National College of Ireland

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Project Submission Sheet

Student Name:	Alan Egan		
Student ID:	23219980		
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AI Acknowledgement Supplement

[Dissertation]

[Ireland and the EU 2030 Climate Targets: A Critical Assessment of Freight Sector Alignment and Readiness]

Your Name/Student Number	Course	Date
Alan Egan / 23219980	MBA	15/08/2025

This section is a supplement to the main assignment, to be used if AI was used in any capacity in the creation of your assignment; if you have queries about how to do this, please contact your lecturer. For an example of how to fill these sections out, please click here.

AI Acknowledgment

This section acknowledges the AI tools that were utilized in the process of completing this assignment.

Tool Name	Brief Description	Link to tool
ChatGPT	I used ChatGPT to re-define the following interview questions (Appendix 1) in order to make them more formal. 1 What are your feelings towards the climate initiative's being proposed? 2 Are you climate positive at home? 3 Are you aware of any staff initiatives promoting climate positivity? 4 Why do you think these have been implemented? 5 What, do you feel, is the main reason to act now? 6 What do you feel is the likely end point or future state?	https://chatgpt.com/

	7 Do you feel that all stakeholders within the industry this this is worthwhile? 8 Do you think stakeholders within your own organisation feel this is worthwhile? 9 How do you feel about the support structures that are in place, e.g. financial, legislative? 10 How do you feel the required investments will result in payback for stakeholders within the sector? 11 What might this look like? 12 What, if anything, might prevent the successful implementation of these initiatives? 13 Do you feel that the successful implementation of these initiatives will solve the underlying problems that they set out to? 14 Why do you feel that the Irish Governments targets are different to the EU's?	

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School: National College of Ireland Course: MBA

Degree to be awarded: MBA

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Exploring the Role of Regulation, Investment, and Operational Change in Achieving Decarbonisation

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Ireland and the EU 2030 Climate Targets: A Critical Assessment of Freight Sector Alignment and Readiness

Exploring the Role of Regulation, Investment, and Operational Change in Achieving Decarbonisation

Alan Egan
MBA
National College of Ireland
Submitted to the National College of Ireland, August 2025

Abstract

The creation and use of more sustainable energy sources is seen as a crucial component for the future competitiveness of the EU and Irish economies. However, the stated aims of these green policies have long been argued as being overly ambitious, whilst EU legislation around these initiatives are seen as both overly restrictive and cost prohibitive to fully implement within the timeframe.

Using thematic analysis, this research aims to understand the reasons behind the implementation of these goals and assess the feasibility of the stated targets in relation to the legislative requirements. Exploring the investments that are needed by all companies to remain complaint and further assessing the support structures in place to help these companies make the initial investments, the research will attempt to identify what returns can be reasonably expected, and what impact the investment requirements have had on businesses.

Thesis Declaration Page

Submission of Thesis and Dissertation

National College of Ireland

Research Students Declaration Form

(Thesis/Author Declaration Form)

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Degree for which thesis is submitted: MBA

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Date: 15/08/2025

Acknowledgements

I would like to thank my supervisor, Conor Thornberry and the entire research methods team within NCI for their guidance while conducting this research. The ongoing support throughout this process has been of huge benefit.

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List of Abbreviations

AFIR – Alternative Fuels Infrastructure

BMWK – Federal Ministry of Economics and Climate Protection

CNG – Compressed natural gas

EEA – European Environment Agency

ESG – Environmental, social, and governance

ESRS – European Sustainability Reporting Standards

EU – European Union

EV – Electric vehicle

FESH – eHighway Schleswig-Holstein

GHG – Greenhouse gases

HDV – Heavy duty vehicle

HGV – Heavy goods vehicle

HVO – Hydrotreated vegetable oil

IPCC – Intergovernmental Panel on Climate Change

IRU – International Road Transport Union

LGV - Large goods vehicle

LNG – Liquefied natural gas

NGO – non-governmental organisation

OECD – Organisation for Economic Co-operation and Development

ROI – Return on investment

SME – Small and Medium Enterprise

TEN-T – Trans-European Transport Network

TFI – Transport for Ireland

TII – Transport Infrastructure Ireland

UNFCCC – United Nations Framework Convention on Climate Change

Introduction

Global warming and climate change have been at the forefront of people's thoughts and political policy for decades, their importance increasing drastically in recent years due to the significant threats posed to the Earth's climate system, human wellbeing, natural ecosystems and economies. More frequent and intense heatwaves is one such area that has increased in recent times, as well as other extreme weather events such as hurricanes, floods, droughts, and wildfires. Events such as these can cause widespread damage, economic disruption and even loss of human life.

Changes in climate patterns can also lead to crop failures and water shortages, causing economic losses for farmers, food shortages and increased food prices. Disruption to supply chains caused by climate change can result in an increase in the cost of goods and lead to economic downturns. This increased competition for resources can oftentimes lead to international tensions and conflict.

The use of fossils fuels such as coal, oil and natural gas contributes to a significant portion of global emissions and remain the most prevalent energy source for manufacturing goods, producing food, powering buildings and transportation. The focus of this research will centre primarily on the freight transport industry. The freight industry comprises of the transportation of goods, from raw materials through to finished products for the purposes of consumer use, across geographical regions. Goods are moved by various modes comprising of road, sea, air, rail, and inland waterways.

Within Europe, 77% of inland freight is moved by road, totalling more than 13.2 billion tonnes and 1,857 billion tonne-kilometres in 2023, proving heavy-duty vehicles are central to the smooth operation of the regions supply chains. In 2022, 3.5 billion tonnes of maritime freight were loaded / unloaded in EU ports, of which 2.1 billion tonnes were for onward transport to or from non-EU countries, identifying

the maritime sector as being hugely important for the European economy in a global context. (Eurostat, 2023)

Transport is fundamental to a strong European economy. However, there are many challenges facing the freight industry across Europe, chief among these being global warming, geopolitical tensions, and historical dependencies on fossil fuel technology. In 2015 an agreement was reached between all parties of the United Nations Framework Convention on Climate Change (UNFCCC) with the aim of "keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius". (European Commission, 2015)

Later becoming known as the Paris Agreement, it requires that all parties operate in 5-year cycles, with each parties' efforts put forward through national determined contributions and reported upon at each of the 5-year intervals. In response to the Paris Agreement, the European Commission drafted the 2030 Climate Target Plan, which set ambitious targets of a 55% reduction in emissions by 2030, with further aims of achieving climate neutrality by 2050 encompassing all aspects of industry and society. (European Commission, 2023)

As previously noted, movement by truck accounts for approx. 77% of all land activity within Europe, while shipping accounts for approx. 14% of all transport emissions in the EU. When combining these figures with air transport, it's apparent that successful decarbonisation within the European freight industry is essential to meet the ambitious targets set out in the 2030 Climate Target Plan as well as to help curb the ever-increasing effects of climate change.

Positioned alone to the west of mainland Europe, Ireland faces its own unique challenges. The freight industry plays an integral role within an economic context, acting as a pivotal link in the supply chain between the Irish market and mainland Europe, while also providing a channel for US multinationals to gain access to the wider European market.

The creation and use of more sustainable energy sources is seen as a crucial component for both the future competitiveness of the EU economy and, possibly more importantly, to help reduce the impact of climate change. However, it could be argued that while the stated aims of these green policies are admirable, they are also overly ambitious as EU legislation around these initiatives may be both overly restrictive and cost prohibitive to fully implement within the timeframe.

Given the extensive research highlighting the escalation of the effects of climate change and global warming as well as the need to reduce greenhouse gas emissions, understanding the reasons why individuals and organisations undertake climate positive practises will be explored further throughout this research.

Literature Review

Rationale for Research

The reasons for such heightened actions within the European freight industry are many. According to the European Environment Agency (2024), 36 potentially severe climate risks were identified across Europe. Global warming caused by human activity continues to hit unprecedented levels, Europe being most notably impacted. Since the 1980s, the European continent has seen global warming on a scale almost twice that recorded across the rest of the world. Globally, 2023 registered as the warmest year on record in over 100,000 years, with the world's ocean temperatures also reaching record levels. (European Environment Agency, 2024)

Reported by Transport & Environment (2024), it is expected that 12 countries will fail to comply with the 2030 national climate targets, meaning that any countries unable to meet their targets will face heavy penalties through the purchase of carbon credits from those countries who do reach their goals. Further, a collection of NGOs from France, Germany, Ireland, Italy, Sweden, Bulgaria, Cyprus, and Malta have called on the European Commission to launch legal action against their governments, citing failures in their climate plans as breaches of EU law. (Euronews, 2025)

Conversely, there are those who argue that sustainability in logistics is merely window dressing. In a 2024 article titled 'There is no Such Thing as "Sustainable Logistics"' by Jakob Beer, he states that sustainable logistics "is a smoke grenade that is used to milk the important topic of sustainability, which is a megatrend on the one hand, but also a popular buzzword on the other." In a 2021 article by Tariq Fancy, ESG was likened to a luxury good, in that it was "something that does really well when people have money, and they love to spend on it because it makes them feel good, but it kind of goes away a little bit when there's less." In 2018, Business Europe questioned the target set in the EU energy efficiency proposal of a minimum 35% by 2030, stating that "realistic targets and sufficient flexibility are the main preconditions to make energy efficiency a success story in Europe", and that "the

35% target risks impacting negatively the EU Emission Trading System and implies a significant increase of cost for the EU economy and consumers."

