyoto Protocol, which began in 1997.

A/RES/72/212 Strengthening the link between all modes of transport to achieve the Sustainable Development Goals, 29th January 2018

Emphasizes the importance of sustainable modes of transport with low carbon and efficient energy usage to ameliorate the present situation regarding climate change. The resolution also mentions the need for multi-stakeholder partnerships so for the aforementioned sustainable modes of transport to be created.

PREVIOUS ATTEMPTS TO SOLVE THE ISSUE

Estonia's actions in public transport

In 2018, Estonia made public transport free of charge. The impact of this is evident after it was reported that a year and a half after this was implemented, passenger rides with public transport increased by 15%, and an additional 2 million rides were taken on its public transport fleet of buses, trams and trolleys between 2018 and 2019.

Establishment of the Sustainable Transport Africa (STA) organization

Sustainable Transport Africa (STA) is an organization registered in Kenya which aims to make transport more sustainable across Africa. Its objectives include the promotion of methods through which people can switch from using their private vehicles to cleaner public transport means, to encourage the usage of non-motorized methods of transportation and to allow for the introduction of sustainable technologies that'll reduce emissions from public transport fleets of African countries. Additionally, it aims to exploit the elimination of lead and the decrease of Sulphur levels in fuels so to achieve the use of technologies including catalytic converters and particulate filters, which would reduce GHG emissions, with this being ensured by the

introduction of new standards regarding vehicle emissions and tail-pipe emissions testing.

The European Commission's development of the Fuel Quality Directive

The Fuel Quality Directive, introduced in April 2009, demands a depletion of greenhouse gas intensity of fuels used for transport by at least 6% by 2020. It demanded a mandatory reduction of Sulphur levels in fuels, with levels then being below 10 ppm as a result. Additionally, the directive called for an increase in the use of biofuels, with those having to have 60% lower emissions than their alternative fossil fuels, and a reduction in upstream emissions, examples of such being flaring.

Nordea limiting the fossil fuel industry within Nordic countries

Nordea introduced a guideline for Nordic countries, with the aim of this being to limit these countries' fossil fuel usage as an energy source. The effectiveness of this guideline is evident from the fact that Nordic countries rank amongst the cleanest countries in terms of air pollution in the world, indicating greenhouse gas emissions from the burning of fossil fuels are of small amount.

The Lagos Metropolitan Transport Area Authority's development of a Non-Motorized Transport Policy

This policy, developed in collaboration with UN Environment, states interventions to improve the walking and cycling environment in Lagos, Nigeria's most populous and industrialized city, with Nigeria also being Africa's most populous and industrialized nation. It aims to pave the path for sustainable transport within the city by "investing in NMT and public transport modes that consume fewer resources per person-trip compared to personal motor vehicles (PMV)". Additionally, it aims to lessen the international and local environmental impact of Lagos' systems of transport through expanding the usage of non-motorized modes of transport and motorized modes of transport with low emissions so to improve air quality.

POSSIBLE SOLUTIONS

A plethora of measures can be taken to promote the adoption of sustainable methods of transportation.

Encouraging the use of Public Transport

It is very important that public transportation is made more appealing to the general public, for example through investment so to make it more friendly to users for their rides and well-maintained, or by investing into expanding public transportation fleets for more frequent schedules and thus making it more usable for going to work, school or other places. Also of great contribution would for example be lowering ticket fees or making public transportation free, as is already the case in Estonia and Luxembourg. Extending the coverage of public transport networks would also make them more accessible and thus increase ridership.

Incentivizing alternatively-fueled vehicles

The incentivization of alternatively-fueled vehicles would also be of great importance, as has been the case in Norway, encouraging more people to buy vehicles running on alternative, more sustainable forms of fuel due to the economic benefit such a purchase would give them. Policy setting should reinforce or strengthen requirements regarding limits on greenhouse gas emissions from vehicles, disallowing

ones whose emissions are beyond a designated threshold and thus harming the environment beyond repair.

Regarding alternatively-fueled vehicles, vehicles operating on cellulosic biofuels are ones with great potential regarding sustainable transportation, but progress in their assimilation into the global market has been very slow and of small scale; the promotion, incentivization and greater distribution of such vehicles would introduce a new medium of sustainable transport and make gasoline-powered vehicles less and less of a first choice in the global market.

Improvements in non-motorized transport

Additionally, non-motorized transport must be improved so to encourage citizens to choose such over motorized transport. A way to do so would be by adding more cycling and pedestrian lanes, given that many people do not use cycling or walking often as a method of transport due to the safety concerns such have, or the inadequacy of infrastructure, making trips cumbersome. Adding more cycling and pedestrian lanes and maintaining pre-existing ones would encourage more citizens to cycle or walk to work or school, or to any other place with a rational distance to be covered. Policy setting can also set and reinforce a clear standard regarding how member states should improve and promote the use of non-motorized transport methods.

