

CHAPTER I

INTRODUCTION

Cars and other light-duty vehicles make up a sizable percentage of the transportation sector's enormous contribution to greenhouse gas emissions. Pressure on governments throughout the world to take action to cut emissions from cars and other kinds of transportation has increased as concerns about climate change have intensified in recent years. Yet, due to the global character of the car industry and the intricate web of economic and political interests involved, significant international collaboration and diplomacy are required in order to make headway on this issue.

1.1 Background

One of the biggest car maker in automotive industry is Volkswagen or as known as VW, which is a German vehicle manufacturer with interesting history. Founded in 1937 by the German Labor Front under the Nazi Party which produces military vehicles then revitalized into a global brand after the World War-II by the British Army Officer Ivan Hirst to produce civilian vehicles. VW experienced significant growth and success driven by the popularity of Beetle which became their flagship in the 1950s and 1960s, due to its unique design, cheap price and reliability. In the 1970s, VW expanded their product range with small compact like Polo, the hatchback Scirocco, and the ever-so-popular Golf which introduced in 1974 which became a huge success and remains one of VW best-selling models to this day. During the 80's and 90's, VW acquired several automotive brands which includes Audi, Bentley Bugatti, Ducati, Lamborghini, Porsche, SEAT, Skoda, and Volkswagen Commercial Vehicles, they did this in order to diversify their product offering from small compact car to sport cars and trucks to strengthen their position in the global automotive market.

However, not every strategy is the perfect strategy. In the early 2000s VW faced difficulties, such as financial and quality issues, which they resolved it under the new leadership which used a turnaround strategy and focused on efficiency while improving their product quality. Although they were trying to improve their quality in producing cars, In the year 2015, VW faced a massive scandal when the company is revealed by the US environmental Protection Agency that they had installed software in their diesel vehicles to cheat emissions test. This event is known as “Diesel-gate” scandal and it led to significant financial penalties, damaged company reputation and damaged environment. According to the article *Learn About Volkswagen Violations (2023)* Vehicles under Volkswagen AG, Audi AG, Dr. Ing. h.c. F. Porsche AG, Volkswagen Group of America, Inc., Volkswagen Group of America Chattanooga Operations, LLC, and Porsche Cars North America, Inc. such as Volkswagen, Audi, and Porsche implemented software in specific diesel-powered vehicles with the purpose of

identifying when the vehicle is undergoing emissions testing which is called “defeat-devices”. During these tests, the software activates full emissions controls. However, in regular driving conditions, the efficiency of emissions control devices is diminished. As a consequence, the cars comply with emissions standards in controlled laboratory or testing environments, but in typical operation, they release nitrogen oxides at levels exceeding the standard by up to 40 times. This practice explicitly forbidden by the Clean Air Act (EPA Gov, 2023).

There are laws that is breached by the VW group regarding the distribution of the vehicles tampered with “Defeat-devices”, which are the **NOx or Nitrogen Oxide regulation** and country regulations, such as **Euro standard**. According to the article titled *Nitrogen Oxide (NOx) Control Regulation*, the purpose of this regulation is to control and reduce the release of NOx from vehicles which uses diesel engines in both land and sea, since they are a significant contributor to air pollutions. NOx is considered a group of toxic and reactive gases that is generated during the combustion at high-temperatures which can be emitted by range of sources, including automobiles, trucks, and non-road vehicles such as construction equipment and boats. Power plants, boilers, cement kins and turbines also contributed to these emissions. The NOx gas commonly forms a brownish gas which is potent oxidizing agent that significantly influence atmospheric reactions with volatile organic compound (VOC) that contribute to the formation of smog on warm summer days (EPA gov, 2024). Euro standard is introduced in 1992 as legislation on exhaust emissions which applies their first standard which is Euro 1 on 1992 and all new cars that are registered in 1993, since then, further sets of standards until Euro 6 have followed with ongoing aim of improving air quality across the European Union. The article from *Learn About Volkswagen Violations (2023)* shows that diesel vehicle models under VW group model ranging from Volkswagen, Audi and Porsche from year 2009 through 2015 had breached both Euro 5 and Euro 6 Standards (EPA Gov, 2023).

