THE EU ETS AND CARBON MARKET:

SUCCESS OR FAILURE

AND

SHOULD MALTA PARTICIPATE IN THIS MARKET

By

John Liam Scolaro

A dissertation in the Faculty of Economics, Managements and Accountancy
submitted in partial fulfilment of the requirements of the
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Statement of Authenticity

I, John Liam Scolaro, declare that all the statements and material contained in this dissertation titled ‘The EU ETS and Carbon Market: A Success or Failure and should Malta participate in this market’ are entirely founded on my own personal knowledge and research. Any parts of the dissertation that are not the result of my own work have been acknowledged accordingly, where quotations and work published by others is clearly stated with a source given.

_____________________
John Liam Scolaro
446986(M)
Abstract

For the past 150 years, society has been responsible for causing global warming by polluting the world’s atmosphere with greenhouse gas emissions than any other known time period. As of a result, this brought forth the International Climate Change Legislation of 1997, better known as the Kyoto Protocol; a legally binding agreement to reduce emissions by 80% to 90% below 1990 levels by 2050, and later in 2005 the establishment of the first largest carbon market under the EU ETS policy.

Since its inauguration, the EU ETS and carbon market have been under constant debate between those who support its initiative and consider it as the solution against climate change and those who claim it to be a failure of green economy and that another course of action should be sought, such as, taxation.

The purpose of this research is to determine if the EU ETS and carbon market are the appropriate method of tackling climate change and whether Malta should participate in this market and possibly profit from it in the future, thereby, further enhancing itself as the Financial Centre of the Mediterranean.

To achieve the aims of the study, a Qualitative approach was conducted using Grounded Theory and an Interview approach, where some of the answers sought in the latter were based on the context of the study and literature whilst conceding the interviewee the freedom to expand and discuss openly. The general findings have demonstrated similar views concurring on a general good perception of the EU ETS and carbon market, accordingly erasing any doubts that scientists, economists and many more have confuted and hence corroborating it to be a great opportunity for Malta’s financial role.
However, there is still a need for development and growth in order for Malta to be fully equipped and ready to provide a service in the carbon market for which recommendations constitute propositions necessary towards stepping stones to a hopefully prosperous future. Notwithstanding, a lot more research is required to gain more insight and knowledge on this new market.
To all of you who believed in me

and supported me
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To the interviewees who committed their time to answer my questions and especially for the interest they showed during my research,

And finally my friends and family for their support, encouragement and endless patience, especially mum and dad.
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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>CDM</td>
<td>Clean Development Mechanisms</td>
</tr>
<tr>
<td>CER</td>
<td>Certified Emission Reductions</td>
</tr>
<tr>
<td>CO$_2$</td>
<td>Carbon Dioxide</td>
</tr>
<tr>
<td>ERU</td>
<td>Emission Reduction Units</td>
</tr>
<tr>
<td>ETS</td>
<td>Emissions Trading Scheme</td>
</tr>
<tr>
<td>EU ETS</td>
<td>European Union Emissions Trading Scheme</td>
</tr>
<tr>
<td>EUA</td>
<td>European Union Allowance</td>
</tr>
<tr>
<td>FIAU</td>
<td>Financial Intelligence Analysis Unit</td>
</tr>
<tr>
<td>GHG</td>
<td>Greenhouse Gas emissions</td>
</tr>
<tr>
<td>IETA</td>
<td>International Emission Trading Association</td>
</tr>
<tr>
<td>IPCC</td>
<td>Intergovernmental Panel on Climate Change</td>
</tr>
<tr>
<td>JI</td>
<td>Joint Implementation</td>
</tr>
<tr>
<td>KYL</td>
<td>Know-Your-Client</td>
</tr>
<tr>
<td>MFSA</td>
<td>Malta Finance Services Authority</td>
</tr>
<tr>
<td>MRA</td>
<td>Malta Resources Authority</td>
</tr>
<tr>
<td>N$_2$O</td>
<td>Nitrous Oxide</td>
</tr>
</tbody>
</table>
Chapter 1: Introduction

An Introduction to the EU ETS and Malta’s stance in regard to the EU ETS and Carbon Market
1.1 Why choose this Study?

The carbon market has been described by many institutions as the solution for climate change however journalists and bloggers have provided us with a much different view where the Guardian in 2011 wrote ‘Is it time to overhaul Europe’s carbon trading scheme?’(Ben Schiller, 2011) and REDD in 2013 with the article ‘The EU Emissions Trading Scheme has failed: “Time to scrap the ETS”’ (Redd-monitor.org, 2013). Therefore this research aims at identifying whether the EU ETS along with the carbon market is truly the ‘cornerstone of the Europeans Union’s drive against man-made greenhouse gases’ (European Commission, 2014) or whether it is all but an illusion and a ‘failure of green economy’ (Carbon Trade Watch, 2013). As a result, I hope to obtain a conclusion that will aid me to determine whether the carbon market is indeed an appropriate solution for combating climate change and whether there is a possible new future market. Moreover, the results which I hope to obtain from this research will enable me to gauge whether Malta could and should take part in this market.

The study is of interest since it would bring a new market to our financial sector especially when considering that in 2013, ‘9.2 billion emission units had been traded” (Thomson Reuters, 2014). Therefore this study would not only be of interest to the financial sector, bringing new opportunities and possibly attracting new investment and firms as well as expanding our role as a financial centre/hub of the Mediterranean, but it would also be appealing to the Maltese government and general public with regards to a green prospering economy.
1.2 Background Information

1.2.1 EU ETS

The aim of the EU ETS is to reduce greenhouse gas emissions emitted by companies by means of markets instead of forcing regulation upon them such as taxation. The system is designed to ‘put a limit on overall emissions from high-emitting industry sectors which are reduced each year’ (European Commission, 2013) using what is known as the cap-and-trade approach whereby carbon is given a price and thus enables carbon to have a financial value to each tonne of emission that is saved and consequently allowing it to be traded. Accordingly, ‘companies can buy and sell emission allowances as needed’ (European Commission, 2013:1) also referred to as credits or EUA’s, from around the world and subsequently acting as a promotion for the investment of clean and low carbon technologies.

1.2.2 Where does Malta stand?

Malta until October 2010 was a non-Annex I Party meaning that it did not have an obligation towards the Annex B commitment of the Kyoto Protocol relating to the reduction of emissions. However, it was still participating and doing its part. In addition, Malta was allowed to make use of what is known as the Clean Development Mechanism (CDM). Where the CDM is a tool designed for countries who participate in the Kyoto Protocol Agreement, whereby they implement projects that in turn will reduce the emissions of developing countries, hence stimulating a sustainable development and emissions reduction. The results of which are awarded through CER’s which may be used by companies when surrendering their credits instead of using EUA’s.
However, after October 2010, Malta applied to become part of the Annex I Party, hence accepting the idea and commitment of reducing emissions and as a result this change brought new challenges. Such as no longer being able to host a CDM but rather only act as a sponsor and the ability to participate in Joint Implementation (JI) projects by investing and transferring technology to alternative countries under the Kyoto Protocol where the reduction of emissions is cheaper and thereby cooperating countries earn ERU’s for their efforts which again may be used when relinquishing credits.

Moreover, Malta has appointed the Malta Resources Authority (MRA) as the competent authority for the EU ETS, having already covered two installations that are the electricity generation plants in Marsa and Delimara as well as aviation. Also, since Malta’s entry in 2005, Malta has been able to save emissions through domestic action without requiring the need or use of international credits, referring to the CER’s and ERU’s, as stated by the Malta Resource Authority.