A significant majority of vehicles operate on fossil fuels such as diesel and petrol, which emit carbon dioxide. Carbon dioxide is a greenhouse gas, of which transport accounts for almost 15% of total emissions, road transport being the largest offender within the sector with 69% of all transport emissions. Since 2010 the transport sector's emission levels have increased faster than any other end-use sector and could grow by up to 65% by 2050 if left unchecked. (IPCC, 2022)

Decarbonisation within the transport sector demands several measures, with electromobility and alternative fuels chief among these. Noted by Transport & Environment (2024), "the transport sector in Europe in 2015 accounted for the lowest share of renewable energy of just 6%, with a target of increasing this to 24% by 2030. Yet, transport decreases in decarbonisation approx. three times slower than other sectors in the economy, and due to this, runs the risk of accounting for 44% of total emissions in the EU". (Transport & Environment, 2024)

The scale of the challenge is set out quite comprehensively by the European Commission (2011), which states that "the EU needs to reduce emissions by 80-95% below 1990 levels by 2050, in order to reach this goal." Concurrently, between the period from 1990 to 2022, total greenhouse gas (GHG) emissions decreased by 32.51%. (European Environment Agency, 2024). If this rate of reduction were to continue at the same pace until 2050, it would be reasonable to expect that the EU will fall short of their targets by a margin of 20-35%. Bearing this in mind, it is worth exploring whether the proposed legislation will be sufficient to achieve the stated goals, or indeed if the original targets were overly ambitious.

Literature Review

While the decrease in emissions is required across numerous sectors, the white paper, 'Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system', notes that "a reduction of at least 60% of GHGs

by 2050 with respect to 1990 is required from the transport sector, which is a significant and still growing source of GHGs. By 2030, the goal for transport will be to reduce GHG emissions to around 20% below their 2008 level. Given the substantial increase in transport emissions over the past two decades, this would still put them 8% above the 1990 level." (European Commission, 2011)

A further report by Transport & Environment (2024), argues that lowering transport activity growth such as reduced new road and airport capacity, could result in emissions decreases of 73% in 2040 when compared to 1990 figures, and zero emissions by 2050. (Transport & Environment, 2024). It could be argued that reducing transport activity growth while freight volumes grow is counterproductive and may not be compatible with a sector that is already straining to meet demands. A 2024 report by the International Road Transport Union (IRU) reported that road freight volumes in the EU grew by 22% between the period from 2013 to 2022, while in April 2024 the IRU noted a shortage of 233,000 truck drivers across Europe in 2023. This figure is projected to exceed 745,000 by 2028. (International Road Transport Union, 2024)

Rail Infrastructure in a European Context

The Transport & Environment (2024) report also appears to overlook the potential importance of rail in providing alternative options to road use, both from a passenger and freight perspective. In freight terms, there are arguments for increasing the use of rail networks in conjunction with ports, thus seeking to increase efficiencies in both maritime and rail transport and therefore reduce the need for road transport over longer distances. Rail transport is proven to be more energy efficient than heavy-duty road vehicles and could provide an opportunity for carbon emissions reductions. However, the All-Island Strategic Rail Review report, published by the Department of Transport and Department for Infrastructure in 2024 notes that Ireland has the lowest level of electrified railway in the European Union, meaning Ireland produces relatively high carbon emissions from the rail system. Even so, rail remains more carbon efficient than road transport, and the report notes that through strengthening of rail connectivity to Irelands ports, it could reasonably

expect to see 66% of freight tonnage moving through ports linked to railway services. Currently much of the rail freight network is centred on ports in the southeast, with poor connectivity to Dublin Port. Were this issue to be addressed it would mean a stronger link with Irelands largest port and subsequently greater connectivity to mainland Europe.

In 2023, the European Commission issued a proposal 'on the use of railway infrastructure capacity in the single European railway area.' Within this proposal, the European Commission aims to improve rail infrastructure management and in doing so, wish to "optimise their use, improve cross-border coordination, increase punctuality and reliability, and ultimately attract more freight companies to rail." (European Commission, 2023)

The Trans-European Transport Network (TEN-T) has been in development since the 1990's, with the aim of improving primary roads, railways, inland waterways, airports, seaports, inland ports and traffic management systems across Europe. As part of this initiative, Ireland is included in the North Sea – Mediterranean Corridor, encompassing Ireland – UK – Netherlands – Belgium – Luxembourg – Marseille (France). Since the onset of Brexit however, this corridor has been modified to Ireland – Belgium – Netherlands and Ireland – France. While the aim of the TEN-T is to promote cross-border rail movements and aims to decrease bottlenecks at historical border crossings, the network within Ireland remains relatively small and would appear to back up claims from the Freight Transport Association Ireland regarding the need for a "significant upgrade to the national rail network." (FTAI, 2024)

In the All-Island Strategic Rail Review report (2024), it is noted that rail "volumes have fallen from c.4 million tonnes in 1981 to c.0.3 million today (which is less than 1% of modal share)", while in 2019 "Ireland recorded the lowest level of rail freight mode share in the European Union." The miniscule market share is further highlighted in the same report, emphasised by Iarnród Éireann's current freight business being based on three traffic flows, these being zinc and lead concentrates

from Tara Mines to Dublin Port, intermodal trains from Ballina to Dublin Port, and bulk wood from Ballina and Westport to Waterford. The need for a more comprehensive rail freight network is exacerbated further when you note the direct comparisons of CO2 emissions between road and rail. On average, transport by road emits 112g CO2 per freight tonne km, compared to 18g CO2 per freight tonne km on rail. Expectations that by 2040, HGV traffic in Ireland is projected to increase by 74% over 2016 places further strain on Irelands ability to meet EU targets by 2050 (Rail Freight 2040 Strategy, 2021).

Further, the extent of the challenge being faced in the Irish rail network is highlighted in the fact that the rail aspect of TEN-T focuses on essentially three lanes only and based around bespoke sectors. It can be argued that the scope of the investment is insufficient for real change to take place. Ireland's Road Haulage Strategy 2022–2031 report outlines the challenges faced in moving goods by rail as opposed to road. Highlighting the fact that Ireland has no rail connection to mainland Europe, the report states that Ireland does not have the capability to leverage the benefits of longer and more cost-effective rail journeys that can be achieved in mainland Europe. Citing that 300km is the optimum distance where rail freight becomes competitive with road freight, the smaller geography within Ireland could be a legitimate constraint to achieve sufficient development. 99% of freight being transported within Ireland is done so by road, and it is reasonable to assume that this will largely remain the case in the longer term.

Irish Context for Climate Action

The 2023 European Commission proposal also aims to offer stronger incentives for low-emission lorries, and it could be argued that a reduction on the need for road transport over longer distances is in-line with the drive for increased use of electric heavy-duty vehicles. Historically, there have been concerns around the range that electric HDV's can handle, allied to apprehension regarding the charging infrastructure available. Limitations around charging hubs for electric HGVs is particularly pertinent in Ireland, where the country's first electric lorry charging point was opened in August 2024. In the Climate Change Advisory Council Annual Review

(2024) the requirement for depot-based and destination charging infrastructure for zero-emission HGVs and LGVs has been championed, alongside a targeted positioning of high-capacity charging infrastructure along key transport corridors. The report argues that “high-power infrastructure could reduce the need for larger battery capacities, in turn improving efficiency and lowering vehicle purchase costs.” For the Irish freight industry, many of the initiatives highlighted appear to be aimed towards a mainland Europe context and may not necessarily translate to the Irish situation for many reasons, with infrastructure limitations being key amongst these.

Further to the EU 2030 Climate Target Plan, the Irish Government have set their own target of a 51% reduction in carbon emissions by 2030. However, in the period between 1990 and 2022, the European Environment Agency highlights that total greenhouse gas (GHG) emissions in Ireland actually increased by 7.21%. (European Environment Agency, 2024) In their 2022 research report, Zhang, Plant and Kanellos highlighted an imbalance between initiatives being implemented by the Irish government, noting that that while the Irish government had launched sustainable transport policy measures, the focus remained mainly on sustainable mobility for active travel and passenger transport. Since 2019, the Irish government has launched a number of initiatives tasked with aiding better sustainable practices across the freight industry. Most notable amongst these are the Climate Action Plan 2019 (CAP19) which sets out the governments targets for reducing carbon emissions by 2030 and further plans for achieving net-zero by 2050. The Alternatively Fuelled Heavy-Duty Vehicle Purchase Grant Scheme (AFHDV) which supports the purchase of new heavy-duty vehicles (HDVs), the Sustainable Freight Distribution Framework, and a Sustainability Implementation Plan which is being developed by Transport Infrastructure Ireland (TII). All of these policies appear positive, but the question remains if these are enough to address the previous imbalance and help meet the stated targets.