The scandal does not stop there, since there are 11 million vehicles that are tampered with the defeat devices, this scandal became a worldwide issue. Volkswagen reached a multi-billion-dollar settlement to address accusations of violating the Clean Air Act. These allegations stemmed from the sale of 2.0-liter diesel engines fitted with software, dubbed "defeat devices," intended to deceive federal emissions tests. The settlement was officially finalized and implemented on October 25, 2016. The researcher also found a press release titled *High Court Denies Volkswagen leave to Appeal \$125 million Penalty (2021)*, that stated The High Court of Australia had rejected Volkswagen AG's request for special leave to appeal the \$125 million penalty imposed by the Federal Court in December 2019. This penalty was imposed due to Volkswagen making false representations regarding compliance

with Australia's diesel emissions standards., The study remarked that Volkswagen deceived both consumers and regulatory bodies regarding the compliance of their diesel vehicles with environmental standards. This deception deprived consumers, including those specifically seeking low-emission vehicles, of the opportunity to make well-informed purchasing decisions. He emphasized the severity of the situation, highlighting that had Volkswagen disclosed the truth, the vehicles would not have met the legal requirements for sale in Australia, demonstrating a blatant disregard for the country's vehicle import regulations aimed at safeguarding consumers (ACCC, 2021).

In 2019, Volkswagen confessed to making false or deceptive representations during the importation of over 57,000 diesel vehicles into Australia from 2011 to 2015, as well as when listing these vehicles on the Australian Government's Green Vehicle Guide website. The company failed to disclose the presence of a 'two-mode' software, which allowed the vehicles to operate differently during emissions testing and regular driving. If subjected to testing in the second mode, these vehicles would have violated Australian emissions standards according to the study provided by (ACCC, 2021) regarding the distribution of the tampered vehicles. Based on the description above the author determines the title as **“The Impact of the “Diesel-gate” Scandal on Global Automotive Manufacturing Policy Dynamics”**.

1.2 Problem Formulation

According to the information and explanation given from the background, the researcher formulates a question as: **how does the Volkswagen group “Diesel-gate” impacts global emission policy and car-making regulation internationally?** This inquiry delves into the theoretical progression from the pre-scandal era to the post-implementation of new regulations.

1.3 Theoretical Framework

1.3.1 Concept of International Regime

The **International Encyclopedia of the Social & Behavioral Sciences** book that is authorized by *Neil J. Smelser and Paul B. Baltes* (2001) stated the definition of International Regime which quote “a set of implicit principles, norms, rules, and decision-making procedures around which actors expectations converge”. The concept of international regime refers to the rules and institutions that governs interactions among states and other international actors in a specific issue area of global politics (Smelser & Baltes, 2001). There are three key points that are essential in International Regime. The first key point is implicit principles and norms that to address the challenges shared by multiple countries and norms that guides them through formal treaties, laws, informal norms and

network to develop a standard behavior in global political order which in this case is sustainable development which according to the study *Sustainable Development (2024)* the practice of meeting current needs without hindering future generations and the goal is to create a society where living conditions and resources satisfy human needs while preserving the planet's integrity and with the ever increasing advancement of technology that is present it can oppose a conflict between environmental preservation and economic development due to the advancement of the technology could result in degradation of the environment and also scarcity of fuel (IISD, 2024). This can be reflected by *Paris Agreement (2015)* which is an international treaty on climate change in which its goal mentioned that to mitigate the increase of global temperature to below 2°C above the pre-industrial level and to further pursue of the global temperature limit to just 1.5°C above pre-industrial level” which was adopted by 196 parties at the COP21 in Paris, France on 12th December 2015. In order to put the case into perspective, states such as United States, France, Germany, and Australia signed the agreement to pledge in mitigating the global warming to 2°C by reducing the amount of greenhouse gas emissions, VW group as a multinational company broke the norms and treaty that has been agreed by countries in Paris Agreement due to “Diesel-gate”, increased the amount of greenhouse gas emission released into the air due to the vehicles produced more emission than what the standard allows through the breach in illegal “defeat-devices” (United Nations, Paris Agreement, 2015).