Lastly, Figure’s 1 and 2 (Malta Resource Authority, 2012) illustrated on the next two pages, show Malta’s allocation and emissions report with regard to Malta’s power plants where although Figure 1 shows that the Marsa Power Station was emitting more than it was being allocated, Delimara’s Power Station was more than capable to make up for the difference. And as for Figure 2, this time both the Marsa and Delimara power stations managed to keep under the required allocation.
Figure 1: Emission Savings for Phase 1 – Period 2005-2007

<table>
<thead>
<tr>
<th>Year</th>
<th>Marsa Power Station Allocation</th>
<th>Marsa Power Station Emissions</th>
<th>Delimara Power Station Allocation</th>
<th>Delimara Power Station Emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>1,124,985</td>
<td>1,159,927</td>
<td>960,617</td>
<td>811,331</td>
</tr>
<tr>
<td>2006</td>
<td>1,123,631</td>
<td>1,175,288</td>
<td>1,043,670</td>
<td>810,477</td>
</tr>
<tr>
<td>2007</td>
<td>1,122,278</td>
<td>1,213,460</td>
<td>1,163,294</td>
<td>813,904</td>
</tr>
</tbody>
</table>

Note: All reported emissions have been accounted for by surrendering of equivalent amount of allowances
Figure 2: Emission Savings for Phase 2 – Period 2008-2012

<table>
<thead>
<tr>
<th>Year</th>
<th>Marsa Power Station</th>
<th>Delimara Power Station</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Allocation</td>
<td>Emissions</td>
</tr>
<tr>
<td>2008</td>
<td>1,100,256</td>
<td>1,043,935</td>
</tr>
<tr>
<td>2009</td>
<td>1,095,617</td>
<td>961,727</td>
</tr>
<tr>
<td>2010</td>
<td>1,090,977</td>
<td>969,152</td>
</tr>
<tr>
<td>2011</td>
<td>1,086,338</td>
<td>1,015,594</td>
</tr>
<tr>
<td>2012</td>
<td>1,081,699</td>
<td>992,291</td>
</tr>
</tbody>
</table>

Note: All reported emissions have been accounted for by surrendering of equivalent amount of allowances.

Note that in both Phase 1 and Phase 2, the EU ETS was still using an old system known as the National Allocation Plan or in short NAP. This meant that every EU member state was setting what it considered to be an appropriate level of emissions allocation. This, however, was amended with the implementation of Phase 3 in order to eliminate excessive allocation and to prevent re-distribution of issued allowances by member states. Therefore as of 2013, the EU ETS introduced the new single EU-wide cap system, whereby Europe agreed on a single cap for all nations which subsequently has created competition among the member states.
1.3 Problem Statement

The EU ETS was first proposed in 2001 and it established the world's largest Carbon Market in 2005 using what is known as the cap-and-trade system with regards to emissions. However, since its operation the carbon market has been a victim of fraud and manipulation, as well as being seen as inefficient in Phase 1 and having showed some slight signs of market restoration in Phase 2. Yet, many consider the scheme to be a failure of green economy as well as a failure for combating climate change especially with the prices of carbon falling to roughly €5 per tonne as of 2014.

Also, to add insult to injury, the EU ETS since 2006 has been criticised by some top scientists and economists who have been stating that what we truly need is carbon taxation instead of an unjust and ineffective cap-and-trade system. This poses innumerable questions leading to the verity of whether the EU ETS and carbon market is a failure or just a victim of circumstances, where within the last decade the world as we know it has witnessed yet again another financial crisis that has damaged many markets credibility. This also gives rise to a dilemma, since as previously stated; one must primarily ascertain whether or not the carbon market is a success or failure. If deemed to be a success then this leads to another complication where we must now decide before it is too late whether or not Malta should take advantage of this new phenomena; ensuing the need to begin building an infrastructure and design that is ready for launch as soon as the market becomes fully operational. The result of which would put us in a favourable position to reap the initial benefits and enforce our position as the Financial Centre of the Mediterranean, granting us to stay ahead of the game and the competition.
1.4 Aims and Objectives

The study sets out the following main objectives, that is:

- To identify whether the EU ETS and carbon market has succeeded or failed in its mission,
- To assess if the carbon market is beneficial and whether Malta can take part, and
- To recognise its flaws, attributes and qualities as well as proposing a possible recommendation that would enable Malta to compete with other member states and enhance its status quo as the Mediterranean Financial Centre in the near future.

1.5 Chapter Outline

Following this introductory outline, the subsequent Chapter Two will give a further overview of the Kyoto Protocol as Europe’s solution towards the reduction of greenhouse gases. An overview on environmental and carbon market laws by referring to academic articles as well as discussing how failures have been addressed.

As for Chapter Three, this section will outline the research methodology applied for this study and complement Chapter Four by implementing detailed analysis obtained from interviews by field experts and players. And last of all, Chapter Five which will conclude the study by providing recommendations to the interested institutions and public.
Chapter 2: Literature Review

An overview of how the EU ETS came to be formed, regulated and its solution towards the carbon footprint
2.1 Why Kyoto Protocol?

Although Global Warming has been the debate of great political controversy for some years now, where some have even stated that global warming is a hoax and a conspiracy theory as when for example Congressman John Fleming, a Louisiana Republican tweeted on 2 January 2014 that “"Global warming" isn't so warm these days.” (Pierce Nahigyan, 2014)

As well as business tycoon Donald Trump back in 2010 saying that “With the coldest winter ever recorded, with snow setting record levels up and down the coast, the Nobel committee should take the Nobel Prize back from Al Gore”. (Brad Johnson, 2010) Still scientists keep confirming that global warming is not a hoax but it is real and it is happening confirmed by the recorded temperature readings taken over the past century and a half where in an article written by National Geographic they state that:

“Around the world, the Earth's average temperature has risen more than 1 degree Fahrenheit (0.8 degrees Celsius) over the last century and about twice that in parts of the Arctic”. (National Geographic, n.d)

As well as having said that:

“For a direct look at the atmosphere of the past, scientists drill cores through the Earth's polar ice sheets where tiny bubbles trapped in the gas are actually pieces of the Earth's past atmosphere, frozen in time. That's how we know that the concentrations of greenhouse gases since the industrial revolution are higher than they've been for hundreds of thousands of years”. (National Geographic, n.d)
Likewise, Intergovernmental Panel on Climate Change (IPCC) the leading international body for the assessment of climate change released a report in 2007 relating to climate change, where they also assessed the changes in climate by producing significant facts and observations with reference to sea level, snow cover and global surface changes, all contributing to the fact that global warming is real and it is here.

However, we are not here to talk about who's right and who's wrong and what conspiracy theories exist and what facts and observations have been assessed, but rather why and how the Kyoto Protocol came about, although it is important to note that the subject of global warming is what led to the creation of this legal binding document. Thus, this process started as early as 1992 by a strong international movement for action against global warming that was held at Rio de Janeiro where 184 countries signed the United Nations Framework Convention on Climate Change (UNFCCC) in order to fight and combat climate change and reduce greenhouse gases. However, although being established in 1994, this entity did little in convincing countries to reduce their emissions and therefore began a number of conferences which finally lead to the Kyoto Protocol agreement of 1997 in Kyoto, Japan, with the aim of enforcing and putting an obligation towards countries. Where also 1990 was established as the benchmark, meaning that countries would have to lower their emissions by a certain percentage of the emission levels produced in 1990.

Moving forward to a more recent time, referring back to the fourth assessment report issued in 2007 by the IPCC and the already operational EU ETS and carbon market, they additionally illustrated in Figure 3 the effects of what would happen to the world’s environment with the reduction of greenhouse gases as well as showing us the time taken in order for GHG’s to decrease from the atmosphere.
Where:

- Diagram A illustrates the effect of reducing carbon emissions that have a small limited lifetime in the atmosphere such as CO$_2$,
- Diagram B illustrating gases that last for 100 years and more such as Nitrous Oxide, N$_2$O, and
- Diagram C, for those gases that last approximately 10 years or so such as halocarbons.

Additionally the colours red, green, blue and light blue indicate what relative concentration we would have if gases were reduced by their respective number that is 10%, 30%, 50% or 100% whilst being compared to present day levels, noted as constant and shown in black. (Intergovernmental Panel on Climate Change, 2007)

**Figure 3: What if Carbon Emissions were reduced?**
2.2 Are member states in favour or not of the Kyoto Protocol?

When the Kyoto Protocol was first establish in 1997 with the aid of the UNFCCC, only a few countries had not signed this agreement. These countries included the Vatican City and Andorra however these two countries were not even asked to sign the agreement due to the small size of their nation having an approximate population total of 500 and 79,000 citizens respectively, where not even half of the 79,000 citizens are Andorran. Still both countries have accepted to act as observers.

Then we have Afghanistan, Southern Sudan and Taiwan. Again these countries do have reasons such as Southern Sudan being the world’s newest nation having only gained its independence in 2011. Taiwan is also not a totally independent state, since it still suffers political issues with China. And Afghanistan who in fairness was dealing with bigger problems on its mainland from tribal conflicts to wars.