Raising Awareness

The educating and sensitization of the public is important. It must be properly informed of the severity and extent of the issue, and how its solution isn't a pipe dream, that something as simple as choosing to cycle somewhere instead of riding in one's car can make a difference collectively. Such knowledge would be bound to make citizens think twice before using a car when going somewhere they could also go on foot, with a bike or using public transport.

The issue of Traffic Congestion

Traffic congestion is also a pressing issue, and can be dealt with through policy setting as has been done in Madrid with the Madrid Central Plan, or in Athens with the existence of a system where vehicles can enter the city centre on certain days, according to whether the last digit on their number plate is an odd or even number. Less traffic congestion will mean there'll be less redundant operating of vehicles, and thus less greenhouse gas emissions which in the long term, will be of undeniable importance to the race for sustainable transport and the hindering of climate change.

BIBLIOGRAPHY

"Worldwide number of electric cars | Statista." 25 Jun. 2020, <https://www.statista.com/statistics/270603/worldwide-number-of-hybrid-and-electric-vehicles-since-2009/>. Accessed 16 Jan. 2021.

"3 Reasons We Are Still Using Fossil Fuels - UARK WordPress." <https://wordpressua.uark.edu/sustain/3-reasons-we-are-still-using-fossil-fuels/>.

Accessed 16 Jan. 2021

"4000 zero-emission buses plan to start delivery in ... - Route One." 19 Nov. 2020, <https://www.route-one.net/environment/4000-zero-emission-buses-plan-to-start-delivery-in-2021/>. Accessed 16 Jan. 2021.

"Air quality in Spain: Madrid Central considered one of the" 12 Sep. 2019, https://english.elpais.com/elpais/2019/09/11/inenglish/1568214176_656688.html. Accessed 17 Jan. 2021.

"Benefits of electric cars on the environment - EDF Energy." 15 Feb. 2020, <https://www.edfenergy.com/for-home/energywise/electric-cars-and-environment>. Accessed 16 Jan. 2021.

"Changes since the Industrial Revolution - American Chemical" <https://www.acs.org/content/acs/en/climatescience/greenhousegases/industrialrevolution.html>. Accessed 18 Jan. 2021.

"Earth's Temperature Tracker - NASA Earth Observatory." 5 Nov. 2007, https://earthobservatory.nasa.gov/features/GISSTemperature/gisst_temperature2.php. Accessed 16 Jan. 2021

"Electrification | Volvo Car Group - About Volvo Cars." <https://group.volvocars.com/company/innovation/electrification>. Accessed 17 Jan. 2021.

"European Green Deal - European" https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en. Accessed 18 Jan. 2021.

"fossil fuel | Meaning, Types, & Uses" <https://www.britannica.com/science/fossil-fuel>. Accessed 16 Jan. 2021.

"Fossil Fuels | National Geographic Society." 31 May. 2019, <https://www.nationalgeographic.org/encyclopedia/fossil-fuels/>. Accessed 16 Jan.

"Fossil Fuels Still Supply 84 Percent Of World Energy ... - Forbes." 20 Jun. 2020, <https://www.forbes.com/sites/rpapier/2020/06/20/bp-review-new-highs-in-global-energy-consumption-and-carbon-emissions-in-2019/>. Accessed 16 Jan. 2021.

"Global EV Outlook 2020 - IEA." <https://www.iea.org/reports/global-ev-outlook-2020>. Accessed 16 Jan. 2021

"Global Sustainable Transport Conference ... Sustainable" <https://sustainabledevelopment.un.org/Global-Sustainable-Transport-Conference-2016>. Accessed 18 Jan. 2021.

"Global warming - Oxford Reference." <https://www.oxfordreference.com/viewbydoi/10.1093/oi/authority.20110803095855385>. Accessed 16 Jan. 2021.

"Is free public transport everything it is cracked up to be" 10 Mar. 2020, <https://www.euronews.com/2020/03/10/is-free-public-transport-everything-it-is-cracked-up-to-be>. Accessed 18 Jan. 2021.

"Kyoto 2nd commitment period (2013–20) - European" https://ec.europa.eu/clima/policies/strategies/progress/kyoto_2_en. Accessed 18 Jan. 2021.

"Kyoto Protocol - Wikipedia." https://en.wikipedia.org/wiki/Kyoto_Protocol. Accessed 18 Jan. 2021.

"Lagos commuters lose 75% of weekly working hours to traffic" 11 Dec. 2018, <https://businessday.ng/uncategorized/article/lagos-commuters-lose-75-of-weekly-working-hours-to-traffic/>. Accessed 16 Jan. 2021.

"Lagos Non-Motorised Transport Policy - UN Environment" https://wedocs.unep.org/bitstream/handle/20.500.11822/25415/Lagos_NMTPolicy.pdf?sequence=3. Accessed 18 Jan. 2021.

"Macron stresses importance of nuclear energy for France" 9 Dec. 2020, <https://www.world-nuclear-news.org/Articles/Macron-stresses-importance-of-nuclear-energy-for-F>. Accessed 16 Jan. 2021.