The second key point is rules and procedures which is established by international regime to include obligations, commitments, and mechanisms for monitoring and enforcement thus putting the rules set by UNEP which is Sustainable Development Goals or SDGs, it is known as a set of seventeen interrelated goals that were created to act as a "common framework for peace and prosperity for people and the planet, now and in the future". The SDGs establish standards for countries to adhere to creating norm for a country to follow. The researcher specifically chooses the goal No.12 which align with the conceptual framework of International Regime (UN, 2024). In this case, the goal No.12 discusses responsible consumption and production. According to the United Nations, important efforts to reach this aim include the effective management of shared natural resources and the manner to eradicate toxic waste and pollution. Point 12.4 which is stated from the United Nations that “By 2020, achieve environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment”. The goal is equally crucial to encourage trash reduction and recycling among enterprises, industries, and consumers, as well as assisting developing nations in shifting to more sustainable consumption patterns by 2030. This can be indicated by point 12.4.1

which stated “with the number of parties to international multilateral agreements on hazardous waste and other chemicals that meet their commitments and obligations in transmitting information as required by each relevant agreement” (UN, 2024).

Another SDGs that fit into this research is goal No.13 which discusses the urgent action needed to tackle climate change and its impact. Especially with the point 13.2 which stated “Integrate climate change measures into national policies, strategies and planning” which according to United Nations can be indicated by 13.2.1, which stated “Number of countries with nationally determined contributors, long-term strategies, national adaptation plans and adaptation communications, as reported to the secretariat of the United Nations Framework Convention on Climate Change.” and by 13.2.2 which “Total greenhouse gas emissions per year”. Thus, according to the explanation above, the goal No.12.4.1 and 13.2.2 synergizes in tackling global issues of environmental and climate change in the global political context (UN, 2024).

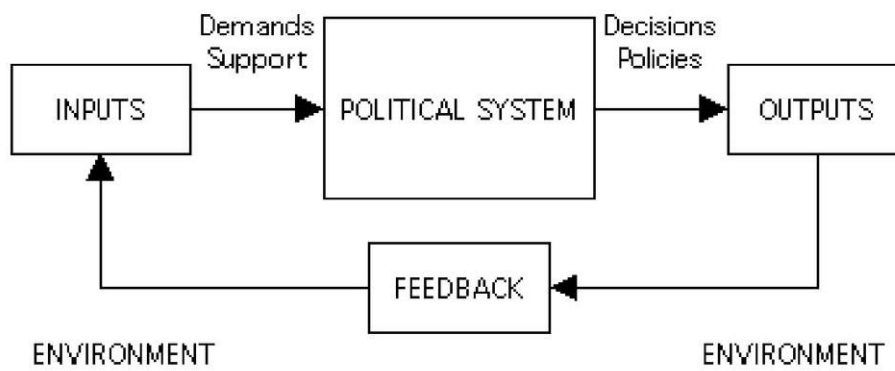
The third key point is institutions that supports cooperation and implementation of the regime’s objective which according to the case study, the institutions that play a major part in this case is UNEP or United Nation Environment Programme that took their focus in environment through setting an applicable indicators that can be followed by countries and national emissions regulatory bodies such as European Commission that created Euro standard, United States with EPA and stricter CARB standards, and Australian Design Rules or as known as ADR. These institutions plays role in supporting the regime’s objective by establishing, enforcing laws and regulations to ensure the industries and businesses will comply with the established standards and legal requirements in each states in order to protect public health and safety, promote fair competition, protect the environment and to provide consumer protection. The emission regulatory bodies such as EPA, Euro and ADR enforces law through emission standardization, in which they created one standard that manufacturer had to comply in order to legally market their vehicles in the respective countries. These standards evolve in each period in order to meet the goals of the respective countries.

1.3.2 Theory of System

In order to explain the term for Theory of System that is used in international relations, the researcher cited “**International Relations: A European Perspective**” which provides the researcher with the **System Theory** authorized by *Mario Telò* (2016), According to (Telò, 2016), in 1953, Austrian-Canadian biologist *Ludwig von Bertalanffy* and American sociologist *Talcott Parsons* which influenced the system theory, define the theory as “comprehensive descriptive framework that explores the interactions between different components and levels within a political system”. According to Telò (2016), the central idea of the theory based its analogy from biology which states “just as the heart, lungs, and blood function as a whole, so do the components of social and political

systems. When one component changes or comes under stress, the other components will adjust to compensate.” The researcher found further explanation inside the book by (Braumoeller, 2012) which states Douglass C. North's seminal discussion of the role of economic structure and historical change is admirably succinct on the question of what constitutes structure: property rights, which give rise to the rules and regulations that govern society and the enforcement structures and norms. The researcher discovered the graph by Mario Telò that illustrated the workflow of system theory in Figure.1 (Telò, 2016).