Lastly and least expected country not to sign the Kyoto Protocol was the United States, they eventually did sign the treaty in 1997 under the Clinton Administration however they did not ratify it and therefore under Bush’s Administration the treaty was annulled. In a letter written by President Bush, the “country” explained that it felt that the treaty would cause “serious harm to the U.S. economy” (The White House, George W. Bush, 2001); thus politely referring to China who although is a part of the Kyoto Protocol, like India they do not have mandatory tasks to abide by. Also, that due to the treaty’s unfair and ineffective means of addressing global climate such as reducing carbon dioxide emissions, this would cause “an even more dramatic shift from coal to natural gas for electric power generation and significantly higher electricity prices” (The White House, George W. Bush, 2001). Obviously this was a big blow for the Kyoto Protocol especially since the United States accounted for 23% of the world’s total emissions in 1996 (Hoong N. Young, 1996 - Journal of Land Use and Environmental Law).
However, now in the year 2014, we see a change where in 2011; Andorra signed and ratified the Kyoto Protocol agreement, thus making it a member against the fight for global warming, along with Afghanistan who signed the treaty in April 2013 and South Sudan having only signed the contract in February 2014. Likewise, the Vatican City has implemented voluntary measures by using renewable energy resources and cutting energy consumption where possible. So much so that, Mark Hopkins, the director of the United Nations Foundation’s energy policy programme said that the Vatican City might “become the first carbon-neutral nation in the world” (Carol Glatz, 2009) by building large solar panels on its property on the outskirts of Rome. And as for Taiwan, after political debate was accepted to participate as an observer in 2009 in the World Health Assembly thus hopefully offering Taiwan a further possibility in the future to participate in the UNFCCC.

To date the United States have still not agreed to ratify the Kyoto protocol and unfortunately Canada, who in 2011 withdrew from the treaty because the administration felt that it was unfair to be part of a legally binding contract that failed to “include the world’s two largest greenhouse gas emitters – China and the United States” (Bill Curry and Shawn McCarthy, The Globe and Mail, 2011) thus fearful that this would also hurt Canada’s competiveness. However Canada did say that they would be willing to join if the world leaders agree on a deal which included both China and the United States.
2.3 What was/is the European Solution?

The European Solution was and still is the EU ETS which is a tool designed to reduce the greenhouse gas emissions that companies emit by using the markets instead of the common practice of enforcing regulation. The tool consists of a system known as the cap-and-trade, where carbon is given a price and therefore enabling carbon to also have a financial value to each tonne of emission that is saved.

The word “cap” is principally a total amount or allowance of GHG emissions that a company is allowed to emit per year, where this is specially targeted towards high emitting industries and aviation. The EU ETS mission involves reducing the total amount of emissions emitted by companies each year, so that by 2020 the emissions registered by high emitting industries is 21% lower than those registered in 2005 and 5% lower in the case of aviation. Also the EU ETS main objective is to reduce emissions to at least 80% by 2050.

In the case of “trade”, by definition it means that companies will either receive or buy credits in order to cover their emissions. Where essentially a company will have to surrender credits for every tonne of GHG that it emits each year and if it does not have enough it will then have to buy from the limited amounts of international credits of emission-saving projects in order to cover any extra emissions that they have emitted or cannot cover. In addition, companies who have more than enough credits to cover their emissions have two options, that is to either hold them in case of emergency or to sell them to companies who have less credits than they actually need. It is also important to note that if a company ends up not having enough credits then they will be imposed with heavy fines.

Unfortunately, the process towards reducing GHG’s has not been an easy one. The EU ETS is now facing some challenging problems due to the surplus of unused allowances. The main contributing factors were the errors which occurred in Phase 1 due to experimentation, which
resulted in a surplus of credits upsetting price margins significantly. Subsequently in Phase 2, the cap was reduced in order to regulate the former miscalculation. Regrettably, no one had foreseen or anticipated that a financial crisis was lurking behind doors and therefore further damaging the demand for credits. This has led to numerous controversies regarding the commission of the EU ETS, where some still affirm hope and opportunity for success whilst others have deemed the EU ETS as a failed project. Where Thomson Reuters Point Carbon “predicts ten-year wait for market prices to rebound” (EI Knowledge Service, 2013) having also said that analysts at Thomson Reuters predicted that the surplus of allowances would remain until 2027, hence sinking the chances of reducing the GHG’s by at least 80% by 2050 unless a new framework or reform is presented.

Therefore, as a result of the problems faced by the EU ETS an initiative has been taken to temporarily “backload” some of the auctioning allowances, that is, to postpone the auctioning of no more than 900 million allowances.

However, this is only a temporarily adjustment hence a structural reform of the carbon market is still needed where a legislation has been proposed to solve the imbalance of supply and demand by establishing a market stability reserve at the beginning of Phase 4 (2021). The reserve would be used in order to fix the build-up of emission credits since 2005 as well as improving the system against shocks.

As a result the 2030 framework was created to include the reduction of GHG’s by 40% below the 1990 level hence ensuring that the EU ETS maintains its final objective; this can be done by lowering the cap to 2.2% from 2021 instead of the current 1.74%. Additionally, the 2030 framework aims to promote investments in green energy by increasing the share of renewable energy to at least 27% instead of the current target of 20%.
2.4 Academic Articles regarding the carbon market

According to a study performed by Gareth Veal and Stefanos Mouzas from the Lancaster University, UK where they debated the EU ETS market carbon design against its operational function; their results led them to believe that unfortunately there were some discrepancies from the data they had collected between 2009 and 2010. The discrepancies were a “result of businesses not having reduced their CO₂ emissions following the introduction of the EU ETS” (Gareth Veal, Stefanos Mouzas, 2012) therefore bringing doubts to whether the markets could really mitigate climate change. They further discussed that although the design behind carbon markets is logical and makes sense, unfortunately it does not work correctly in the real world. Some explanations they give consist of “the difference between how regulators frame carbon markets and optimise incentives at the level of industry as a whole and how carbon market participants adopt a much narrower frame for the actual representational, exchange and normalizing practices adopted during carbon market operation (Callon, 2009; Reverdy, 2010)”. Thus this brings the following conclusions where regulators must find solutions that encourage participants to change their behaviour, and ways of how to deal with uncertainty such as economic growth or recessions. Still however, both Veal and Mouzas accept that the carbon markets are relatively a new phenomenon and one that requires further study especially now when other carbon markets are growing around the world such as the Swiss ETS, Australian ETS and more. They also suggest that keeping up-to-date with current carbon market practices is important especially for new studies to be conducted and therefore finding better means in order to motivate carbon markets with regards to reducing carbon emissions.

Also in an article written by George Daskalakis - On the efficiency of the European carbon market: New evidence from Phase II, Daskalakis examines whether the market is recovering or not based on a study by Daskalakis and Markellos (2008) where Phase I was far from being an
efficient market. Daskalakis after doing his empirical analysis concludes that during 2008 and 2009 simple technical analysis rules could have been used and thus helped the market to generate risk-adjusted positive returns. In addition, as from 2010 the market was showing progress and signs of weak-form efficiency market with the adoption and revision of Phase II. Therefore Daskalakis research follows in line with the literature review where we admitted Phase I as being a failure and that Phase II could have been more successful had the financial crisis not happened. Also this result shows that regulators are amending the design and although the carbon market might not be mitigating climate change as Veal and Mouzas said, with time, monitoring and supervising this new phenomenon could lead to the mission statement set for 2050.

Lastly Amélie Charles, Oliver Darné and Jessica Fouilloux who discuss the efficiency in the EU carbon markets where again the trend points to the regulators as being somewhat to blame since in their study, they discuss how the market deals in futures and as of a result it is therefore open to manipulation as Newberry in 1992 suggests. However, they observed through their study that the cost of carry model within Phase II was rejected, meaning that contracts were not priced accordingly and therefore this could allow arbitrage opportunity into the carbon market and thus cause inefficiencies.
2.5 General Overview of the Carbon Market

As we have already stated the point of having a carbon market is to reduce the emissions that we as a global society have polluted for the past 150 years and for which we are responsible for the global warming in our world and changes in its climate. The carbon market thus requires a design to work which includes a set of tools such as the cap-and-trade system that places a limit on the overall emissions that high emitting industries and aviation's must reduce each year. Moreover allowing companies to buy or sell credits which basically are used at the end of each year where in other words those credits are surrendered in order to cover the company's emissions.

In addition to the cap-and-trade system there is also the Offsetting system which essentially is the Clean Development Mechanism and Joint Implementation Mechanisms. The CDM involves creating Certified Emission Reductions where companies can adopt to buy these CER's by investing in emissions reductions in another country where it is cheaper and therefore benefit from cheaper solutions. As for the Joint Implementation this includes reducing emissions in any other Annex I country instead of reducing emissions locally, reason being that it doesn't make a difference in what location emissions are reduced since greenhouse gases are a global problem and not a nation's problem thereby granting the company the approval of purchasing ERU's. Furthermore both CER's and ERU's as from Phase 3 must now be exchanged for a limited amount of EUA's although this does not apply to voluntary participants. Additionally this provides companies with a risk-free profit since the cost of purchasing a CER or ERU are relatively cheaper than EUA's.