When compared to other EU countries, Ireland falls behind a significant number of their counterparts. In 2024, a report by Sustainable Governance in International Perspective highlighted that countries such as Sweden, Greece, Switzerland,

Denmark and Estonia display the most progress in reducing net GHG emissions per capita. Estonia in particular have reduced their GHG emissions by 40% from 2013 to 2022 while continuing to grow both its economy and population (Sustainable Governance in International Perspective, 2024). This decrease in GHG emissions has predominantly come about due to an overall reduction in electricity and heat generation from oil shale and growth in generation from wind, solar photovoltaics and domestic forestry biomass (OECD, 2025). Further, studies in Sweden have shown that they are continually recognised as one of the world's leaders in implementing the environmental agenda due to ongoing policy implementation. Similar to Ireland, Sweden's main sources of GHG emissions in the freight sector come from road and sea transport. A number of initiatives have been introduced with the aim of decreasing GHG emissions. Notably, total GHG emissions from freight transport is expected to decrease by between 51% and 62% between 2017 and 2040, primarily through the increased use of biofuels. This comes despite expected growth in the transport sector in 2040 of between 40% and 50% by road, and between 60% and 70% by sea. Another component will be the introduction of 74 tonne trucks, expected to reduce the number of vehicles on the road and increase efficiencies (Johansson et al, 2024). This type of initiative does bring an added layer of cost however, with investment required to ensure the road networks can bear the additional weight.

Having set their own carbon emissions targets and despite the introduction of various policies, not all of the Government initiatives outlined have been met with open arms. Highlighted in a press release by the Freight Transport Association Ireland (FTAI), who argue that "the report ignores the importance of freight movements to the Irish economy and actively ignores issues which would make distribution more effective, to the benefit of the whole country." The press release by the FTAI highlights two main challenges facing the Irish freight industry, stating that "the switch to alternative fuels is currently impossible without a nationwide refuelling network, and the recommendation to switch to rail freight will not be possible without a significant upgrade to the national rail network." (Freight Transport Association Ireland, 2024)

In the Ireland's Road Haulage Strategy 2022–2031 report, it is noted that a comprehensive mapping of ancillary infrastructure as it relates to haulage and the road freight sector, including rest stops and refuelling stations, is to be developed with the support of the Department of Transport. In 2023, responsibility for the provision of electric vehicle recharging and alternative fuel refuelling infrastructure in Ireland moved to Transport Infrastructure Ireland (TII). Under the Regulation for the Deployment of Alternative Fuels Infrastructure (AFIR) set out by the European Union, the main focus of TII is on the planning for the provision of three key elements of future infrastructure, these being enroute electric vehicle recharging for cars and vans (LDVs), enroute electric vehicle recharging for heavy duty vehicles (HDVs) such as lorries and buses, and enroute hydrogen refuelling stations for heavy duty vehicles (HDVs) such as lorries and buses.

In 2024, the departments first infrastructure scheme was launched, known as the ZEVI Charging Infrastructure LDV En-Route Grant Scheme. To date, 17 locations operating 131 recharging points have been approved under the scheme. A similar scheme for HDV's is currently in the application phase and as such there is no publicly available information as to the level of uptake to date. As these schemes are primarily centred on electric vehicle recharging, it is yet unclear if the scheme will sufficiently fulfil the requirements of the wider freight industry in the timeframe required, and to what scale this will alleviate the scope of the challenge highlighted by the FTAI.

Alternative Fuels in an EU Context

In the European Commission white paper (2011), it was stated that "Oil will become scarcer in future decades, sourced increasingly from uncertain supplies" (European Union, 2011). The reality of this scenario has come to fruition earlier than anticipated due to the Russian occupation of Ukraine beginning in 2022, which caused a significant supply side shock resulting in a shift in demand from other sources. All of which meant reduced supply, higher costs and increased inflationary pressure in the European economy and increasing the need for alternative fuel options. In an effort to lower emissions, and perhaps also reduce the reliance on

traditional fossil fuels which can be impacted by geopolitical issues, biodiesel, hydrotreated vegetable oil (HVO), compressed natural gas (CNG), liquefied natural gas (LNG), hydrogen, and electricity have become the most prominent alternative fuels being used in the transport sector.

Each alternative comes with their own benefits and drawbacks, and according to the European Commission's 2050 Long-term Climate Strategy, "there is no single fuel solution for the future of low-emission mobility - all main alternative fuel options are likely to be required, but to a different extent in each of the transport modes." (European Alternative Fuels Observatory, 2014). Much of the challenges these alternative fuels face centre around suitability for the specific sector, increased costs and infrastructure availability. Electricity is most suited to the rail industry, where electric trains are becoming more prevalent in recent times. Electric road vehicles are also on the rise, with the European Commission aiming to see 80,000 electric or hybrid lorries on European roads by 2030. However, electric road vehicles face severe challenges. Limited driving ranges caused by heavy batteries and low-energy density is the biggest single drawback. Other factors such as insufficient charging points, exacerbated by the lack of a common plug across Europe, plus high costs also contribute to the current slow take-up in the market. Further research has shown that infrastructure, economic and policy barriers are more influential than social barriers to slow take-up of electric vehicles, with a lack of charging stations cited as the largest barrier (Adhikari et al., 2020). Government incentives, such as free charging, have been successful in Norway at improving EV uptake for personal and business use (Ingeborgrud & Ryghaug, 2019).

To counter such drawbacks, there are a number of initiatives in place with the aim of incentivising the purchase of electric vehicles. One such example is in the German market, where the trialling of the 'eHighway Schleswig-Holstein' is being undertaken. This trial involves the use of trolleybuses using overhead power lines operating along three separate sections of motorway, the aim being to measure the economic, ecological and technical benefits. An initial assessment of the trial in Schleswig-Holstein found that trucks' CO_2 emissions could be reduced by around half with the

current electricity mix (German Press Agency, 2024). However, many experts have expressed doubt as to whether the technology can be realistically rolled out due to the high infrastructure investments required, particularly in neighbouring countries. Between 2019 and 2024, the Schleswig-Holstein trial received approx. €19 million in funding from the Federal Ministry of Economics and Climate Protection (BMWK), and in 2024 the researchers participating in the eHighway Schleswig-Holstein (FESH) field trial noted that "the overhead contact line shows the greatest ecological and also economic potential" of all technologies tested. To date however, there has been no further investment to extend the trial further (Hoppner, 2024).

Another initiative introduced in Ireland is the Zero-Emission Heavy Duty Vehicle Purchase Grant Scheme. Used to assist small, medium and large companies in purchasing alternative fuelled HDVs which meet EU environmental standards, the initiative provides transport companies with a level of aid intended to help meet EU directives, administered on a scaled basis dependant on the size of the organisation. Introduced in 2020, the SENATOR Project intended to reshape last-mile delivery processes across European cities. Citing a figure of approx. 75% of the EU population living in urban areas, the SENATOR Project was established to bring together user demand, transport, freight logistics, and infrastructure under a shared framework. A pilot scheme introduced in Dublin aimed to consolidate cargo from various logistics operators, with one of its targets to increase efficiencies, reduce CO2 emissions and ease traffic congestion. However, one of the key barriers to successful implementation was due to a reluctance by logistics operators to fully embrace the collaborative effort. There are several factors for this, such as data privacy concerns, liability concerns, and possibly most importantly of all, competitivity interests.

Biofuels are also becoming increasingly popular when sourcing alternative options to diesel. Especially used on road transport, biofuels don't come with the same limitations as electricity and offer an alternative that is broadly similar to existing models. However, in many cases across the EU, the refuelling infrastructure is not as extensive as standard fossil fuels, resulting in heightened supply constraints and subsequent increased costs when compared to standard diesel fuels. In 2025 the

Freight Transport Association Ireland published a pre-budget submission. Within the report, the rising operational costs in the Irish haulage sector were highlighted, citing issues such as geo-political tensions impacting on global supply chains, fluctuating fuel prices and the increasing demand to decarbonise. In the FTAI Managers Guide to Distribution Costs Report (2024) it was noted that fuel accounts for over 48% of operational costs for Heavy Duty Vehicles, making alternative energy sources a very attractive option.