Picture 1. Diagram of Theory of System

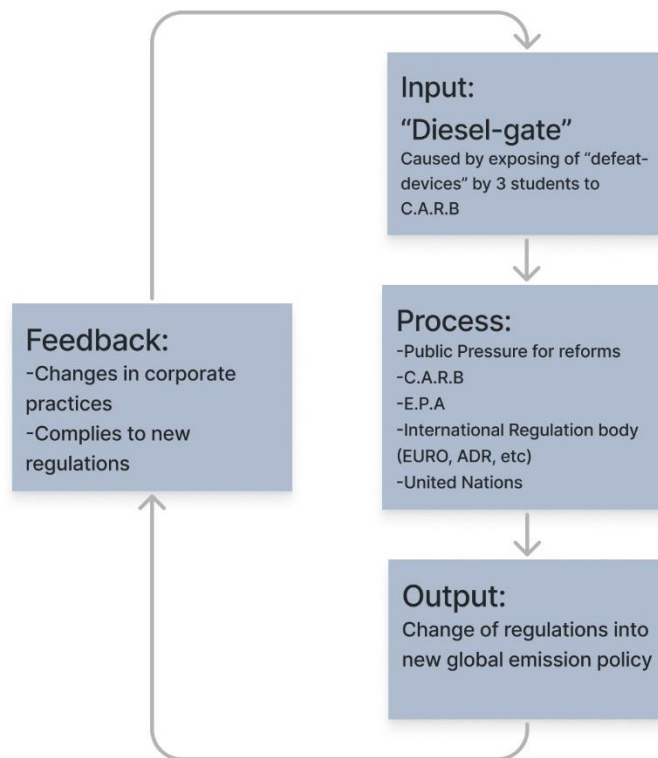


Source: Mario Telò on International Relations: A European Perspective (Telò, 2016)

The researcher also finds the key elements in “**The Great Powers and International System authorized**” book by *Bear F. Braumoeller* (2012). This conceptual framework of the international system comprises several essential components: A varying number of Great Powers, representing dominant states with significant influence on global affairs, issue dimensions or spheres of interest, categorizing the broad areas of concern within the international system, such as power dynamics, ideological conflicts, etc., which states must navigate to ensure their security and prosperity, citizens within each great power who: recognize the significance of these issue dimensions to varying extents and hold preferences regarding desired outcomes, characterized by ideal points along these issue dimensions, leaders who aim to garner support by pursuing outcomes aligned with their constituents' preferences, adapting to uncertain conditions, State activities geared towards enhancing the state's stake in the distribution of resources across different issue dimensions, lastly, state capabilities or power, facilitating the acquisition of a larger share of resources within specific issue dimensions, thereby bolstering the state's influence and effectiveness on the global stage. Thereby, if the

researcher put “diesel-gate” into perspective, the interconnectedness is evident as the scandal's impacts extended beyond individual actors, Volkswagen had breached the law that is emission law as regulatory system at the time thus the effects can cause political dynamics between international regulatory bodies that can change regulation framework and the automotive industry standard policy (Braumoeller, 2012). The researcher used the flow chart in Picture 1 which forms the diagram of the research framework.

Picture 2. Diagram of Research Framework



Source: Process by Author from Mario Telò on International Relations: A European Perspective (Telò, 2016)

1.4 Hypothesis

The hypothesis that the researcher formulated is: **Volkswagen group “diesel-gate” has impacted global diesel-engine vehicle manufacturing policy by comprehensive corporate investigation by countries such as United States, Germany, France, and Australia.**

1.5 Research Methodology

This research is conducted using the qualitative approach to find all the relevant information regarding the material that is being discussed. The qualitative methodology consists of conducting research based on journals, articles, and also reliable websites in order to gather all the necessary data regarding to the VW group “diesel-gate” such as; which countries are affected by the scandal, how many regulations are breached by the scandal in each country, and what regulations are changed by the scandal.

A. Literature Review

In this research, the researcher had conducted a study regarding how many literature reviews that are relevant to this topic that is chosen, from the study that the researcher does, there is only few studies that the researcher found regarding to this topic regarding the impact of cars in international relations. In order to differentiate this study from other study that the researcher had found, the researcher will focus the study to the impact that VW group give toward the international environment Issues, although the researcher will use other studies that is in-line with the research question.

