

**Investor's Behaviour Towards Green Investments and How Ireland
Invest in Sustainable Green Energy Projects - Is Green The New
Bubble?**

**Rositsa Shipochka
(1460057)**

**Dissertation submitted as partial fulfilment of the degree of MBA in
Finance, Liverpool John Moores University
and
Dublin Business School**

Dublin Business School

January, 2013

Word count: 20, 275 (excluding tables and charts)

Declaration:

I declare that the presented below dissertation is entirely my own and which I now submit for assessment on the programme of study leading to the award of Masters of Business Administration in Finance. No part of this work has been previously submitted for assessment for any academic purpose to Dublin Business School or any other institution.

Signed:.....

Date:.....

Table of content

List of Figures.....	7
Acknowledgements	8
Abstract.....	9
Chapter 1 – Introduction.....	10
1.1 The research problem.....	10
1.1.1 Kyoto Protocol.....	10
1.1.2 Investments.....	11
1.1.3 What is Green Investment.....	11
1.1.4 What is ethical investment.....	12
1.2 Interests in the topic.....	12
1.2.1 Research questions and objectives.....	12
1.2.2 Research hypothesis.....	13
1.3 Contribution of the research.....	14
1.4 Approach to the research.....	14
1.5 Organisation of the research.....	14
1.6 Limitations of the research.....	15
Chapter 2 - Literature review.....	16
2.1 Introduction.....	17
2.2 Green Investments.....	18
2.3 Ethical and SRI Investments.....	22
2.4 Government Policy.....	27

2.4.1 Irish Policies for Green Investments.....	28
2.4.2 International Policies.....	30
2.5 Impact of the Financial Crisis on the Green Investments.....	32
2.6 Profits from Green Investments.....	34
2.7 Conclusion.....	38
Chapter 3 - Research Methodology.....	39
3.1 Introduction.....	39
3.2 Research Philosophy.....	42
3.2.1 Positivism.....	43
3.2.2 Realism.....	43
3.2.3 Pragmatism.....	43
3.2.4 Interpretivism.....	44
3.3 Research Approach.....	44
3.3.1 Deductive research approach.....	45
3.3.2 Inductive research approach.....	45
3.3.3 Abductive approach.....	46
3.4 Research Design.....	47
3.4.1 Mono method.....	47
3.4.2 Multi –method.....	47
3.5 Research Strategy.....	48
3.5.1 Grounded Theory.....	49
3.6 Research Techniques and Procedures.....	50
3.6.1 Secondary data.....	50
3.6.2 Primary data.....	51
3.7 Time Horizons.....	51

3.8 Population and Sample.....	52
3.8.1 Probability sampling.....	53
3.8.2 Non-probability sampling.....	53
3.9 Ethical Issues.....	54
3.10 Conclusion.....	54
Chapter 4 - Data Finding and Analysis.....	55
4.1 Introduction.....	55
4.2 Findings.....	55
4.2.1 Objective 1 Findings and Analysis.....	56
4.2.2 Objective 2 Findings and Analysis.....	58
4.2.3 Objective 3 Findings and Analysis.....	59
4.2.4 Objective 4 Findings and Analysis.....	61
4.2.5 Objective 5 Findings and Analysis.....	65
Chapter 5 – Conclusion.....	68
Chapter 6 - Self Reflection on Own Learning and Performance.....	72
6.1 Introduction.....	72
6.2 Learning Styles based on Kolb’s Model.....	72
6.3 Learning Styles based on Honey and Mumford.....	75
6.4 Personal Development Objectives.....	76
6.4.1 Time management.....	76
6.4.2 Communication skills.....	77
6.5 Personal and Professional Goals.....	77
6.6 Influences for selection of the research topic.....	78