And lastly, some countries such as the United States have already had a voluntary carbon market which pre-dates the 1997 Kyoto Protocol where mainly these countries have been voluntarily reducing the amount of carbon they emit.
2.5.1 Kyoto Protocol

The Kyoto Protocol is an international agreement amongst nations in an attempt to fight off climate change where participants of the Kyoto Protocol have accepted the mission of reducing emission targets. On 11 December 1997, the United Nations Framework Convention on Climate Change (UNFCCC) alongside 184 countries agreed to have a legal document known as the Kyoto Protocol based on the principles set out in 1992. The Kyoto Protocol was inspired due to the past 150 years and more of atmosphere pollution and abuse and therefore represents a document that promotes combating global warming and hence delivers an obligation to reduce greenhouse gases emissions. In addition, the parties recognised that this predicament was not the fault of all nations but rather a problem derived from the Industrial Revolution Era and hence from developed countries and as of a result it was decided that developed countries would have a more stringent obligation with regards to the controlling and reduction of greenhouse gases than developing countries. However it would take roughly 8 years for it to become finally implemented, that is on 16 February 2005 with the introduction of Phase 1 of the EU ETS.

As Phase 2 started in 2008, more detailed rules were implemented and adopted known as the first commitment period with reference to the Marrakesh Accords that was debated in 2001 in Marrakesh, Morocco. At the start of 2013 and with the implementation of Phase 3 the Doha Amendment to the Kyoto Protocol of 2012 debated in Qatar was also adopted, where new commitments were submitted that is, the introduction of the second commitment period from 2013 till 2020. Included with the change, a revision of the list of GHG’s that companies needed to report from now on was amended as well as several articles of the Kyoto Protocol that also needed amendments from the transition of the first commitment period to the second commitment period. However it is important to note that not all of the second commitment was implemented as the Durban Platform which is a more ambitious emissions reduction strategy approved by 194 countries, making it a very noteworthy agreement, will only come to affect and
hence become legally binding after a final decision is taken in Paris in 2015 which will see it being implemented in 2020 if agreed.

2.5.2 Euro Implementation Phases

The Euro implementation phase was the beginning of the EU ETS as the world’s biggest emissions trading market in the reduction of greenhouse gases. It began Phase 1 in 2005 being also the launch date of the EU ETS as an international cap-and-trade system and kept running until 2007. The first phase was what you would call a test run that is a preparation trial for phase 2, where the EU ETS main goal was to ensure that all EU and member states participating within the EU ETS met their Kyoto Protocol emissions agreement.

Phase 2 on the other hand ran between 2008 and 2012, where now the amount of free allowances that were also provided in Phase 2 were reduced, penalty fines increased, the cap size was reduced, a new system of auction for allowances was introduced and the buying of CDM and JI credits plus the introduction of the aviation sector within the EU ETS. Important to note that within this phase the maintaining of the Kyoto Protocol agreement for the emissions target was still being upheld.

This brings us to Phase 3, which we are currently undergoing having started in 2013 and which will run through 2020, bringing in new and considerable changes to the EU ETS platform. Such as having a single EU-wide cap on emissions, allowances by default are to be auctioned from now on instead of the previous default of free allowances, where in 2013 more than 40% of allowances were auctioned and is destined to keep on increasing as the years go by. Finally, the creation of the harmonised allocation rule for the remaining free allowances until there remains no more free allowances, said to be 2027 and the inclusion of a wider selection of gases.
2.6 Is it beneficial and do we truly need it?

In an article written by the New York Times in 2007 they quote Mr. Redshaw; head of environmental markets at Barclays Capital, who said “Carbon will be the world’s biggest commodity market, and it could become the world’s biggest market over all”(James Kanter, 2007). However it is well known that the European Governments within the first phase have given too many allowances and therefore turned a huge effective system into a less effective system causing volatility and abnormal profits. Also the EU ETS did receive other criticisms for its implementation and strategy such as from Mr. Fretz the chief executive of Carbon Capital Market who in 2007 questioned why were inadequate plants that is plants that had lower standards, being provided subsidies.

Also when dealt with the question: Do we truly need it? One could reply with another question that is: If we do not need it, then why would the whole world in 1992 create a body against climate change and later sign a document in 1997 with regards to reducing emissions?

The answer is that when other solutions where considered such as applying a carbon tax in the early 1990’s, this strategy had been proven by the EU to be an ineffective approach and impossible to implement. On the contrary, the carbon market was seen as a more effective design against climate change where “targets are met at the lowest possible cost” (International Emissions Trading Association, 2010), where a cap and trade system followed by an offsetting system, was seen as a tool that would not only help in reducing emissions, but would also accelerate the growth in reducing carbon emissions.

The reason for this is that it is believed that although taxes would “ensure an increase in energy prices, it would not ensure that emissions are reduced to the necessary level” (International Emissions Trading Association, 2010). In addition, when the cap-and-trade system was used in the United States to fight against acid rain, this design had already proven its effectiveness by
reducing pollution levels in relation to maintaining low costs. Therefore a logical strategy would be of course to do the same with regards to carbon emissions, as such the EU ETS has implemented this design and with the aid of the Kyoto Protocol a legal binding agreement it has been able to give a price to carbon in an attempt to lower emissions at lower costs.

However in an article written under the Environmental Justice the cap-and-trade and the offsetting system (Environmental Justice, 2009) are not seen as a miracle worker or as a perfect solution since they state three problems, where:

i. “The “trade” component does not reduce any emissions.”
   Meaning that companies have two options that are to either reduce their own emissions or buy credits from elsewhere such as the CER’s.

ii. “The “cap” has too many holes and sometimes caps nothing.”
   Again this allegation is implying that the cap for some companies may be too high and therefore these companies are ending up with a surplus of credits which they are entitled to sell. This therefore brings a further problem in the carbon market since when trading, a company will always opt for the cheapest solution and again with reference to the first problem of trading; the selling of surplus credits is cheaper than reducing a company’s own emissions.

iii. “Offsets loosen the cap.”
   This point refers to the undermining of the cap and trade system since while a cap limits the emissions a company can emit, the offsetting system allows them to pollute above the cap limit such as the use of the CDM and JI Mechanisms.
Still, as from the literature we have seen, it would seem understandable that problems are to be
expected with regards to this new phenomenon and the ETS is most possibly the first method
that is truly attempting to tackle climate change from a global point of view even though its path
has been unsteady. Lastly, quoting Climate change information New Zealand, 2013, they write
that “no single, practical measure will, on its own, achieve the economic changes required to
cope with a low-carbon future. This requires a broad range of tools working together and
involving every sector of the economy and society.”

2.7 The EU ETS and Market Carbon a huge flop or success

This is a question that researchers have not yet been able to answer since the start-off of the
EU ETS and Carbon Market. Many have given their opinion however all of them fall into two
categories, those who say that the ETS and carbon market have been a failure and those who
say that it has been a success.

In a conference held in France in 2013 titled “Green is the Colour of Money, The EU ETS failure
as a model for the “green economy”” (Carbon Trade Watch, 2013) they stated in a report that
within the first seven years of the system the EU ETS had done little with regards to reducing
emissions since “permits were allocated for free according to historical emissions” thus
industries who evolved into more economical plants were receiving an excess in credits while
electricity producers ended dumping their opportunity costs to the consumers. In addition they
commented on how the carbon prices kept falling and how fraud was finding its way inside the
market therefore causing more regulatory conditions.

However in a paper for the Centre for Climate Change, Economics and Policy, Tim Liang,
Misato Sato, Michael Grubb and Claudia Comberti throughout their research of assessing the
effectiveness of the EU ETS, concluded that although the system has problems, the EU ETS however has been able to be effective with regards to bringing company boards aware of their emissions, which as a result could probably also aid with regards to companies disregarding projects that were highly pollutant. Also the EU ETS regardless of its errors has also managed to deal with its inefficiencies that it learnt the hard way and is always improving its regulations and policies based on its experience. In addition as mentioned previously in Section 2.7 of the dissertation, when taxation failed in the early 90’s; again we have witnessed that carbon tax is definitely not the way to go when considering how in 2010, Sarkozy’s environmental policy ended up being shelved (New York Times) as well. Therefore further proving that since the market has lasted until now, then somehow this plan is somewhat successful since companies have not yet disregarded it completely.