As well as highlighting areas where the FTAI has helped haulage companies with decarbonisation compliance through their 'TruckSafe' scheme, the report argues that a similar scheme could be introduced by Government to track CO2 emissions and incentivise companies to engage in better fuel management practices, increase their use of HVO and alternative fuels, and purchase newer Euro VI vehicles. It is also argued that further supports such as tax credits run in conjunction with the existing Diesel Rebate Scheme would be a worthy introduction. Also contained in the report is a note regarding CNG, where it is stated that "CNG fuelled vehicles save approximately 28 tonnes of CO2eq per vehicle each year. As this fuel is available it should be actively promoted and supported publicly as a viable alternative during transition, and as a viable solution for operators as they plan for net zero emissions. For every 100 CNG HGVs, emission savings can be 2,737 tonnes CO2eq per annum which is a substantial improvement and can deliver immediate benefits." (FTAI, 2025)

This raises the question as to why incentives such as those proposed are not forthcoming and if Government policy is inadvertently holding back efforts to meet the 2030 targets, despite the heavy penalties that will be incurred should the targets not be met. Such fines could be between €8bn and €26bn, as reported by the Irish Fiscal Advisory Council (2024), who also noted that Ireland is expected to overshoot its 2030 greenhouse gas emissions target for transport, buildings, small industry, waste and agriculture by approx. 57%. In the Climate Change Advisory Council Annual Review (2024) it is noted that the freight sector is expected to account for 52% of total transport emissions by 2030. Also noted is the fact that battery costs for

HGVs have not achieved cost equivalency with LGVs nor have the costs of fuel cells for hydrogen HGVs fallen as quickly as anticipated. All of which points to a perceived lack of support for the industry with costs increasing on one hand and increasing decarbonisation policy demands on the other. Countering this argument, a government initiative called the Zero-Emission Heavy Duty Vehicle (ZEHDV) Purchase Grant Scheme was introduced in 2024 with the aim of providing financial support for companies to purchase zero-emission heavy-duty vehicles instead of diesel vehicles. The same grant also helps with the purchasing of charging infrastructure at depots, commercial premises and logistics hubs, all of which can be beneficial to increasing infrastructure in the sector. However, the FTAI argues that the limits of such grants can and should be increased, owing to the substantial cost to transition to more environmentally friendly operations. For example, in Germany €2.5 billion has been invested in EV infrastructure with a further €9,000 subsidy per vehicle to encourage adoption, while an initiative in China saw an annual subsidy of USD 75,500 provided to the major bus operators for each electric vehicle purchased as part of a transition to greener programmes (EY, 2022). Further to cost implications, initiatives such as these could help companies to explore new markets, build stronger brand perception and further their own sense of moral responsibility.

Another perceived strain on sustainability initiatives comes through the various reporting requirements. The EU and its member states are required to report to the UN annually in relation to their greenhouse gas emissions and provide biennial reports on their climate policies, measures and progress towards the targets. These reports are due to the EU being party to the United Nations Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol and the Paris Agreement. Internally, the EU requires that all member states record their own emissions under the EU Climate Monitoring Mechanism (2013). Included in this mechanism are various regulations, such as the Corporate Sustainability Reporting Directive (CSRD) which mandates sustainability reporting for large companies, EU Emissions Trading System (ETS) reporting which requires manufacturing companies to measure their CO2 emissions, the Corporate Sustainability Due Diligence Directive (CSDDD) used for companies to identify and address any negative environmental and human rights

impacts that might arise from their actions, and Carbon Border Adjustment Mechanism (CBAM) which necessitates reporting on emissions of imported goods.

While the aim of the reporting mechanisms is to provide increased transparency, many of these reports can be highly detailed and complex and can place significant additional strain on companies from a compliance perspective, especially smaller companies with more limited resources. In response, the EU Omnibus Package was introduced in February 2025 with the aim of simplifying the EU sustainability regulations and reducing the reporting workloads for businesses.

Going back to Beer's article which refers to sustainability as a "megatrend" and "popular buzzword", this does raise the question as to whether climate positive policies are feasible, and even if there are alternative motives behind the move towards more sustainable practices. While Beer's argument focuses less on the existence and effects of climate change but rather that logistics, more often than not, is at the end of what he terms "a long and often branched causal chain." This, he argues, means that the logistics industry acts in a reactionary capacity rather than being proactive, and therefore is unable to truly achieve real efficiencies. There is some merit to this argument, whereby logistics companies are continuously striving to achieve greater efficiencies within their own organisations, they will also be more than happy to be paid to solve problems created by the inefficiencies of others.

In another part of Beer's article it states, "improvements in ecological aspects are almost always closely linked to economic savings", which raises the question as to whether there are sincere moral reasons behind the implementation of climate positive practices or if these are primarily driven by financial incentives. There can be many factors that impact on an individual's decision to use sustainable practices over less sustainable methods. Verdugo (2012) noted that negative emotional states can increase consumers' desires to make sustainable choices. These include guilt and shame associated with insufficient effort toward sustainability, fear of consequences of environmental degradation, and other emotional discomfort associated with anti-environmental behaviour. It is a fair assumption that research such as this may have

influenced the onset of initiatives such as carbon taxes, intended to prevent consumers from buying products that impact negatively on the environment.

In 2022, the World Economic Forum highlighted the notion of sustainability being an integral part of corporate strategy. Within this they identified five factors driving sustainability in corporate strategy, these being investor demand, consumer demand, regulatory requirements, increases in productivity, and an ability to attract new talent. (World Economic Forum, 2022). This is backed up in a 2020 report by First Insight, Inc. that states "Generation Z shoppers prefer sustainable brands and will spend the most on sustainable products." Further to this claim, Johnson (2022) notes that through the 'halo effect,' perceptions of product sustainability can boost perceived performance, and this impact is strongest when the sustainability claims are related to the brand, as opposed to the product (Psychology Today, 2022). Each of these notions would appear to support Beer's claim of economic reasons being the most prevalent basis for the inclusion of ESG as a part of corporate strategy.

Research Question

The research aims to identify the barriers that exist which could prevent the successful implementation of the EU 2030 Climate Targets in the freight industry.

Aiming to understand the reasons behind why sustainable practises should be implemented and what impact these have on businesses in general, further objectives of the research will be to analyse the impact of EU government legislation and assess the actions that have been implemented to date.

Enforced at EU level with responsibility for realisation being undertaken at national level, the research will aim to explore what legislative supports are available, both financially and regulatory, and to assess if these are sufficient for the freight industry to meet the agreed targets.

With an Irish context in mind, the research to date would indicate that many of the proposed initiatives focus primarily on mainland Europe, such as electric vehicle charging infrastructure and expansion of rail networks. The research will attempt to discover what considerations were given to Ireland's geographical position within Europe, and if any of the green initiatives can realistically translate to the Irish freight industry.

The Irish Government have set their own target of a 50% reduction in carbon emissions by 2030, and it has also been noted that over the past 30 years total greenhouse gas (GHG) emissions in Ireland have increased by 7.21%. The research aims to adjudge if the Government targets were initially feasible and if so, do they remain so.

The research will assess what has been achieved to date and evaluate how the Irish freight industry plans to implement further legislation to successfully reach the stated targets.

Finally, the research will aim to explore whether moral or commercial reasons are the true motivating factors behind implementation of the EU 2030 Climate Targets in the freight industry.

Methodology

Introduction

This section sets out how the research was carried out in the area of Ireland and the EU 2030 Climate Targets. The research explored the opinions and perspectives of key decision makers within the Irish and EU freight industry with regards to sustainability and the EU 2030 Climate Targets. Redman and Mory define research as a ''systematised effort to gain new knowledge'' (Redman and Mory, 1923). The goal of this research is to understand the reasons behind why sustainable practises should be implemented and to analyse the impact of EU government legislation that have been implemented to date. Further, the research will aim to explore whether moral or commercial reasons are the true motivating factors behind implementation of the EU 2030 Climate Targets within the freight industry.

Research Strategy

The research used qualitative interviews as the primary method of data collection. Due to time constraints, it was not possible to conduct research through ethnography, participatory action research or qualitative case study. Focus groups were also not suitable for this research as employees from competing organisations were not open to providing the required information in front of their peers.

One of the main aims of the research was to understand the psychology around why this topic is important. Through semi-structured interviews, discussions with each participant consisted of the same base questions to establish consistency throughout the process. At the same time the questions were intentionally open-ended to allow participants express their own personal views and help promote further exploration of key topics. The aim was to discover how each participants response varied in relation to the research topic, dependent on the context of their own individual situation.

Population

The research sample was taken from interviews with five participants (n=5) across a broad range within the freight industry both in Ireland and the EU, including the Irish

Government. The views of representative bodies within the Irish freight industry were sought, and in the interest of balance, the views of government departments with responsibility for emissions policy initiatives in Ireland were also collected. The research further explored views from employees within freight companies operating in the maritime, rail and air freight sectors both in Ireland and the EU. Due to the proposed interviewees residing across Ireland and mainland Europe, meetings were conducted both in-person and via Microsoft Teams. A full list of the sample participants is included in Figure 3.

Participant	**Gender**	**Age Range**	**Seniority Level**	**Years of Experience**
P1	Female	40-50	Director	20 years +
P2	Male	40-50	Director	20 years +
P3	Female	25-35	Executive / Leadership	10 years +
P4	Female	25-35	Senior Manager	10 years +
P5	Male	40-50	Senior Manager	15 years +

Figure 1: Participant details

Procedure

Prior to each interview taking place, detailed information sheets were provided to each participant outlining the focus of the research and the reasons why they were chosen to partake. Informed consent was sought and obtained from each participant and stored securely. All interviews have been recorded and transcribed, and any sensitive information dealt with in a confidential manner so as not to illicit recognition of the participants. Neither the participants names nor company names are used in the research. Further information is available in the Ethics section below.