6.7 Conclusion.....78

Bibliography and References.....80

Appendix 1 Definition of Thematic Investment.....88

Appendix 2 Interviews.....88- 111

List of Figures

Figure 2.1: Multiple stages in investing in theme.....	16
Figure 2.2: Breakdown of Cleantech Investment Market.....	17
Figure 2.3: The constituents of 21 st century investment.....	19
Figure 2.4: Global Fossil Fuel Prices – Oil.....	20
Figure 2.5: Global Fossil Fuel Prices – Oil.....	21
Figure 2.6: Global Fossil Fuel Prices – Coal.....	21
Figure 2.7: Global Fossil Fuel Prices - Natural Gas.....	22
Figure 2.8: The multiple styles of sustainable and responsible investing.....	24
Figure 2.9: FTSE4Good Environmental Leaders Europe 40 Index.....	32
Figure 2.10: Portfolio Inclusion Criteria by KFW.....	35
Figure 2.11: Annual Returns MSCI World and MoRE World.....	36
Figure 2.12: NYSE BNEF Global Clean Energy Sector Indexes.....	37
Figure 3.1: Differences between Quantitative and Qualitative Data.....	40
Figure 3.2: The Research Onion.....	41
Figure 3.3: Competing Paradigms in Qualitative Research.....	42
Figure 3.4: Sampling Methods.....	53
Figure 4.1: The percent of investment made in Irish Companies and Projects.....	62
Figure 6.1: Kolb’s Learning Style.....	73
Figure 6.2: Honey and Mumford model.....	75
Appendix 1 Definition of Thematic Investment.....	87

Acknowledgements

First of all I would like to thank my dissertation supervisor Ann Masterson for all the help and support throughout the whole research process and especially for organising certain events, when we have started working together. I would also like to thank Dr Chris McLaughlin for his help with formulating this topic, and all the lecturers and staff from Dublin Business School for making this experience possible.

Second of all I would like to thank my family for their love and encouragement, my boyfriend for providing me with valuable connections and all friends and colleagues for their continuous support.

Abstract

The purpose of this research is to analyse the attitudes and beliefs of Irish investors towards green and ethical investments. Why they invest in green, is it profit maximisation or ethical considerations and what are the barriers for green investments. How feasible is the government policy and targets set for greening the Irish economy by 2020. The green and ethical investments became very popular as thematic investments in the past couple of decades, driven by the growing concern for the environment, growing world population and the depletion of the supply of the finite natural resources. Green and ethical investments are driven by politics, demographics and cultural factors however in recent years some of the leading global companies have adopted ways for switching towards sustainable practices and efficient use of energy and natural resources. The first chapter provides introduction of the topic, the research questions and objectives. The second chapter presents the literature review with more detail explanation of green and ethical investments, followed by government policies, and the effect of the financial crisis on the green sector in Ireland. The third chapter will present the research methodology and methods proposed for this research and the research philosophy, approach and strategy. Chapter four will present findings and analysis of the research, followed by the conclusion in chapter six. The last chapter seven is reflection on learning.

Chapter 1

Introduction

1.1 The research problem

Over the past couple of decades environmental investments became increasingly popular and increasing number of investors are exploring options that promise both long-term financial returns and promotion of social good. Emissions resulting from energy production from the combustion of fossil fuels are the principle cause of global warming. The climate developments in recent years and higher temperatures resulting in extreme weather conditions and rising sea levels will likely disrupt governmental fiscal positions. Transition to low-carbon emissions economy in efforts to mitigate climate change will require substantial investments in alternative or green energy sources, implementation of costly policies and adopting behaviors for production in the new environment. Fossil fuels however provide between 80%-90% of energy needs worldwide according to the *Green Investing* guide (2011). International efforts to reduce greenhouse gas emissions are currently organized under the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol.

1.1.1 Kyoto Protocol

In the case of global warming, perhaps one single external event attracted increased attention and response is the ratification of the Kyoto Protocol. Under the 1997 Kyoto Protocol, which came into force in 2005, an agreement was put in place for industrialized nations to limit greenhouse gas emissions below the levels of 1990 by year 2012 (*Galbreath*, 2011), which was extended to 2020 earlier this year. Ireland as well as many other countries, and as part of commitment to EU regulations, is trying to reduce its greenhouse gas emissions from and green its economy, by setting ambitious targets.