Moreover in another article by Silvio Marcacci, 2013 a Principal at Marcacci Communications, he states that with regards to the low carbon price, “The value of any single allowance only reflects what the polluting entities and market participants think their emissions and emissions reductions measures are worth under the cap”. This implies that success for now may simply be that currently we have a working market that provides incentives and clean energy. Marcacci also states that due to the auctions, investment opportunities for member states have become easier to accomplish, where in his article he states that in the California Carbon Market, “the system’s value has boomed to an estimated $1 billion dollars, generated hundreds of millions of dollar earmarked for clean energy and emissions reduction and routinely sold out of available allowances during auctions.” This therefore illustrates perfectly that emissions are being paid for whilst its revenue aids in creating economic and environmental benefits.
2.8 How can we address the failures?

In a Climate Brief report on February 2013 No 28, the reforming of the EU ETS and the weaknesses of the EU ETS were discussed and three solutions were presented that could solve the current problem being:

i. “Adopting post-2020 emissions objectives” that is a necessary point in order to reinforce confidence and provide low carbon investments.

ii. “Give the EU ETS more work to do” by providing better coordination and policies.

iii. “Clarify the governance of possible future short term interventions” that is placing a mechanism that allows flexibility in current system such as adjusting the linear factor for reducing emissions.
Chapter 3: Research Methodology

Justifying the methods set out in order to reach the objectives as well as
discussing the limitations within the methodology
3.1 Introduction

This chapter outlines the research method used as well as the limitations encountered in order to reach the objectives of this study. Where the aim of the study is to analyse the benefits of having a carbon market structure in Malta and whether it would render any payback, therefore evaluating whether this framework is indeed a success or failure.

3.2 Aims and Objectives

The aim and objective of this study, as set out in Chapter 1 section 1.3 were:

- To identify whether the EU ETS and carbon market has succeeded or failed in its mission.
- To assess if the carbon market is beneficial and whether Malta can take part.
- To recognise its flaws and attributes, qualities and propose a possible recommendation that would enable Malta to compete with other member states and enhance its status quo as the Mediterranean Financial Centre in the near future.
3.3 Research Method

The research method that was used for this study is that of Qualitative Research whereby we “are interested in understanding the meaning people have constructed, that is, how people make sense of their world and the experiences they have in the world” (Merriam, 2009, p. 13).

In addition, it was decided that the appropriate type of approach would be that of using Grounded Theory where Charmaz (2006, p. 2) states that Grounded Theory “consists of systematic, yet flexible guidelines for collecting and analyzing qualitative data to construct theories ‘grounded’ in the data themselves.” (Greg Guest, Emily E. Namey and Marilyn L. Mitchell, 2013)

And the reason for this choice of research method results from the fact that it is currently impossible to conduct a quantitative research in Malta since we have a lack of industries and institutions within this field. Therefore due to the limitations presented it was deemed that an unstructured and semi-structured interview would be the ideal set-up in obtaining data collection thereby allowing the interviewee to share new ideas and opinions to the study as well as bringing up considerations not thought of by the interviewer and simultaneously where necessary guide the respondent back to a specific question in order to obtain more information. Furthermore, the interviewees were chosen based on their expertise or relation to the subject matter and as for aviation, since it is still “new” to the EU ETS, it was decided that for the sake of the study, only the competent authority and Malta’s installations where to be interviewed since they have dealt with the system for longer and had taken part in both Phase 1 and 2. Some reasoning behind rationale of method includes:
- The lack of literature pertaining to carbon markets in Malta; therefore by using interviews, one would hope to gain in-depth information and understanding enabling the study to receive insights as well as common trends and threads in thought and opinion.

- Allows explanatory interview and therefore allows the interviewee to give their perception on the subject and as of a result may help provide significant insight

- Can aid in determining problems and providing recommendations

- With the interviewee’s permission, the interview may be recorded and thus provide more accurate notes

- Spontaneous answers with no time delays

- Reference point for more information

- Grounded Theory does not make use of the “traditional method of deriving and testing hypothesis from existing theories”(John Pratt /Centre for Institutional Studies, 2012, p.3) but rather you are allowed to generate your own theory through interaction and therefore fit your immediate problems that are being investigated.
3.4 Interview Approach

Since we are attempting to determine whether the carbon market is a success or failure and whether Malta can play its part in this niche, two semi-structured/unstructured interviews were carried out with representatives from the Malta Resource Authority and from Enemalta being the sole electricity provider in Malta and therefore owning both the Marsa Power Station and the Delimara Power Station. Also as already stated, the aviation sector was left out due to it still being somewhat new to the system as opposed to MRA and Enemalta who have been part of the system since 2005 and therefore it is assumed that they have more experience in the field.

The interviews were conducted in a way to achieve in-depth information both from an expert point of view and participator point of view regarding the functions that each interviewee has and must abide with, an understanding of where Malta lies within this “market” and what resources or changes it would require in order to establish itself within a carbon market structure. Moreover, acquiring indispensable information that could give a better understanding of whether the EU ETS and carbon market are a success or failure as well as obtaining personal views of the current situation in Malta.

The aim of these interviews therefore will provide the information I need in order to authenticate my literature review findings as well as develop a conclusion with a final recommendation of what the Maltese Financial sector should do, open for the public, government and financial institutions such as Finance Malta.
3.5 Method Research Limitations

It would be unfair and dishonest to say with conviction that the research method does not come without flaws and therefore in an attempt to strengthen my study we shall discuss the weaknesses associated with this study.

Where firstly, although face-to-face interviews have a higher response rate, they may be "more costly" at times "and time-consuming however they do allow the researcher to select the sample of respondents" (Kate Kelley, Belinda Clark, Vivienne Brown and John Sitzia, 2003, p.2)

The research can easily be subjected by the interviewee’s and by the researcher and therefore might provide bias responses; moreover the amount of data collected can become time consuming, especially when having to transcript an audio recording. The respondents might mistakenly say something which they regret and thus causing confidentiality problems upon presenting findings. Furthermore, the respondent’s emotional behaviour as well as that of the researcher might affect the accuracy of the study and respondents have the opportunity to lie and provide misguided information, although it is important that we recognise that we are not trying to accuse the interviewee but rather imply that unfortunately there is no way of confirming the accuracy of their statements unlike with statistics.

Also due to the method used in the interview that is a semi-structured and unstructured approach, responses can be individual therefore meaning that it is unlikely that other researchers can reproduce the same data. Also interviewees might find it difficult to speak openly and say their opinion and lastly it can also cause difficulty when comparing results and when analyzing them.

As for Grounded Theory, it does not come without its own sets of limitations where “It has been argued that grounded theory subscribes to a positivist epistemology and that it sidesteps
questions of reflexivity.” (Carla Willig, 2013, p.78) In other words critics have constantly argued that the observations have a standpoint-specific nature that is the observation concluded depends on the observer’s point of view.

And lastly, the lack of participants/interviewees, where this setback will affect the accuracy of the study since it is impossible to compare answers with a larger sample and due to the nature of the study and being relatively new, this causes problems as well when or if one were to interview random people since not many know about the subject or have enough information to provide accurate conclusions. However as stated, it is a priority that experts and players of this field are interviewed in order to obtain the most accurate data possible.

3.6 Conclusion

Chapter 3 therefore provides an illustration of the methodology tools used along with its advantages and disadvantages. As for Chapter 4, this section of the study will discuss the data collected and analyzed in addition to the findings obtained followed by Chapter 5 where we shall conclude our study.
Chapter 4: Findings and Analysis

Assessing the EU ETS and Carbon Market and Malta’s potential to enter into this new niche market
4.1 Introduction

The aim of chapter 4 is to deliver the findings of this dissertation as well as providing an analysis of the research results obtained through the interviews conducted as discussed in Chapter 3 - Research Methodology. The findings involve the identification of certain questions that needed to be addressed whilst providing clarity with regards to the EU ETS and carbon market as well as unexpected findings obtained through the unstructured interview.