Each interview was conducted either in-person or via Microsoft Teams. The interviews ranged in duration from 20 minutes to just over 60 minutes. All participants were asked the same base questions to provide consistency across the sample. A copy of the interview questions is available in Appendix 1. All interviews

were transcribed via the recording technology used, being Microsoft Teams and Apple iPhone Voice Memos, and re-read multiple times to ensure familiarisation with the data.

Thematic Analysis

Using thematic analysis, the research will identify, analyse, and discuss various themes within the qualitative data. Braun and Clarke's (2006) six-phase framework formed the basis of the research analysis, consisting of familiarisation with the collected data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and writing the report. As the research has been conducted through interviewing individuals working across a broad range within the freight industry, thematic analysis was an important tool in identifying common themes as they emerged across each facet of the sector.

Phase	Description of the process
1. Familiarizing yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Figure 2: Thematic Analysis a phased approach (Braun & Clarke, 2006)

During the transcription process, initial codes were developed based on colour categories, which was used to identify conceptual similarities within the data. This consisted of pinpointing key words and phrases that were mentioned repeatedly throughout the data and finding links between common threads. A full list of the identified codes and relevant themes are included in Figure 3.

Codes	Theme
Cost is high	Internal challenges
Value is hard to measure	Internal challenges
Infrastructure support lacking	Regulatory challenges
Right thing to do	Moral duty
Return on investment	Internal challenges
No financial incentive, more incentives, SEAI incentives	Regulatory challenges
Compliance	Regulatory mandates
Mandated	Regulatory mandates
Targets are ambitious	Regulatory challenges
Reduce carbon emissions	Moral duty
Legislation, reporting requirements	Regulatory challenges
Missing targets, dialled back targets	
CSRD pause	
Climate sceptic governments	External challenges
Dialled back legislation	External challenges
Technology limitations	Regulatory challenges
Corporate strategy	Economic strategy
Lack of alternatives, HVO, personal lifestyle	
Economic benefits	Economic strategy
Commercial benefit	Economic strategy
Sustainable business practice	Moral duty
Consumer pressure	Economic strategy
Ireland policy aligns with EU	
Noncompliance	Regulatory challenges
Irish targets too idealistic	Regulatory challenges
Maintain business	Economic strategy
Climate positivity outside work	Moral duty
Geo-political issues	External challenges

Figure 3: Thematic Analysis Identified Codes and Relevant Themes

These codes were further reviewed to identify common themes, and the data was re-read to ensure all relevant information had been coded correctly. Sample coding can be found in Appendix 4.

Limitations of Methodology

The author recognises that the sample size is small (n=5). Owing to time constraints, decision-makers within the industry proved difficult to access, however the participants interviewed came from a broad range of sectors within the freight industry and Irish government. Each participant was at Senior Management or Director level, and the seniority of each participant improved the sample. Improvements for further research would include increased participation from employees of both freight and government representative bodies as well as government employees at a European level.

A small sample size increases the risk of bias by the participant. Similarly, the authors own role within the freight industry could have potentially influenced some of the questions that were asked and may potentially include unconscious bias in the interpretation of the data. Kurland (2000) notes that "authors choose content, language, writing styles, argumentative rhetorical styles, and logics for a reason." In reporting this potential bias and increasing the transparency of the research, the author feels that readers will be in a better position to critically evaluate the findings and understand the potential limitations within the research.

Ethics

The author considered the ethical implications of such research and found that confidentiality and informed consent is of the utmost importance. As the research is conducted in regard to EU government policy, it is important during the design phase to look at the ethical principles from a European context. The European Commission provides a robust description of what research ethics encompass, stating that ''research ethics also encompass the wider social responsibility of researchers to ensure that scientific and technological development benefits society" (European Commission, 2023). Moe et al. (2024) further define research ethics as "the moral

principles – including values, norms, and institutional requirements – that govern the conduct of research'' (Moe, Uhrenfeldt et al., 2024).

Consent

Interviews were conducted on a voluntary basis with fully informed consent obtained prior to commencement of each interview. A detailed explanation was provided as to the aims of this research, the voluntary nature of their involvement was stated, as was their right as a participant to withdraw from the study at any time without penalty. A copy of the information sheet and consent form are available in Appendixes 2 and 3.

Confidentiality and Anonymity

Data collected throughout this research remained fully confidential, with no identifying data collected. Furthermore, participants were assured that any publications with regards to this research would yield no identifiable features.

Data Security

All data collected via Microsoft Teams and Apple iPhone Voice Memos was stored on password protected electronic devices further backed up in encrypted cloud storage platforms. Only the author has access to this data and if requested authorised college personnel of the National College of Ireland only.

Ethical Approval

This research project was approved by the faculty at the National College of Ireland. All procedures related to this research were carried out in accordance with the National College of Irelands guidelines and standards.

In conclusion this section provides an in-depth overview of all ethical considerations that were considered by the author to conduct qualitative research, demonstrating the authors full commitment to upholding ethical standards.

Findings & Analysis

The research identified six themes, consisting of moral duty, regulatory mandates, economic strategy, internal challenges, regulatory challenges, and external challenges.

Theme 1 - Moral Duty

Throughout the interview process all participants agreed that the reasons for introducing the EU 2030 climate initiatives were valid, and that their intended purpose to reduce carbon emissions is genuine. All participants cited that this is the right thing to do, and many noted that they try to live 'sustainable' lives outside of the workplace, noting activities such as plastic recycling, cycling to work, taking less flights, and using solar energy to power their homes. Noted by participant two, who highlighted that their own CEO feels that "this is the right thing to do, regardless of what the EU says, regardless of what the UN says, regardless of what our customers say, this is something that we as a socially responsible company feel is the right thing to do. We burn diesel, we deliver goods. But we can do it in a more tempered way, and we need everybody's help to find ways to get that done."

Further, participant four commented that "the primary rationale is saving the planet, as cliche as it does sound. Climate change is very, very real. And if we don't look across all sectors and all industries and really start making big changes, we are looking at quite a disastrous environmental situation. So, I do think there's that as the very real motivation." Both comments would indicate that despite the regulatory requirements from EU and national governments, stakeholders across the industry agree that taking more sustainable action is indeed the correct course of action, regardless of other possible factors.

Theme 2 - Regulatory Mandates

The second reason noted that the enforced nature of the initiative's left organisations with no choice but to comply with said regulations. Mandated by the European Commission and enforced by national governments, organisations are

required to meet specific regulatory requirements and provide regular, detailed reports through CSRD. As noted by participant four, “compliance first and foremost is the fastest way to get businesses to do what they need to do…but if that's the change that needs to be made then that's the easiest and fastest way to do it.” That being said, there is a concern that we will fall short of the stated targets, despite the best intentions of the regulations. When asked if they believed that the initiative will successfully address the core challenges that they're intended for, participant one commented “if the intention is to bring down CO2 emissions and thereby reduce climate change, then yes, because that is what we are primarily working on. But I'm not sure of the magnitude and how much we are able to deliver at that time is as high as we would have wished for or could have been planned for, but definitely there will be impacts of it.” This brings us back to Verdugo’s claim that negative emotional states can increase consumers’ desires to make sustainable choices, and would highlight the potential reasoning of the European Commission by implementing strict regulatory mandates to achieve stakeholder buy-in.

Theme 3 - Economic Strategy

Further to the moral and regulatory reasons for implementation, consumer pressure is increasing in an ever-changing world, forcing organisations with high public brand awareness to become more climate focused. In turn, these organisations look downstream to their primary suppliers to act in a likewise sustainable manner. Many suppliers in this position feel compelled to comply as a means of firstly maintaining business and secondly using this as a strategic tool to win additional business. In this sense, the willingness to implement sustainable practices comes from a commercial angle rather than a moral standpoint. Participant one noted that they try to build emissions reductions as a value add into their business cases. In the same interview, participant one also noted that “there are two or maybe more different kinds of industry players that has it high on the agenda that will definitely see a value, because they will be able to attract and maintain customers based on this profile and they will continue to drive.”

This sentiment is also echoed by participant five, who noted that “every multinational corporate, every industry from Pharma to agriculture, go to their website and they have a sustainability page, they have a sustainability officer, it's all geared towards that you now have your Ecovadis requirements, your emissions reporting requirements both for large and small, medium-sized enterprises. I think everyone will realise that it's worthwhile. Even those who are slightly negative on it will realise that it's worthwhile because if you're not in the gang, so to speak, you're going to get left behind.”

Participant two coined the phrase “carbon poor transportation services” to describe current methods of transport and highlighted that sustainable transport solutions can “create quite a stir in the marketing world” and help to “carve out a commercial niche.” In the same discussion, it was noted that “in the long-term companies with an ESG aligned board tend to do better, have better returns over 10 years and more when you compare short term funds, though that's inverted. So, if you are looking for long term shareholder value this is a good way to go.”

As with most new initiatives, the intentions are good and the will to implement better processes is strong amongst stakeholders. However, many organisations also see a financial benefit from being first adopters, with many larger organisations capitalising on the greater demand from consumers and brands alike.