1.1.2 Investments

The nature of investments is to increase the stock of wealth of the business. The uncertainty associated with the investments is whether the future outcome of the

investment will be profit or loss. High revenues and returns on investments and economy of scale have been defined as the primary objectives for any business. However green and ethical investments in recent years are becoming highly popular in the financial markets, with substantial investment demand (*Kimmel, 2010*).

1.1.3 What is Green Investment?

Investment activities that focus on companies or projects that are committed not only on the conservation of natural resources, but also focus on discovery and production of alternative energy sources, execution of green water and air projects and environmentally sensible business practices. “Pure play green investments are those that derive all or most of their revenues and profits from green activities. Green investments can also be made in companies that have other lines of business but are focusing on green-based initiatives and product lines” (*Clean Investing, 2009*). The meaning of clean energy investment is not only to address the ecological issues and the natural resources depletion, but also the volatility of the prices of the traditional sources of energy and increased concerns related to the nuclear energy. In this context the clean “green” energy sources are becoming important element for sustained economic growth (*Inderst et al, 2012*)

There are two main areas for investments - environmental innovators and sector leaders. Environmental innovators are in the business of solving the most pressing environmental problems, companies whose goods or services are directly contributing to a more sustainable future. Green energy technologies are becoming increasingly cost competitive as they reach scale and operating experience. To further support the green energy solutions policy makers need to build frameworks, which enable investors and companies to make good returns on their investments and to start the transition toward a clean world energy infrastructure. Over the past few years there has been substantial interest in clean energy by venture investors, attracted by the size of the markets that will be created, private equity investment continued also throughout the resent financial crisis. Growing number of reports show that the green investments increased and also diversified geographically, moving away from Europe, towards the countries that are

currently with the fastest growing economies such as Brazil, India and China.

1.1.4 What is ethical investment

Ethical investments refer to the practice of some investors of deciding which financial securities to hold, based on whether the actions of the company that issued the security are ethical, in the eyes of the investor (*Hudson, 2005*). By investing ethically the individual investor's fulfills their duty to society in their acts of buying stocks and bonds in ethical companies and selling those of non-ethical companies. Some ethical investors may feel satisfied if they succeed merely in not profiting or in punishing or respectively rewarding firms. The results of many empirical studies show that returns on ethical stocks are not different from those on non-ethical stocks of the same level of systematic risk.

1.2 Interests in the topic

The researcher has interest in business ethics, environmental issues and finance management and has been fascinated by the topic in terms, that the green investments sector combines all three aspects. Given the importance of stable environment, as a base for growth for any business, the researcher aims to determine how companies contribute towards achieving stable environment by investing in green, whether ethical considerations motivate investors to undertake green investments and what are the main drivers and barriers for green investments in Ireland.

1.2.1 Research questions and objectives

The research questions the researcher is aiming to answer are: "What are the main barriers and respectively the main drivers, stimulating investors to include green investments in their portfolios?" and "How feasible are the targets set from the Government for greening the Irish economy by year 2020?"

In order to answer the research questions pointed above, the following objectives were set for the research:

1. To outline the portfolio of Irish green investors and if they invest only in green projects and companies.
2. To determine what motivate Irish investors to invest in green energy projects and whether personal values or profit maximization is deciding factor for green and ethical investments.
3. To determine whether green investment in Ireland outperform the traditional investments.
4. To determine whether green-gap exist in Ireland between investors' intention and action to invest ethically.
5. To determine the extent to which the recent financial and economic crisis has affected green investments in Ireland.

1.2.2 Research hypothesis

In the process of achieving the research objectives and based on the research questions the following hypothesis will be tested:

H1 Personal values and beliefs are deciding factor for green investors when investment is considered.

H2 The way to overcome economic crisis is to invest in renewable energy where the return on investments are higher and foreseeable in the long run.