4.2 The EU ETS and the Carbon Market: A success or failure?

The interviewees, when faced with the question of deciding whether the EU ETS and carbon market are indeed a success or failure, they more or less provided the same answer. Their answers resulted in the belief that the EU ETS and carbon market have been a success, especially when considering the implementation of a carbon price and the possibility to trade in greenhouse gas emissions, therefore proving that the European Union’s strategy for combating climate change and reducing emissions from said installations has so far proved to be possible. In addition, Enemalta, being Malta’s sole electricity provider stated that “the success of the EU ETS has stimulated other countries to launch their own cap and trade schemes” (Interview) hence encouraging other countries such as Australia and China, among others who can use the EU ETS as a basic start up by implementing and keeping certain regulations while removing certain flaws and mistakes that the EU ETS have made in the past and therefore proving that an international global carbon market might be possible in the future. On the other hand, although both Enemalta and the MRA acknowledge their support to the scheme, they nonetheless still
expressed their concerns with regard to the scheme where the MRA stated that although it did not actually fail, “we cannot say it is perfect since it has its flaws and shortcomings”.

Again when questioned regarding what flaws and shortcomings they were referring to, both participants expressed the same concern, that is a concern relating to the growing surplus of allowances as stated in the Literature Review and also reported in 2012 by the European Commission in Figure 4, which as a consequence caused the prices of carbon to fall and therefore providing limited incentives for operators with regard to low carbon technologies and CO\textsubscript{2} reduction measures.

**Figure 4: Supply-Demand balance between 2008 and 2011 in millions**

<table>
<thead>
<tr>
<th>(in Mt)</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply: Issued allowances and used international credits</td>
<td>2076</td>
<td>2105</td>
<td>2204</td>
<td>2336</td>
<td>8720</td>
</tr>
<tr>
<td>Demand: Reported emissions</td>
<td>2100</td>
<td>1860</td>
<td>1919</td>
<td>1886</td>
<td>7765</td>
</tr>
</tbody>
</table>

As shown in Figure 4, due to the surplus attributed from the financial crisis, in early 2012 the EU ETS and carbon market had a surplus of 955 million credits later referred to as backloading. However interviewees from MRA were quick to reply that efforts were being implemented in order to modify how the market works such as enforcing a market stability reverse that would control price fluctuations. Still nevertheless, this situation has affected the price of carbon, where by means of a practical example we can better understand the implications of a lower carbon price against the operators incentive to reduce emissions, where in Figure 5, if we were to assume an operator that emits 1000 tonnes of CO\textsubscript{2} in a year as at 2011 against the same circumstances but in 2014. We would see a big difference in the cost for emitting.
As we can see in Figure 5, an operator in 2011 would have to pay €20,000 in order to surrender 1000 carbon credits or EUA’s as opposed to paying €5,000 in 2013 for surrendering 1000 EUA’s, therefore reinforcing the concept of operators having limited incentives, that is:

- Why invest in low carbon technologies when it’s cheaper to emit?

Also as a result of this, the operator can either decide to reap the profits by reducing their expenses with the money saved or emit more tonnes of CO₂ where Figure 6 shows that an operator in 2013 can emit up to 4000 tonnes, a difference of 3000 tonnes of CO₂ while still paying the same amount of €20,000 as in 2011.
Figure 6: Paying €20,000 in both years for the right to purchase and surrender EUA’s

4.3 Carbon market – The solution?

My study besides determining whether the EU ETS and carbon market are a success or not, also required particular attention towards the concept of whether or not the carbon market is in fact the right solution towards combating climate change. My findings concluded that my interviewees did indeed see the carbon market as a good tool for combating climate change however both respondents gave a different view. Whereas Enemalta kept insisting that carbon prices need to start rising in order to motivate the operators to find alternative methods as well as showing a certain degree of alarm with regards to the European Commission’s intervention to manipulate the carbon price stating that they fear that this will “discourage greenhouse gas abatement investments, affect transparency and encourage further carbon leakage”. As for the
MRA, they stated that “It is a good solution but not the only and also it cannot be used alone.” They explained that when introducing market base measures, there are many other factors which can help combat climate change such as low carbon development and other non-economic factors, however they believe that the carbon market is most definitely part of the solution which has also been agreed at an international level.

4.3.1 Carbon market versus Carbon taxation

This concept therefore brought forth another query that is although the carbon market is considered as part of the solution; wouldn’t carbon taxation benefit more with regards to combating climate change as opposed to using a cap-and-trade system that is a carbon market? Again here we see that the participants agreed when explaining the difference between a carbon market and carbon taxation where they both roughly stated that:

- A cap and trade system would provide more certainty when considering the amount of emission reductions and little certainty about the price thereby benefiting the environmental consideration on a wider scale since it makes operators cautious since they do not know how much they might end up paying in order to surrender credits.

Therefore, through my findings and as discussed in the literature, we can confirm that all participants specifically 11500 installations in the EU, under the EU ETS and carbon market have been grouped under a single cap allowing them to compete by means of a cap-and-trade strategy. Thus theoretically, an installation could buy all of the credits/allowances and emit all of
those emissions and therefore all other installations would have to make sure to have zero emissions, or emit what it requires and sell the remaining allowances to the highest bidder, again making a quick note that this is theoretical since it cannot happen in reality but certainly keeps the operators on tenterhooks.

- And as opposed to carbon taxation where to the contrary of a cap-and-trade system, taxation would provide price certainty and no clear indication of emission reductions and which could in turn impact end consumers, thereby implying that the only limit in taxation is the size of one’s pockets.

Therefore, suggesting that if I happen to be a multimillionaire, then I can emit as much as I like since my only obligation is to pay whatever tax I am imposed regardless of the harm and enormous emissions that I as a company would have released.

Conversely though, both our respondents gave different views when it came to the implementation of taxation, whereas Enemalta responded that although the market carbon is adequate, they agreed with some economists who argued that a hybrid system would be ideal hence introducing a “price adjustment mechanism such as floor or ceiling carbon prices in order to maintain the price within adequate limits”. While the MRA felt that with regards to the EU ETS and carbon market, the cap and trade system is working fine and does not need to be changed however it did state that for certain areas it could be possible that a carbon taxation would be more suitable for instance in the case of road transport although it would not necessarily mean that, that is the only solution. Therefore metaphorically speaking that in the case of MRA’s view: You should not change a horse in midstream thereby meaning that since the EU ETS and carbon market are still relatively new and have somewhat managed to do certain tasks then it would be a mistake to stop half way through.
4.3.2 Why is there so much fear/uncertainty with carbon markets

Since 2005 when the EU ETS and carbon market established itself till today, a lot of debate has surfaced to whether it is the right course of action or not and whether it is a waste of time, this therefore led to Mr. Saviour Vassallo a Senior Environment Protection Officer of the MRA who has allowed me to quote him and providing me with some of his beliefs as to why there is all this uncertainty and why some argue that taxation might be a better solution. Again I must make sure that it is thoroughly understood that this is only his opinion.

So firstly, Mr. Vassallo believes that there might be a bit of a historical reasoning behind this and starts by explaining that the cap-and-trade is an American concept, a concept of flexibility and reward as opposed to the European mind-set of “command and control” which would be taxation. Stating that he believes that somehow and maybe, the European society has fostered a command and control fixation probably due to our long history and heritage of being ruled by Kings and Queens. However, Mr. Vassallo continues to explain that during the initial negotiations of the Kyoto Protocol, it was understood that the Europeans had wanted a command and control mechanism however the Americans had made it clear that in order for them to participate in combating global climate they would want a flexible mechanism, one which allows a company to profit if possible and only then would they sign and ratify the agreement. However as stated in the Literature review unfortunately, later on during President Bush’s campaign the protocol was never signed nor accepted by congress.

However, back to the initial negotiations, Europe could have said who cares about flexibility and adopted its command and control mechanism, but by doing so it would have lost America, which was the biggest emitter of that time and therefore Europe ended up shifting its mind-set and accepting terms imposed by the United States. Now it is of Mr. Vassallo’s opinion that with all the problems that have occurred since 2005 and even now especially with aviation, however taking his time to explain that the problems occurred were not due to negligence or because the
commission didn’t care but purely because no one ever thought that such problems could happen; that there might be a school of thought who are attempting to regress back to their natural comfort zone of command and control such as implementing a taxation system. Furthermore, Mr. Vassallo continues to explain that essentially the cap and trade system is relatively easy when you explain its principles but when attempting to implement them, then it’s another story since they are rather complex and complicated. The reason for why they are so complicated as opposed to a simple taxation scheme is that a market carbon in addition to having a cap and trade also includes financial transactions, money laundering, auctioning, registry etc. Hence all these complications continue to enforce the school of thought who would rather that we go back to basics and dump this complicated system which we are not used to.