Theme 4 - Internal challenges

One of the first challenges highlighted related to the high cost of implementation. In this sense there appears to be a misalignment between meeting the regulations and doing so cost effectively. Noted by participant one, “there is still an issue with the increased cost that customers are not willing to pay for. So of course, it is difficult to make a business case that actually makes sense when you don't have the customer buy in. But still, it's manageable in a way, but the challenge is much bigger in terms of the cost of making that change and also being very much dependent on the whole infrastructure side.” Further cost implications can be seen in additional surcharges brought about by the new legislation, as highlighted by participant two. “The retail

price has gone up much faster than the actual market price because the fuel suppliers are putting on a mandate surcharge. They're mandated to deliver it, and we're mandated to take it." While this is not price gouging, it does bear the question as to whether sufficient consideration was given to the possibility of rising costs brought about by the introduced policies. Similarly, the higher cost can have wider implications for smaller operators, such as owner-operator hauliers. Transitioning to alternative fuelled vehicles requires investment, and smaller companies may find it difficult to justify a capital investment in such equipment and therefore could find themselves being left behind or potentially squeezed out of their markets by larger companies with higher capital resources. Participant three noted "there are larger companies there who can afford to make decisions like buying an electric truck as a trial or as a publicity measure, whereas maybe the licence holder sector doesn't necessarily have the capital to make decisions like that, so they're probably going to be a little bit slower to move to zero emission vehicles."

While there are a number of financial supports available, several participants mentioned the difficulty in making solid business cases for sustainability initiatives, noting that the value of implementing sustainable practises is hard to measure. Many larger organisations have introduced sustainability practices by way of ESG strategies. Such actions come at additional cost, be it resourcing at employee level, at consultancy level, and on an administrative level. Each organisation will look at the value differently, and each will expect a return on investment, however how these are gauged will be different from company to company. Some will see value and ROI as customer retention, others may see it as doing their part in lowering carbon emissions. Participant one noted that if they wanted their company to be "a high valued supplier to our customers within the next years we need to have climate change as part of our strategy." In the same discussion, participant one also noted that they "are trying to put in CO2 emissions and reductions of CO2 as part of the value that you can generate via business case", meaning that CO2 reduction strategy is becoming more a part of their business strategy rather than a pure bolt-on activity. This type of endeavour will be especially important for smaller businesses

who cannot afford to lose customers and may see value and ROI as retaining key portions of their business activities.

Theme 5 - Regulatory challenges

While we have spoken about the added cost of implementation, another area highlighted is the lack of short-term financial incentive for establishing sustainability initiatives. Noted earlier in this section that companies with ESG strategies tend to do better in the long-term, initial capital expenditure investments and difficulties in measuring ROI can put a severe strain on companies during the early stages of development. Surcharges introduced to help compensate for the added costs are often treated as a pass-through cost without any benefit to the bottom line. During the discussion, participant two noted that "there are the studies that say companies that have an ESG aligned policy seem to do better over the long term. That's hard to put a finger on that you'd never be able to pinpoint it on environmentalism or not, but still an ESG aligned policy seems to reward us. But there is no financial incentive to do this. It is mandated, it is mandatory and we're all going to pay the price in the end with a standard of living drop, perhaps less disposable income."

Also noted during the discussion process was the ambitiousness of the targets in place, however this was also caveated in certain cases by restrictions in terms of policy and technology limitations. Noted by participant three, "in general the proposals that come out of the Commission are pretty good. I think there's good ambition there, but a lot of the times, the final positions tend to be quite diluted. By the time we get to a final agreed position, it can be quite difficult to get anything through. I mean, if we take a look at something like the weights and dimensions directive where there's a push to try and give an extra 2 tonnes for zero emission vehicles, it should be simple enough, but it's a very difficult position to get through." Similarly, participant four noted "as a whole at the European level, the policies are ambitious. They're enough to get us to where we want to be, but it's a matter of actually seeing the action behind seeing the uptake." Both comments highlight a difficulty in implementing actionable policy which could prove restrictive.

Technology and infrastructure limitations were also highlighted throughout the discussions, participant four commenting “the policies are ambitious, the targets are ambitious, but there's a lot of it that seems to be out of our control in terms of waiting for technology to close the gap.” In response to a question around whether we would reach our energy targets, participant two commented “as it stands now, we don't have the fuels, we don't have the technology, we don't have the energy grids, in my opinion, to reach the goals as they now stand.” Again, these comments highlight a potentially fundamental gap in the structure needed to achieve the 2030 targets and bears further consideration later in the research.

Another fundamental issue through the legislation that was introduced brought with it highly detailed reporting mechanisms through the corporate sustainability reporting directive. Highlighting that the CSRD was “putting undue burdens on small business” through “asking for thousands of data points in these reporting packs”, participant two also notes that “we have the EU legislation, which means there is or was political will to pass these types of mandates, but the execution is lacking.” This would indicate that the legislation is unnecessarily cumbersome and out of touch with the realities being faced by operators within the sector, particularly small businesses.

Theme 6 - External challenges

Other challenges which are more difficult to manage come via geopolitical issues, such as the Ukraine war. Crises such as these cannot generally be factored when introducing legislation surrounding climate action but nonetheless have a hugely significant bearing. Oil stocks tend to decrease, seeing prices rise, therefore placing additional strain on supply chains and alternative fuels which may not be as readily available, all of which puts smaller businesses at risk due to increasing operating costs.

Similarly, changing political landscapes are becoming an increasing factor in climate action, highlighted by several participants. Concerns were raised by participant three in relation to the initiatives being dialled back over time, due to “some of the

governments are shifting more towards governments who are more climate sceptic than what was in place when these measures were enacted. So, when they're coming up for review in a few years, I'm not necessarily sure that the support that was there at the time will still be there in a couple of years." Echoed by participant five, stating that "if we get a situation whereby, we have conservative / right wing powers coming into play across Europe, such as Turkey, Hungary, Italy, if that trend was to continue and again in the States, then I think that would be a big issue. If you had a splintering of the EU, everything would be up in the air. So, there are financial implications, obstacles as such, I think the geopolitical one is the bigger." Both viewpoints would indicate that the ever-changing political landscapes are increasingly important in relation to climate action, more than could have been envisioned at the outset, and will need to be managed carefully in the next number of years.

Discussion

There are many considerations when assessing the EU 2030 Climate Targets and their impact on the wider freight industry. Accepting the consensus that action was and still is required to tackle the increasing levels of climate change, it is reasonable to question whether the initiatives set out were too ambitious to achieve. One the other hand, it is also fair to ask if the targets were ambitious enough considering the current state of affairs across the globe. Participants 3 and 4 both highlighted the level of ambition within the initiatives, with participant 4, in particular, noting that the policies are “enough to get us to where we want to be”. This comment would indicate that the level of ambition was deemed appropriate. In contrast, noting that the transport sector’s emission levels have increased faster than any other end-use sector since 2010 (IPCC, 2022), it can be argued that the targets were in fact too ambitious. This argument is further backed up by the European Federation for Transport and Environment (2024), who claim that transport decreases in decarbonisation approx. three times slower than other sectors in the economy, while the EEA also highlights that total GHG’s decreased by 32.51% between 1990 and 2022, well behind the stated aims of 80-95% by 2050 (European Environment Agency, 2024)

A more suitable method could have seen more focus placed on achieving singular targets, such as CO2 emission reductions, and build incrementally over time rather than attempting to tackle everything at once. But would this course of action have been sufficient to adequately tackle the current climate change difficulties and do so in a satisfactory timeframe? In attempting to answer this question, let’s consider what constitutes success. Government legislation would say that meeting the desired targets is success, others might say that incremental improvements led by a more holistic desire to improve the overall situation would be a more successful outcome. There are two schools of thought when assessing this debate. Firstly, lets assess the legislative question.

When introducing these initiatives, the European Commission implemented a number of stringent reporting standards, designed to ensure greater transparency around organisations' efforts and results, but in many cases required a high level of detail. The meticulous nature of these reports placed significant strain on organisations, with strong grounds that the level of reporting required placed unnecessary financial burdens and risk on small businesses. In view of the ever-increasing public awareness of climate change, many well-known brands are placing more and more emphasis on working with climate positive suppliers. As a result, the additional financial strain in terms of having to implement a sustainability strategy and comply with highly complex reporting standards has left many smaller companies unable to invest sufficiently in sustainable practises, therefore losing out on business opportunities to larger, more established firms with more capital available to invest. This financial strain also means smaller companies are likely to take significantly longer to transition to zero emission vehicles and subsequently are less likely to achieve the targets in the timeframe required. In this sense, there is a case to be made that the regulations are too aggressive with insufficient resourcing to support the transition, which was also noted by participant two during the research discussion.