The researcher found an article by (Hall, 2015) titled **“VW Scandal Causes Small but Irreversible Environmental Damage”**. This study focuses what impact does moderate automotive pollution have on public health and it assess the impact of the pollution. the study says that it is challenging to assess the impact of pollution due to at the current time of the research, the researcher still waiting on concrete evidence by the EPA hence why this study does not come to full conclusion. However, the researcher found that according to (Hall, 2015) The EPA currently holds suspicions that these vehicles released nitrogen oxide which is a harmful pollutant to human health that exceeding permitted standards by 10 to 40 times. Numerous news outlets promptly highlighted this revelation. The Guardian conducted an independent analysis, suggesting that the scandal potentially contributed to an additional nearly one million metric tons of pollution annually. However, skepticism persists among experts regarding these claims.

Nevertheless, experts unanimously acknowledge the severe impact of nitrogen oxide as a hazardous pollutant. Once released, it rapidly transforms into nitrogen dioxide, a reddish-brown gas with a sharp odor, which then reacts with sunlight to form the yellow-brown haze observed in urban areas. This smog exacerbates numerous health issues, including asthma, bronchitis, and emphysema. Alternatively, nitrogen oxide can precipitate as acid rain upon contact with the ground, posing threats to plant and animal life. Yiannis Levendis, an engineering professor at Northeastern University

specializing in diesel emissions, emphasizes that once the damage is inflicted, there is no remedy available according to the study by (Hall, 2015).

Another study that researcher found to guide this study is “**The science behind the Volkswagen emissions scandal**” study authored by Quirin Schiermeier (2015). The impact that is given by the scandal that Volkswagen involved in. In this study it is founded that particularly in Europe, where diesel engines are much more prevalent than in the United States, diesel exhaust is a significant contributor to air pollution. Both carbon monoxide and NO_x, which are found in diesel emissions and which can both have substantial negative health impacts, were the target of Volkswagen's manipulations. NO_x is a precursor to ground-level ozone and can seriously affect breathing. The diesel road traffic accounts for 40% of the NO_x emissions in London, where air pollution is a contributing factor in more than 3,000 fatalities per year. Around 20% of urban residents in the European Union are thought to reside in regions where nitrogen dioxide concentrations are higher than recommended levels. Diesel vehicles have been promoted as a method of reducing global warming since they typically leave less of a carbon footprint than their petrol-powered equivalents. Additionally, diesel vehicles may actually keep emissions within legal limits, as the BMW X5 proves. However, analysts claim that Volkswagen's inappropriate behavior may lead to increased emission restrictions, which would raise the price of research and investment for automakers. The incident may also make it challenging to assert with credibility that diesel is compatible with efforts to reduce air pollution. Hence, the researcher chose this study to emphasize the effects that higher pollution level would impact into the regulations concerning environment issues (Schiermeier, 2015).

1.6 Research Reach

The scope and reach of this research are regarding how international environmental policy is affected by the breach of regulations and the reach is the actors of this matter which is consumer, manufacturer and government.

1.7 Writing Systematics

In order to guide and ensure that the formulation of the problem in this study is answered, the author determines the discussion in four different chapters. Each chapter will have its own discussion, but all are interconnected and constructive, so that they can answer the questions contained in the problem formulation in this study. These chapters are;

CHAPTER I: This chapter describes the general description and background of this writing, in which there is research and writing mechanism that is applied to this research. It contains several sub-chapters, among others;

1. Background
2. Problem Formulation
3. Theoretical Framework
4. Hypothesis
5. Research Methodology
6. Research Reach
7. Writing Systematics

CHAPTER II: In chapter II, the writer intends to delve into the details of the “diesel-gate” case and scientific analysis of the “Diesel-gate”. The writer will also put the dynamics of global policy regarding the environment issues, which includes the history of the institutions that are affected by the “diesel-gate” scandal and their current policies in regarding to solving this scandal.

CHAPTER III: In chapter III, the writer will provide data analysis of the study, writer’s novelty and the proofing of the hypothesis previously formulated by the writer.

CHAPTER IV: In chapter IV, the conclusion and recommendations of this research will be provided.