H3 Future prices for renewable energy will be cheaper, as the sun, wind and water are free.

H4 Green is the new bubble.

1.3 Contribution of the research

Given the importance of the pressing issues of global warming and the need for

boosting green investments, there is little academic research done in the area. This topic links several different sectors financial, energy and national resources, and environmental in joint efforts to try and reverse the damage of the heavy pollution, during the industrialisation process over the last century, contributing to more efficient use of natural resources and sustainable long-term returns on investments. Preventing future financial crisis. As the title suggest this research will be looking at “How Ireland invests in green energy and investors behavior towards green investments”. The aim of this research is to partially fulfill this gap in the academic space and perhaps to give a seed for future research.

1.4 Approach to the research

In order to answer the research question and achieve the set objectives for this research primary as well as secondary research methods will be employed to gather valid data. The use of secondary data from previous research done on this topic will help with outlining the main themes emerging from the data and that will need further exploration and also to build on robust literature review, as a base for the analysis and the conclusion of the research. For the primary research face-to-face unstructured interviews will be conducted to gather data from figures with various stakes in the green sector in Ireland. Analysing the data collected from both the primary and secondary research the researcher would be able to draw conclusions on how Ireland invests in green energy projects.

1.5 Organisation of the research

The first chapter of the research is the introduction, outlining the background of the problem and the research question and objectives, also the hypothesis be tested. The researcher interest in the topic and the contribution of the research for the academia, as well as limitations of the research are also included in the introduction. The chapter following the introduction is the literature review. The main focus on this chapter is to review the research that was previously done on the chosen topic, and to present the themes arising from the review. More detailed examination of the background of green and ethical investments is included in the literature review as well as it is been supported by previous research. Following is the Irish policy for green investments and the

international influence in the face of EU and UK, profiting from green investments and how the recent financial and economic crisis affected those investments are the last part of the literature review. Chapter three is the research methodology with more detail given of the methods adopted for data collection, the sampling process, the philosophy, approach and strategy of the research following the Research Onion used by Saunders et al (2009), as framework to present the most suitable methods adopted for the research. Following the methodology is chapter four finding and analysis chapter where the data collected from the primary research will be presented and analysed against the data from the secondary research following some discussions. Chapter five will draw conclusions based on the data analysis of the primary and the secondary data and where the hypothesis will be tested. Following this is chapter six, which is self-reflection of learning, outlining the process of completing the dissertation and the effect and the contribution that had on the researcher both in personal and professional level.

1.6 Limitations of the research

The main limitation of this research is population size. In the process of obtaining the qualitative data the time available for the research was very limited, in terms that it took some time for the respondents to reply to emails sent to them, when trying to arrange the interviews. The response rate in general was very low, as well as some of the respondents cancelled the interviews. The time could influence the research in ways such meeting deadline given for the project completion and the interviewees may have limited time to spare for the interview. Further more, the interviewees may not be able to reply to certain answers to the particular interview question due to the questions being too specialized. Interviews can be a time-intensive evaluation activity because of the time it takes to conduct interviews, transcribe them, and analyse the results.