Developing this concern further, it is worth considering if sufficient considerations were given to the burdens being placed on small businesses, and if stronger financial supports could be employed to assist companies. During the research discussions, participant 3, who is an Irish government employee, believes that there is sufficient support available, citing the AFHDV Purchase Grant Scheme introduced in 2021 as well as support for implementing electric charging infrastructure into depots, noting that further incentives are available by way of a voucher which companies can use to hire consultants as well as tax exemptions for renewable fuels. Despite the supports available, the question remains if greater benefits could be afforded to companies who are trying to be climate positive, such as solar energy payments being made to companies that generate surplus electricity that could be used in the national grid rather than charging them, as is current practice in the Netherlands. Participant 3 did note that they would like to see the level of funding increase while also noting that

schemes such as reduced road tolling for zero emissions vehicles could be introduced as a further incentive. Additional regard must go to whether these structures have been introduced quickly enough to make a real difference in meeting the stated targets.

Further to the financial support question, concerns around the readiness of infrastructure to meet the targets continue. Supports around lower tax incentives for alternative fuels was highlighted earlier, but are these sufficient and are there enough alternative fuels available at the right cost to implement the changes needed? Participant 3 noted during the research discussion that diesel is still cheaper than alternative fuels due to the diesel rebate scheme, which contradicts the purpose of the climate positive initiatives and disincentivises transition away from fossil fuels, especially for smaller companies. Another area of concern relates to the availability of electricity charging points. Both participant 1 and participant 2 highlighted perceived shortcomings in this regard, noting that the energy grid levels are not compatible with the desired targets. This sentiment is backed up by the limitations seen in Ireland, where the country's first electric lorry charging point was opened in August 2024 just.

On the other side of the coin, it is worth considering whether the mandatory nature of the legislation removed the moral compulsion to act and if this could have been handled differently. There is an argument to be made that the rollout could have been more of a collaborative effort rather than top-down enforcement, and as part of this governments could have worked more closely with industry representative bodies to achieve better results. Such bodies like the FTAI would argue that the introduction by government of initiatives similar to their 'TruckSafe' scheme would encourage hauliers to employ better fuel management practices, increase their use of HVO and alternative fuels, and purchase newer Euro VI vehicles. There is an argument that a more holistic approach would yield stronger results, but there is also a question as to whether this approach would be too slow to impact positively on current crises and may have led to a more laissez-faire attitude with no real tangible results. This is a difficult question to answer as there are valid arguments for

both sides. In the research discussion, participant 1 noted that results would be slower without government enforcement while participant 4 was very much of the opinion that an easing of regulatory pressure would result in missing the targets. While the sentiment is valid, and it is reasonable to assume that less stringent policing would mean less active participation, it is debunked slightly by the fact that many countries are due to miss the targets regardless.

This leads us to further questions of if we fail to achieve the target numbers can the actions introduced to date still be considered a success, and how do we ensure that the same issues don't occur in future, preventing us from reaching the 2040 and 2050 goals? It was noted by participant 3 that missing targets will result in greater ambition to meet subsequent targets. However, is this the correct approach to take? Taking the first question, it is a reasonable deduction that the initiatives have been successful, not necessarily in numbers, but in the sense that it has brought about a structure for achieving positive results further down the line. An argument can be made that achieving results in a more sustainable manner, rather than focusing on time definite targets, is better for the long-term economic health of the industry. There is a risk that forcing greater ambition to achieve subsequent targets would result in the primary focus being just on reducing emissions and therefore ignore greater efficiencies, which can be argued would bring greater value to companies and the wider industry. This strategy also poses a risk that the only perceived value for organisations would be from a commercial perspective, which in its own right could be a positive in helping to bring the requirements more to the fore. Making climate positivity a focal part of a company's commercial and corporate strategy will force organisations to take climate action more seriously; however, these is also a danger that climate action will only ever be seen as a bolt-on rather than a key part of their corporate strategy for many organisations.

From a government viewpoint there are also inherent risks with missing the desired targets, Ireland in particular due to be heavily penalised up to €26bn for their probable failure through the purchase of carbon credits from countries who do manage to reach their goals. All of which raises the question of could the Irish

government have negotiated more favourable targets, and if so, why would they not have done so? During the research discussion, participant 4 noted that such actions were likely taken with good intentions despite not reaching the 2020 targets, which would lead to speculation that the Irish government at the time may have been more worried about being out of line with the EU proposals rather than attempting to mitigate potential penalties. This point is not something that will be answered in this research due to a lack of detailed knowledge around the negotiations. What can be assumed however, is that this does have an impact from an Irish climate action perspective and an EU perspective. There is an argument that the Irish policy was more focused towards passenger transport rather than freight transport, which further begs the question as to whether enough is being done in the Irish freight sector from a legislative perspective. One such area previously highlighted by the research is the lack of multimodal combinations available in the Irish freight industry. The relatively small geography and fragmented nature of the freight industry within Ireland makes this a complicated matter to address, but it is a fair assumption that more could be achieved in this area.

External factors, such as geo-political tensions, also impact negatively on the ability to meet climate positive targets. Finding a means to mitigate such factors is highly complicated and, while highlighted, will not be answered in this research due to the complex nature of the challenge. Another shift currently in the political landscape is a move towards more climate-sceptic governments being appointed across Europe, which is likely to result in negative connotations for the EU climate targets. This could be through a scaling down of the legislation and target figures, with a high degree of danger that all of the good work up to this point could be lost.

The research has discussed what constitutes real success when assessing the EU 2030 Climate Targets. Real success would be measured by a shift in culture and not just in numbers. The figures are an important element and provide clarity around the targets, however the research has shown that the goals may have been unrealistic to begin with. From a strategic point of view there is an argument that aiming high and missing results in failing high. The research has shown that most stakeholders within

the freight industry believe that implementing positive sustainable practices is the right way forward and that the regulations imposed were done so with good intentions.

Within this, the research believes that insufficient consideration was given to smaller businesses. The reporting standards were too cumbersome, and since this research began a revision of the reporting requirements has been implemented through the European Commission's Omnibus Package (2025). This reform will see a change to the level of detail required, with no new data points being added to the European Sustainability Reporting Standards (ESRS) and any data points that are currently voluntary will not be made mandatory. All in all, this is a positive development and will allow for greater focus on strategically important information which can be used in the further development of sustainability initiatives. There is a concern that this relaxing of the reporting standards could lead to a relaxation by organisations, however the pressure being exerted from consumers and brands will likely more than make up for this.

Recommendations

Despite the broad range within the research sample, additional research with a larger sample size would be required to fully explore all aspects of the topic. Due to the small sample size that participated and the lack of participants from freight representative bodies, the research leaned more towards commercial aspects. The author feels that the participation of representative bodies would have provided a further perspective.

Throughout this research it became clear that there is little current research with regards to the freight industry. The author proposes that further research should take place on two fronts. Firstly, the theme of sustainability within the freight industry is an important consideration for future climate change progress. Secondly, the role of freight transport within wider society and a perceived apathy towards this industry should be further explored. Sustainability research and transparency around the many positive initiatives being undertaken could help show the freight industry in a more positive light.

Conclusion

Considering the importance of the industry to both the Irish and EU economies, greater considerations need to be given to the freight sector. There is also a strong belief from the research that improving alignment with freight representative bodies that have a shared vision will enhance stakeholder buy-in and yield better results.

There are several areas where improvements can be made, one example of which can be taken from the more recent COVID-19 pandemic. During this period, only certain types of cargo, as denoted by their HS codes, were allowed to travel by air. Introducing similar initiatives would reduce the need for air travel and help alleviate emissions in the air freight sector.

Similarly, allowing zero emissions vehicles to carry additional payloads would further reduce the number HGVs on our roads, gaining greater efficiencies in the meantime. Greater utilisation of lesser used modes such as rail and providing better links to ports would result in significant gains, both in operational performance and sustainability payoffs.

The climate change crisis is a real and pressing concern, with huge complexities apparent across many areas, including political, operational and commercial standpoints. Crucially, the most pressing consideration in the entire scenario is culturally, where mindsets must change for the world to see real and tangible results. In an ever-changing world, finding a balance between aspirations and real-life to accomplish this cultural shift is a challenge that everyone must face.

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Appendix 1 – Interview Questions

1. **In your opinion, what is the primary rationale for implementing climate-positive practices?**
    - Do you perceive this to be driven more by compliance, social responsibility, or strategic opportunity?
    - How would you prioritise environmental impact versus organisational benefit?
2. **Are you or members of your team personally engaged in any climate-positive behaviours or initiatives outside of work?**
    - Could you provide examples of individual or collective efforts?
    - Do you believe personal involvement influences workplace attitudes toward climate action?
3. **How would you describe the level of support for climate-positive practices within your own organisation?**
    - Is there strong leadership endorsement and employee engagement?
    - Are there internal structures or communication strategies supporting implementation?
4. **What are your overall impressions of the climate initiatives currently being proposed within the European freight sector?**
    - Are there specific aspects you find particularly promising or problematic?
    - To what extent do these initiatives align with your organisation's strategy or values?
5. **What, in your view, is the envisioned long-term outcome of these climate initiatives?**
    - What does successful implementation look like to you?
    - How do you see these efforts evolving over time?