"Mobility orientation law on... - France - Climate Change Laws" <https://climate-laws.org/geographies/france/laws/mobility-orientation-law-on-transport-lom>. Accessed 16 Jan. 2021.

"Multimodal transport - Information about multimodal ... - ShipHub." <https://www.shiphub.co/multimodal-transport/>. Accessed 16 Jan. 2021.

"New Energy Buses in China: Overview on Policies and Impacts" 28 Apr. 2020, <https://www.sustainabletransport.org/archives/7772>. Accessed 10 Feb. 2021.

"Nordea sector guideline for the fossil fuels industry." 14 Sep. 2020, <https://www.nordea.com/Images/33-325845/nordea-sector-guidline-for-the-fossil-fuels-industry.pdf>. Accessed 17 Jan. 2021.

"Norwegian EV policy | Norsk elbilforening." <https://elbil.no/english/norwegian-ev-policy/>. Accessed 16 Jan. 2021.

"Overview of Greenhouse Gases" 8 Sep. 2020, <https://www.epa.gov/ghgemissions/overview-greenhouse-gases>. Accessed 16 Jan. 2021.

"Paris Agreement on Climate Change, a Strong Call to Action" <http://www.ppmc-transport.org/paris-agreement-on-climate-change-a-strong-call-to-action-for-the-transport-sector/>. Accessed 18 Jan. 2021.

"Photovoltaics - Wikipedia." <https://en.wikipedia.org/wiki/Photovoltaics>. Accessed 16 Jan. 2021.

"Photovoltaics | Definition of Photovoltaics by Oxford ... - Lexico." <https://www.lexico.com/definition/photovoltaics>. Accessed 16 Jan. 2021

"Strengthening the links between all modes of transport to" <https://digitallibrary.un.org/record/1317936>. Accessed 18 Jan. 2021.

"Sustainability | Volvo Car Group - About" <https://group.volvocars.com/sustainability>. Accessed 17 Jan. 2021.

"Sustainable mobility | SPIE." <https://www.spie.com/en/sustainable-mobility>. Accessed 17 Jan. 2021.

"Sustainable Transport Africa (STA) - SLOCAT." <https://slocat.net/1254-2/>. Accessed 18 Jan. 2021.

"Sustainable Transport System - ELTIS.org." <https://www.eltis.org/glossary/sustainable-transport-system>. Accessed 16 Jan. 2021.

"the 2030 Agenda for Sustainable Development - the United" 21 Oct. 2015, https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_70_1_E.pdf. Accessed 18 Jan. 2021.

"The Advantages & Disadvantages of Fossil Fuels." 30 Jun. 2020, <https://www.inspirecleanenergy.com/blog/clean-energy-101/advantages-disadvantages-fossil-fuels>. Accessed 16 Jan. 2021.

"The Biggest Pros and Cons of Electric Vehicles | Earth 911." 30 Dec. 2020, <https://earth911.com/eco-tech/pros-cons-electric-vehicles/>. Accessed 16 Jan. 2021.

"The future of E-charging infrastructure in the European Union" 25 Mar. 2020, <https://www.wfw.com/articles/the-future-of-e-charging-infrastructure-in-the-european-union-and-united-kingdom/>. Accessed 16 Jan. 2021.

"The future of E-charging infrastructure: Greece - WFW." <https://www.wfw.com/articles/the-future-of-e-charging-infrastructure-greece/>. Accessed 16 Jan. 2021.

"The Paris Agreement | UNFCCC." <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>. Accessed 18 Jan. 2021.

"The Vélib' service - Vélib' Métropole." <https://www.velib-metropole.fr/en/service>. Accessed 16 Jan. 2021.

"UN Climate Summit: Transportation | UNFCCC." 24 Sep. 2014, <https://unfccc.int/news/un-climate-summit-transportation>. Accessed 18 Jan. 2021.

"Use of energy explained Energy use for transportation - EIA." 2 Jun. 2020, <https://www.eia.gov/energyexplained/use-of-energy/transportation.php>. Accessed 16 Jan. 2021.

"Use of energy explained Energy use for transportation - EIA." 2 Jun. 2020, <https://www.eia.gov/energyexplained/use-of-energy/transportation.php>. Accessed 17 Jan. 2021.

"What Is the Meaning of Transportation System? - Getaway Tips." <https://getawaytips.azcentral.com/what-is-the-meaning-of-transportation-system-12347036.html>. Accessed 16 Jan. 2021.

"What makes Copenhagen the world's most bicycle friendly city" <https://www.visitcopenhagen.com/copenhagen/activities/what-makes-copenhagen-worlds-most-bicycle-friendly-city>. Accessed 17 Jan. 2021.

"'World's first' fully-electric commercial flight takes off - BBC News." 11 Dec. 2019, <https://www.bbc.com/news/business-50738983>. Accessed 18 Jan. 2021.

"Zero-emissions vehicle - Wikipedia." https://en.wikipedia.org/wiki/Zero-emissions_vehicle. Accessed 16 Jan. 2021.