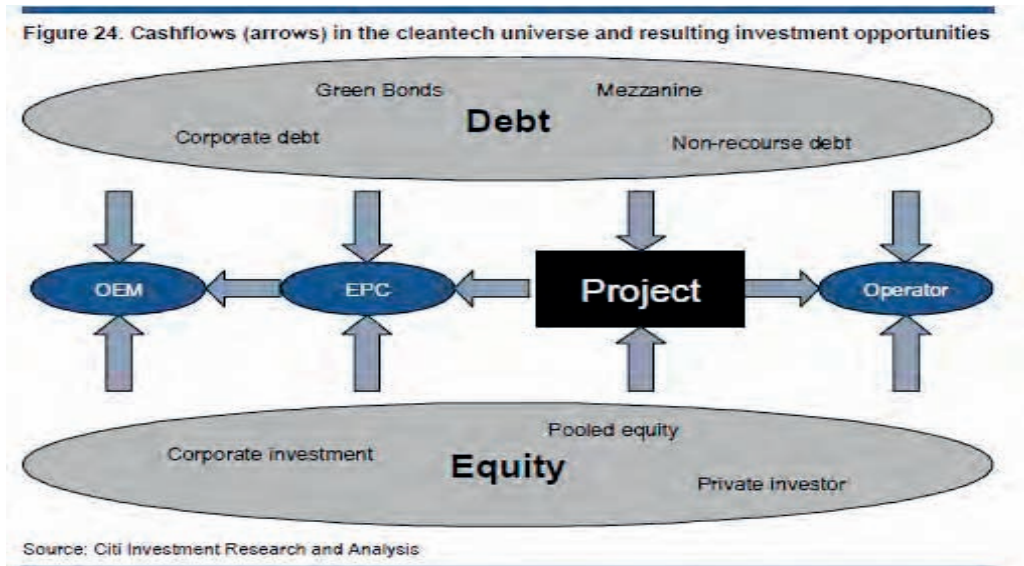
Chapter 2

Literature Review

2.1 Introduction

Over the past few decades“ dramatic growth in population and consumption of natural resources in every continent, increased the need to be thinking how we can continue to survive and grow without consuming our planet. Only recently opportunities to invest in green emerged (*Kimmel, 2010*). In resent research green investments have been described as “the most recent investment niche to emerge from the larger socially responsible investment theme, with more emphasis towards environmental issues” (*Chang, 2012*). Green investments are made in companies, which are taking measures to minimize their carbon footprint or the resources used in the production process and also in companies that produce green energy or ecologically friendly products.

Figure 2.1: Multiple stages in investing in theme

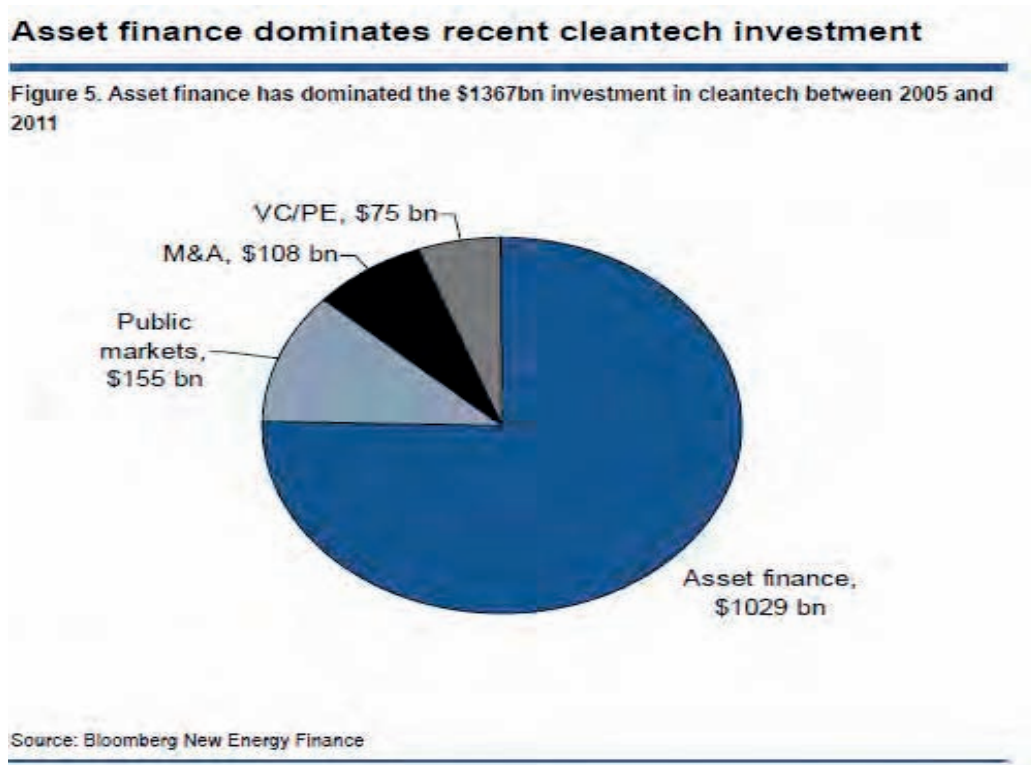


Source: Citi Investments Research and Analysis

The figure above shows the different stages on investment in theme, where the equity investors investing in all parts of the chain and the debt investor typically focusing on Project Debt.