6. **Do you believe stakeholders across the wider freight industry consider these initiatives worthwhile?**
    - Are there identifiable differences in engagement among stakeholder groups?
    - What factors contribute to higher or lower levels of perceived value?
7. **What are your views on the adequacy of existing support mechanisms (e.g. financial incentives, policy frameworks, regulatory guidance)?**
    - Have these supports been effective in your experience?
    - Where do you see gaps or areas for improvement?
8. **How do you perceive the return on investment for stakeholders engaging in climate-positive initiatives?**
    - Do you view the ROI as primarily economic, environmental, or reputational?
    - What time frame is considered reasonable to expect tangible outcomes?
9. **Do you believe these initiatives will successfully address the core challenges they are intended to resolve?**
    - Are there concerns regarding the scope or impact of the proposed actions?
    - What indicators would demonstrate success in your opinion?
10. **What do you perceive as the most significant obstacles to the successful implementation of these initiatives?**
    - Are these challenges more likely to be internal (e.g. resources, culture) or external (e.g. policy, market conditions)?
    - What measures would help mitigate these barriers?
11. **Do you consider Ireland's climate targets to be materially different from those of the EU? If so, in what ways?**

- How could any perceived differences potentially impact on the successful implementation of said targets?
- Do these differences present opportunities or challenges?

Closing Question

- Is there anything else you would like to add regarding climate initiatives or your organisation's sustainability strategy?

Appendix 2 – Consent Form

Consent to take part in research

- I.....voluntarily agree to participate in this research study.
- I understand that even if I agree to participate now, I can withdraw at any time or refuse to answer any question without any consequences of any kind.
- I understand that I can withdraw permission to use data from my interview within two weeks after the interview, in which case the material will be deleted.
- I have had the purpose and nature of the study explained to me in writing and I have had the opportunity to ask questions about the study.
- I understand that participation involves taking part in a semi-structured interview with an expected duration of no longer than 40 minutes.
- I understand that I will not benefit directly from participating in this research.
- I agree to my interview being audio-recorded.
- I understand that all information I provide for this study will be treated confidentially.
- I understand that in any report on the results of this research my identity will remain anonymous. This will be done by changing my name and disguising any details of my interview which may reveal my identity or the identity of people I speak about.
- I understand that disguised extracts from my interview may be quoted in the researcher's dissertation.
- I understand that if I inform the researcher that I or someone else is at risk of harm, they may have to report this to the relevant authorities - they will discuss this with me first but may be required to report with or without my permission.
- I understand that signed consent forms and original audio recordings will be retained in a secure external hard drive that can only be accessed by the researcher until after the researcher's degree has been conferred.
- I understand that a transcript of my interview in which all identifying

information has been removed will be retained for a period of two years after the researcher's degree has been conferred.

- I understand that under freedom of information legalisation I am entitled to access the information I have provided at any time while it is in storage as specified above.
- I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

Primary researcher for undergraduate dissertation: Alan Egan

School of Business

National College of Ireland

Email: x23219980@student.ncirl.ie

Signature of research participant

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Signature of participant Date

Signature of researcher

I believe the participant is giving informed consent to participate in this study

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Signature of researcher Date

Appendix 3 – Information Sheet

I would like to invite you to take part in a research study. Before you decide you need to understand why the research is being done and what it would involve for you. Please take time to read the following information carefully. Ask questions if anything you read is not clear or if you would like more information. Take time to decide whether or not to take part.

WHO I AM AND WHAT THIS STUDY IS ABOUT

My name is Alan Egan, and I am carrying out this study as part of a Level 9 MBA Dissertation.

This study aims to assess the European Union's 2030 Climate Target Plan from an Irish perspective, with a particular focus on evaluating the preparedness of the Irish freight sector to meet the objectives outlined in the plan.

WHAT WILL TAKING PART INVOLVE?

Involvement in the research will include an interview with an expected duration of approx. 40 minutes. Outlined below is a non-exhaustive list of some of the topics which will be discussed.

- Overall impressions of the climate initiatives currently being proposed within the freight sector.
- Rationale for implementing climate-positive practices.
- Envisioned long-term outcome of these climate initiatives.
- Existing support mechanisms.
- Obstacles to the successful implementation of these initiatives

Interviews can take place either in person or via Microsoft Teams. All interviews will be recorded and retained in a secure external hard drive that can only be accessed by the researcher until after the researcher’s degree has been conferred. A transcript of my interview in which all identifying information has been removed will be retained for a period of two years after the researcher’s degree has been conferred.

WHY HAVE YOU BEEN INVITED TO TAKE PART?

You have been selected to take part due to your role as….

DO YOU HAVE TO TAKE PART?

Participation in the research is completely voluntary, and you have the right to refuse participation, refuse any question and withdraw at any time without any consequence whatsoever.

WHAT ARE THE POSSIBLE RISKS AND BENEFITS OF TAKING PART?

At this stage, my research plans are limited to the submission of my dissertation and are not intended for further publication thereafter.

WILL TAKING PART BE CONFIDENTIAL?

All information included I the research will be fully anonymised and the names of the research participants nor any names mentioned as part of the interview process will be included. Non-anonymised data in the form of signed consent forms and audio recordings will be collected and retained as part of the research process.

HOW WILL INFORMATION YOU PROVIDE BE RECORDED, STORED AND PROTECTED?

Signed consent forms and original audio recordings will be retained in a secure external hard drive that can only be accessed by the researcher until after my degree has been conferred. A transcript of interviews in which all identifying information has been removed will be retained for a further two years after this. Under freedom of information legalisation you are entitled to access the information you have provided at any time.

WHAT WILL HAPPEN TO THE RESULTS OF THE STUDY?

At this point, the sole focus of my research activities is centered around the submission of my dissertation.

WHO SHOULD YOU CONTACT FOR FURTHER INFORMATION?

Primary researcher for undergraduate dissertation: Alan Egan
School of Business
National College of Ireland
Email: x23219980@student.ncirl.ie

THANK YOU

Appendix 4 – Sample coding

Participant 2

Researcher 0:05
And so firstly then, what are your overall impressions then of the climate initiatives that are being proposed in the European freight sector?

Participant 2 0:30
Well, I guess I have a lot to say about that. So I take a very pan European look at things being involved with a network from Finland to Portugal and Ireland to Poland. What I feel right now is that initiatives taken from, say, from a European level. Let's split this into legislation and initiatives legislation. There's more than enough of that, but there's very little initiative taken by them to supply us, for instance, transporters with the amount of.
HVO, Sustainable Air fuel and I'll say electric charging stations for freight trucks at this point. If you're talking about the EU level, I think, and I believe that the soft market for sustainable air fuel SAF is showing a surge in costs because of a mandate that came much too soon ahead of supply. I have some articles I could send you if you'd like that.

Researcher 1:45
Yeah, that'd be perfect. Yeah.

Participant 2 1:46
The mandate that started the beginning of this year to mix 2% of sustainable air fuel into European aviation, great and dandy, I've said legislation is all good and dandy, but I don't think people well, I don't think that the data shows it's not a matter of me thinking the data shows.
That the price has increased much faster than sorry. The retail price to me and my aircraft has gone up much faster than the actual market price because the fuel suppliers are putting on a mandate surcharge. They're mandated to deliver it. And we're mandated to take it. So what does that leave supply chain price abuse really fast. So we can't get out of it. We have to have it. So now we get a surcharge to have that delivered to us where if we'd gone through a normal market instrument, you know, we'd be demanding it from our suppliers and they'd provide it and they'd sell it to us at a competitive market rate, but now because we're forced

to take it and the supply and the infrastructure is not there to distribute it.

We get an extra surcharge on top of the extra cost of the 2% soft mix. So you've got your mandated and then you've got your surcharge from suppliers. So it's maybe I should put that the other way around the cost of the soft is this.

Then the surcharge comes on top of that from the supplier of the of the soft that that hurts aviation margins.

Participant 1

Researcher 0:03

In terms of the climate initiatives, what are your overall impressions of the climate initiatives that are being proposed within the European freight sector?

Participant 1 0:21

I think the euro, my overall opinion, is that what is being proposed is good and I think there is a lot of encouragement for the industry to move towards decarbonisation. But at the same time, it's also.It's not handling the cost of it that well. Of course, being in our business we are both shipping and logistics and we are transferring. You can say we are we are going towards decarbonisation on the roadside with the EVs, the we have all the electric trucks out and running.

Researcher 0:51

Yeah.

Participant 1 1:02

Which is OK, it's still there is still an issue with the increased cost that customers are not willing to pay for. So of course it is difficult to make a business case that actually makes sense when you don't have the customer buy in. But still it's manageable in a way, but it's definitely on the vessel side that the challenge is much bigger in terms of the cost of making that change and also being very much depending on the whole infrastructure side. So one thing is to deliver vessels, but at the same time also making sure that the fuels are available in the right ports and all that. So it's a big task. So even though the governments are supporting and trying to push.

Researcher 1:46

Yeah.

Participant 1 1:51

The industry, there's still a lot to do and it's not easy just to do one day. Yeah. From one day to another.