Lastly, Mr. Vassallo continues to voice his opinion with regards to the aviation who today are also under the EU ETS and he believes that he wouldn’t be surprised if the aviation industry would prefer to go back to a command and control approach due to the complexity when dealing with financial issues of a multinational nature since unlike an installation that is fixed, a flight moves from country to country and therefore might cause some issues when drawing the line. For example:

Assume a flight from Malta to Gatwick Airport, where do you declare your emissions? Do you declare part of it in Malta and the other part in Britain? Should you also consider the flight path since in order to cross from Malta to the UK, you need to pass from other nation’s airspace? Therefore, all of these questions might represent some problems.
4.4 Inefficiency, Frauds and Manipulation

Again both interviewees agreed when it comes to such allegations that the market carbon might be inefficient and open to fraud and manipulation. Both agreeing that just like in any system where money is involved, fraud and manipulation will be lurking and waiting for its chance. Also both answered by saying that even though this is happening, the EU Commission is well aware of it and are doing everything it can and taking measures against it.

However again the competent authority was quick to ask me what difference was there between the carbon market and any other market such as carbon taxation, obviously referring to those who insist that the carbon market is a failure and should be changed with taxation. They asked, “Is carbon taxation inefficient? And is it open to fraud and manipulation?” The MRA continued by saying yes to both questions relating to carbon taxation, saying that it is inefficient because you have to chase operators in order for them to pay and tax evasion is an obvious consideration. Hence even though many have said that the carbon market is inefficient in reality is there something else that is different and that is effective and efficient?

Mr. Vassallo then adds that “taxation has been in use for thousands of years and emissions trading are but only a new concept”. Where then a representative of the MRA continues by comparing all market as being open to fraud, manipulation and inefficiencies and mentions the financial crisis as a clear example of how markets are also subject to the same constraints as carbon markets.

Mr. Vassallo continues to add more to the subject by explaining that in his view it is a question of perception, since if the world were to start a new system similar to the cap-and-trade of the EU, they would find it easy, since they would only have to choose what they want and what they do not want. And this is a problem in a way, because unfortunately people see change and new regulations and believe that something is wrong but fail to understand that change is not a sign
of failure but rather a sign of progress and having learnt from your past mistakes, such as having a national cap when a single cap was needed to prevent loopholes.

The problem again was that the EU ETS and carbon market was naïve since he says that in their meetings they “never spoke of manipulation, fraud etcetera it wasn’t thought of as a major issue for the EU ETS but it resulted it was and took some time to actually realize it”. The MRA tell me that however now with the new registry system and regulation such as enforced KYC checks and collaboration with FIAU member states as well as special software especially developed for transactions to monitor strange abnormal patterns that they now believe that they have comparatively solved the problem.

The MRA representative ends the discussion by comparing the EU ETS as to a baby back in 2005 when it started because it was new and didn’t know exactly what it wanted and needed, however today the MRA representative compares it to a mature toddler or teen, where although it is more mature and has evolved, still “you need to buy it clothes” therefore although it is growing it is still a work in progress, unlike the other markets that have existed for much longer and although they still change bits and pieces they are not as “lost” as the carbon market which is trying to grow.
4.5 Constructing a financial hub in Malta

Having considered Malta’s role in the financial service where within the last decade we have seen a huge growth within the sector including Asset Management, Wealth Management as well as Malta’s attractiveness thanks to Finance Malta who keeps promoting Malta’s financial services, it occurred to me that Malta might possibly be missing a new market opportunity since the carbon market is indeed a new phenomenon.

And again the respondents showed that they believed that Malta should be doing something, especially since competing also in this market would enhance Malta’s image even more as a financial centre/hub. Moreover, I must admit that I was surprised by the MRA’s reply where they stated “I’ve always asked that question” that is “Why has this not happened? And again have local brokers considered this potential as a new market?” So clearly, we can tell that even though both respondents did claim that the carbon market has its flaws, they still see a potential for growth in this market and success and in one which Malta should definitely be taking its cut.

The MRA interviewees also state that the “issue of trading in allowances is nothing different from any other financial market and hence there is nothing inhibiting the opening up of a market”, thus insinuating that local traders in Malta should not find it difficult to grasp the market. However this task would essentially require that the MFSA be willing to also regulate this market in relation to financial transactions, since the MRA is only the competent authority in charge of checking that installations have surrendered their allowances. Therefore ending up by highlighting how the iGaming industry in Malta, eventually flourished thanks to the hard work from both MFSA and the Lotteries and Gaming Authority who had overseen the financial mechanisms of having such an industry here.

However Mr. Vassallo tells me that there is another thing that must be considered, that is: What if the market was to grow and MRA instead of having 3 to 4 requests in a year started having
100 requests. Would the system we currently have be able to handle that amount and are we fast enough to process the checks, contacts, receipts, documents and more for a 100 requests in a year plus do we even have enough labour force to do so? And with all the traders working in Malta then, will MFSA be able to keep track of people who unfortunately are not genuine? Since a mistake from any part of the system would destroy Malta’s image and hard work.

In addition, a lot of other questions did come up with regards to this topic but unfortunately they aren’t questions which can be answered but rather questions where only time can tell, such as will China manage to maintain its carbon market and if yes will the EU ETS and China ETS link together thereby widening the market twice as much and allowing for more competition, also would the United States then follow after seeing China joining, therefore adding a third major market. The prospect of this happening in the future could be very advantageous especially for a small island like ours who is fast becoming renowned within the financial industry specifically if it has done its homework and research in order to be ready to launch its hub. This would mean that we would require lawyers who are practicing the laws on carbon markets and anything related to it, brokers who understand the process, systems working accordingly without unnecessarily delays, consultancies ready and willing to provide clients with the information needed, intermediaries who can help facilitate complex transactions and more. Since as we stated before the scheme although having a relatively easy to follow and to understand principles, it is the finer details that cause complex problems. Again Mr. Vassallo recounts a case where an aircraft operator had asked their local legal representative how they could comply with the EU ETS however his local legal representative just looked at the aircraft operator in dismay since the representative had never heard of it. Therefore suggesting that this is not only a matter for the financial sector but much more such as providing professional support services at the airport in order to help and direct aircraft operators and legal services for both aviation and installations.
A close example of what would be expected is quite similar to the maritime sector, an island with a lot of experience, where every major legal company in Malta has its maritime office and more. Laws would need to be considered as well as an institutional and regulatory framework would be required.

Moreover in 2015, there will be another factor in play, which is will the protocol for the new commitment be amended and agreed upon with regards to climate change, what will it contain and what will happen? Will the agreement get signed or will it be pushed aside? Again we can only speculate, but this will not provide us with accurate answers.
4.5 Conclusion

The general consensus among the interviewees more or less seemed to produce similar results even though both represent different sectors in a way of saying, since one is the authority whereas the other is a player, which is competing in the market amongst the EU.

They were very optimistic with the scheme even though the price of carbon must go up in order to actually fix the market and create more competition. In addition, the market is also viewed as a potential market in which Malta should play its part and prepare itself in order to take the market by the horns.

And as for the analysis of the research it concludes that ultimately, the EU ETS and Carbon Market are not failures but victims of circumstances, such as the financial crisis, the errors made in Phase 1 and 2 as well as being naïve in thinking that a carbon market would differ from any other market and not be a target for fraud and manipulation.

As for the EU ETS and carbon markets future this does remain a bit of a mystery however from the literature review and from my findings and overall perception, at least for now, the prospect of its success and continuation are extremely high. However final conclusions and recommendations shall be presented in Chapter 5.
Chapter 5: Conclusions

Concluding the studies objectives and providing recommendations for the near future
5.1 Summary of Study

This chapter will provide a summary of the research presented along with conclusions drawn out from the study research. Consequently this will be followed up by a list of recommendations intended for the use of the public, government and any financial institution who are interested in the field of carbon markets and EU ETS. And finally some comments for further research will be proposed at the end.

As for the study, its intention was and is, to analyse whether the EU ETS and carbon market are successful against combating climate change and hence the result would help evaluate the potential this market could provide for Malta.

The literature available defined the significance of what an EU ETS and carbon market represent, and the issues it faced such as the call for the introduction of carbon taxation and the diversity of views of scientists and economists. However we were also able to observe how the EU Commission along with IETA, IPCC and more have upheld the realization of the carbon market. On weighing both sides of the coin we are confronted with inconclusive solutions for a compelling rebuttal.