According to the (*Clean Investing*, 2009) report “environmental innovators can be found in many industry sectors, including: sustainable agriculture and natural food supply; renewable energy and energy efficiency; water treatment and conservation; air pollution control and prevention, and recycling technologies”.

Figure 2.2: Breakdown of Cleantech Investment Market



Source: Bloomberg New Energy Finance

2.2 Green Investments

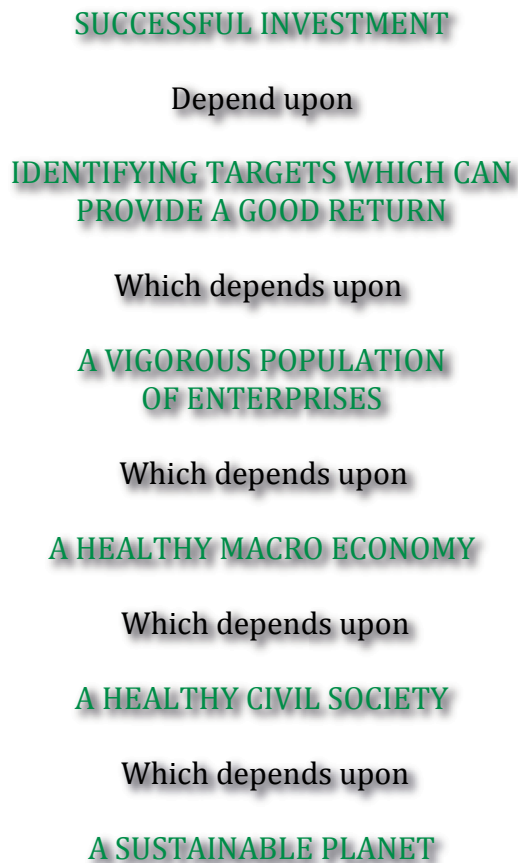
Based on the publications made in the *Green Investing report* (2011), in the years after the recent financial and economic crisis, investments in the green energy sector increased to approximately US\$ 250 billion per annum, however this is only half through, of what the set targets were, meaning that there is financing gap of US\$ 250 billion per annum. “Given the long-term importance of growing the clean energy sector to both help address climate change and provide alternatives to traditional sources of energy, policy makers will need to find ways to make clean energy available at the lowest possible cost” (*Galbreath*, 2011) and (*Green Investing*, 2011).

The literature suggests that the main area of response from companies is, in attempts to reduce greenhouse gas emissions. Study of the FTSE -100 (*London Stock Exchange*) listed companies shows that the largest part of the companies are investing in actions, either technology-orientated or process-oriented aiming to reduce the extent to which they emit carbon dioxide (*Galbreath*, 2011). There are two headlines within the environmental opportunities: FTSE EO All-Share Index includes all the companies that meet the inclusion criteria and have significant involvement in environmental business activities. The other headline is FTSE EO 100 focus on the top ten largest companies by market capitalisation included in the FTSE EO All share index (FTSE).

Several authors argue, that another reason for the recognition and the growing interest of the sustainable investment sector is that the traditional investments fail to take into account the increasing environmental issues (*Robins and Krosinski*, 2009), (*Kennedy*, 2012). In terms of green investments made by individual investors and households, recent research shows that behavioral determinants such as attitudes, beliefs and social norms, are often neglected by policy makers (*Claudy and O'Driscoll*, 2008). The authors further explain that, in the literature covering investments in energy conservation suggest, that such investments are motivated by conviction rather than economics. When purchasing such domestic energy conservation systems the individual investor has direct impact on the environment, reducing its carbon emissions and eventually reduces the energy consumption. The effects of such actions will only be notable, however when the

number of such investments is greater (*Claudy and O'Driscoll, 2008*). One of the most notable barriers in the case of household investments is limited access and high interest rates of the capital required for the initial investment.

Figure 2.3: The constituents of 21st century investment



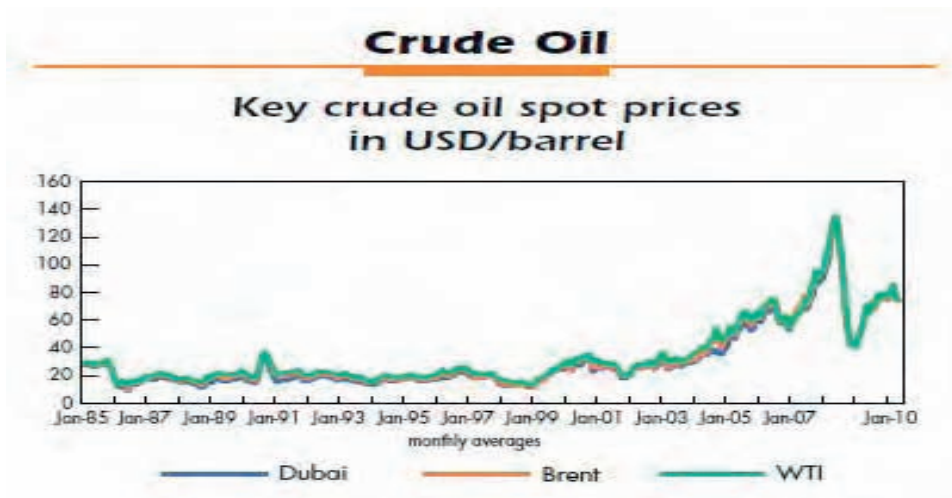
Source: Centre for Tomorrow's Company (2000)

Green investment in solar power remains the market leader and the most accessible option for private investors, interested in such opportunities for European Countries (*Green Investment Guide, 2011*). According to a recent study (*Diffney et al, 2009*) the author argues, “for a small and relatively isolated market such as Ireland, a high penetration of wind is economically sound only if it is accompanied by an increase in interconnection to Great Britain”. For the implementation of such joint effect of building

wind farms, large level of investment will be required in the energy sector for further upgrades of transmission and distribution lines. To stimulate such investments capital costs must be kept down (*Diffney et al, 2009*).