As explained in Chapter 3 of the Research Methodology, a qualitative approach was taken, to be exact a Grounded Theory Approach using a mixture of semi-structured and unstructured interviews with experts and players of the carbon market sector, in order to gain a more in-depth insight to the study of the EU ETS and carbon markets.
5.2 Conclusions

The EU ETS and Carbon Market are part of a wider concept; highly regarded as a successful system nevertheless like any other market it has its flaws.

But, from the research carried out, the prospects for success seem to outweigh the losses, meaning that if more time were to be spent on researching the subject matter such as what is needed, what is missing and so on, Malta could actually benefit in its economy and financial status within the EU and a possible global market. 2015 marks an important date with regards to the carbon market’s future, 2015’s revision in Paris is thought by the MRA to be a pivotal point for the carbon market system, since it will be the moment of truth, a crucial juncture which will either push the carbon market and EU ETS further forward or crush it even more. The question that requires reflection is whether we should sit it out and wait for the outcome. Or embrace the possibilities that an international carbon market could bring about, such as growth in the financial industry and sector. The prospects are infinite especially to a country such as Malta which is already considered as an attractive destination with a renowned financial centre, let alone the benefits it would incur if it catches the early carbon market wave.

This draws up another question where now we are left to think of what would happen to the EU ETS in the absence of an international framework such as the Kyoto Protocol. Would it survive and continue doing its duty without the aid of the Kyoto Protocol or would the whole project fail. Also if the EU ETS had to work on its own would it be able to generate enough liquidity.

Another problem for Malta is its size; Malta totally depends on the EU ETS in order to compete, since we only have 2 installation plants, technically one, as it is the same company, and some local aircraft operators making national competition insignificant. That is if I need to buy, I cannot really buy from anyone due to having such a small market and same would go for selling. However in countries like the UK where they have more than 10, 20, 50 plants, even
without the EU ETS such countries could still operate although the market would be small with marginal profits.

Additionally there is still a certain amount of uncertainty which needs to be researched, studied and most importantly monitored in order to keep up-to-date with what is going on.

### 5.3 Recommendations and Additional Research

After having concluded that the EU ETS and Carbon Market have been successful in establishing a carbon price, we still need to wait and see what will happen after 2015. Although when you consider that 194 countries were already in favour for the Durban Platform in 2012, the chances of it not passing seem slim. Regardless of the outcome, the fact remains that due to global warming, a system is indispensable and inevitable and many companies if not all would prefer not to pay carbon taxation which seems to be the only mentioned alternative. To date the cap-and-trade has been in effect and has worked for nearly 9 years and even though it has had some ups and downs along the way as well as a low carbon price, the certainty remains that the carbon footprint has a price and as a result I recommend that Malta should start investing in this project by implementing certain measures such as:

- Both MFSA in collaboration with MRA should endeavour to work together in order to determine what role MFSA would have to play in the carbon market as well as what type of monitoring and supervision would be expected in order to regulate this market.
- Acquire governmental incentives with regard to educating personnel, companies and individuals on the subject of EU ETS and carbon markets.
• Testing current systems for inefficiencies in order to adjust and correct.
• Ascertaining that companies covered by the EU ETS in Malta as well as all collaborative agencies and individuals know what the EU ETS stands for and understand the directive’s mission as well as having certain knowledge about the carbon markets, therefore increasing our efficiency and making us more competitive.
• Conducting stress tests to determine if we have enough resources to keep up with the market, considering a scenario where we are fully operational.
• Building an adequate infrastructure and design, both institutionally and regulatory frameworks.
• Investing in more research on the subject.
• Preparing all necessary arrangements within the infrastructure such as having a prepared registry system with easy access that is efficient and effective, an up-to-date IT system with proper software to prevent cybercrime and to monitor irregular transactions.
• Having the right expertise in the market such as intermediaries who can facilitate complex transactions, brokers who understand the process and consultancies who are ready and willing to provide clients with the information needed.
• Additionally, communicating with legal firms and determining their knowledge relating to the EU ETS and its functions and allowing them to benefit from government incentives, so that they may learn the laws on carbon markets and anything related to it.
• Locating offices at certain locations for quicker response such as at the airport.
• Monitoring the carbon market data such as what time and season are they traded mostly and vice-versa.
• Conducting stress tests and checks again in order to fix any inefficiency, if any.
• Promoting the new niche market so that companies in Malta may start preparing themselves in terms of regulatory laws.

5.3.1 Additional Research

As mentioned in recommendations, it was suggested that more investing is given to researching the subject. Some questions that require answering with regards to the EU ETS include whether the EU ETS could survive on its own without the Kyoto Protocol, where basically we would be asking how mature and reliable the EU ETS is. Has it reached a certain maturity where it could lead by example on its own or would it crumble into smithereens?

Also the question between Carbon Taxation and the Carbon Market has a lot more to offer where although we have discussed them, more research would be needed to determine whether we should keep the Carbon Market for the long run as it is, or change it into a Carbon Taxation even though from the results, it would seem that this option would cause more harm and would not help in decreasing emissions. Lastly would a merger or hybrid of both a Carbon Market and Carbon Taxation be better?

Additionally if Malta was to open a firm that dealt with the carbon market could Malta employ employees that would act as financial officers for a respective company/ies, and hence act as their treasurer, thereby hedging for them, purchasing for them, selling for them etcetera? And if this could be possible would passporting of firm be allowed in order to grow and spread services across borders?

Finally, are the problems that the EU ETS are facing due to regulation? And do we need to de-regulate certain areas or regulate more?
It would be meaningful to replicate this study in a few years’ time where the latter would re-analyse the carbon market and EU ETS to determine what new potentials and challenges would arise in the near future. And the construction of a new future plan in correspondence to the new findings with regard to Malta’s participation within this market.
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Appendices
Appendix (a)

Sample Consent Form

Date: _______________

Name of Interviewee: _______________________________________

Name of Organisation: _______________________________________

‘The EU ETS and Carbon Market: A Success or Failure and should Malta participate in this market’ - This research study aims to gain an insight with regards to the Carbon Market and the EU ETS as well as Malta’s participation by assessing the opportunities and flaws of the Carbon Market and the EU ETS, as well as its benefits and determining whether in reality the Carbon Market along with the EU ETS has failed or not. Moreover, the interview is semi-structured and exploratory in nature and therefore allows new ideas to be brought up during the course of the interview.

Consent:

I, the undersigned interviewee, have given my consent to the following: [tick where you agree]

☐ The interview shall be audio recorded.

☐ Recordings shall be destroyed following the evaluation and completion of the research project.

☐ If need be, I can be quoted for the purpose of the research.

☐ With regard to the previous statement, I wish to remain anonymous.

In addition, I the interviewee understand that this form can be presented to the Institution being the University of Malta in order to prove authenticity of interview and research work.

Signature of Interviewee _________________________________

Signature of Researcher _________________________________
Researcher’s Details:

Name: John Liam Scolaro          E-mail: johnliam.scolaro@gmail.com
Mobile: (+356) 99294858
Appendix (b)

Interview Discussion Topics

Brief Introductory notes for interviewee:

The focus of my thesis in this final year is ‘The EU ETS and Carbon Market: A success or a Failure and should Malta participate in this market’.

The aims and objectives of my research are:

- To identify whether the EU ETS and carbon market has succeeded or failed in its mission,
- To assess if the carbon market is beneficial and whether Malta can take part, and
- To recognise its flaws, attributes and qualities as well as proposing a possible recommendation that would enable Malta to compete with other member states and enhance its status quo as the Mediterranean Financial Centre in the near future.

Discussion Topics:

1) Do you believe that the EU ETS and Carbon Market have failed or succeeded?

2) What do you believe is lacking in the EU ETS and Carbon Market? (flaws)

3) Do you believe that the carbon market is a good solution with regards to climate change?
4) Carbon taxation has been attempted in the past, both in the early 90’s and in 2010 however they failed every time. What do you think are the benefits of a cap and trade over carbon taxation or vice versa?

5) What are your opinions when relating the EU ETS and Carbon Market to Malta? Do we need it or is it pointless?

6) If Malta were to compete in the underlying market do you think that this would enhance Malta’s status quo as the Mediterranean Financial Centre?

7) Do you think that Malta should take part in this market and compete? If not, why?

8) Malta has been able to save emissions through domestic action. Can these saved emissions be used to sell in order to receive revenue for investment opportunities?

9) In articles and journals, many have regarded the carbon market as being inefficient, open to fraud and manipulation. What is your opinion on this matter?

10) Within a European context and a Maltese context, do you think that some plants are being given more subsidies, making it unfair on others?

11) How feasible would it be to develop/construct the framework for this market in Malta?