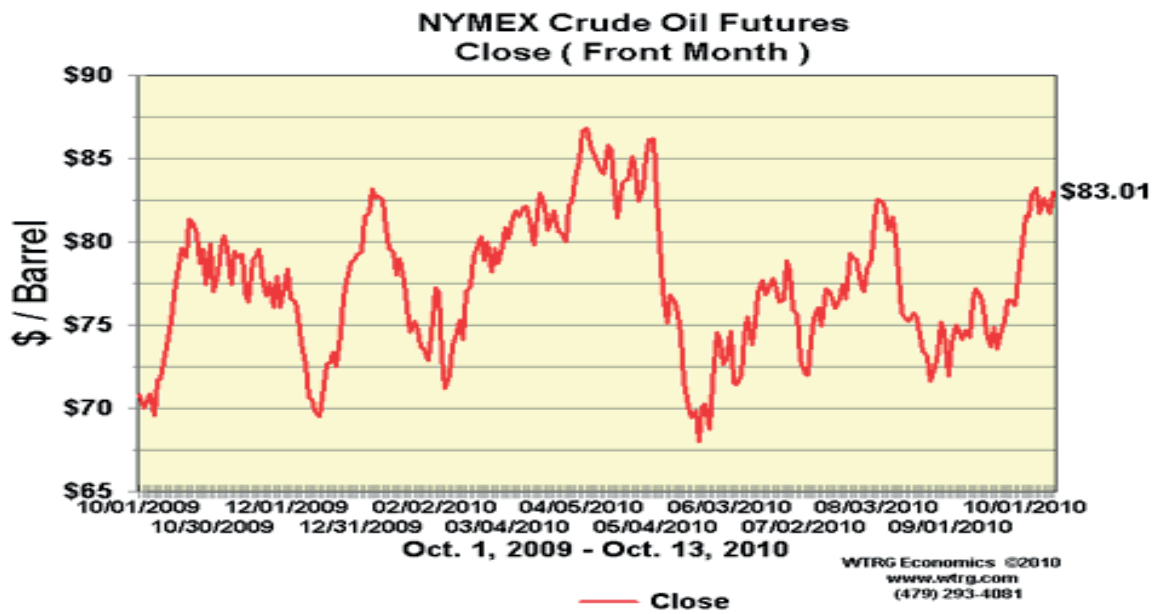
There are expectations for the prices of the green energy are that will decrease in the next ten to fifteen years, which will give a competitive edge of the green energy sector over the traditional fossil fuels such as coal, oil and natural gas. *Schwabe* (2009) argues that there are “opportunities for early investors, which understand the green market and invest logically to capture unparalleled profits”. Investors engaging with the green sector will discover the tremendous potential of the alternative energy industry and learn how to find companies within it that are positioned for a long and lucrative run. Investing in renewable energy or generating electricity is totally different from other energy enterprises in that, that it is highly regulated and its product cannot be stored, also green energy is highly priced compared to the lower price of natural gas. These are currently some of the challenges facing the green energy sector.

Figure 2.4: Global Fossil Fuel Prices - Oil



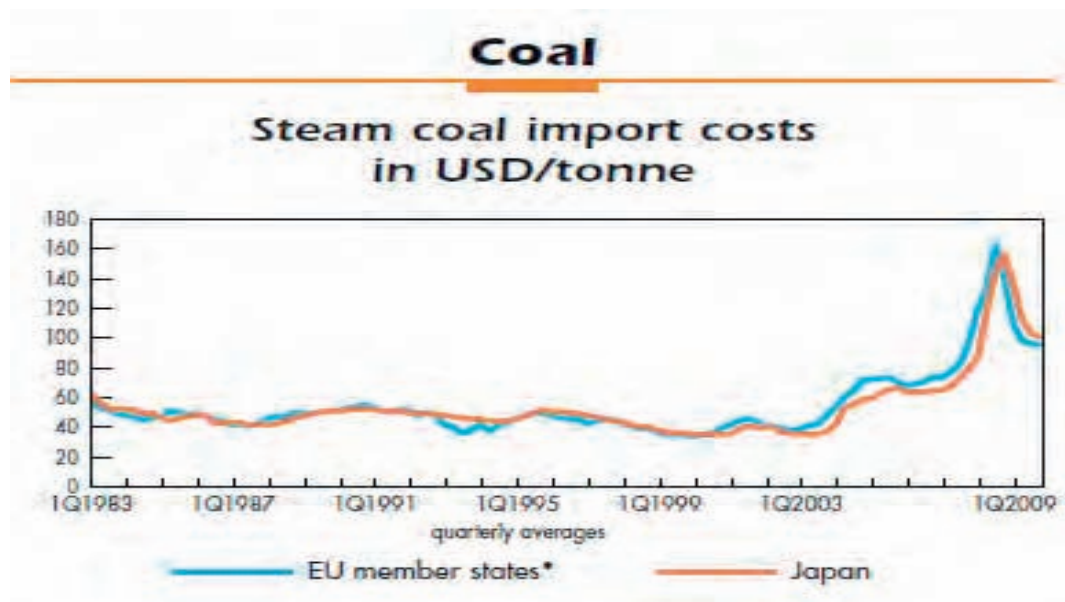
Source: International Energy Agency, Key World Energy Statistics 2010

Figure 2.5: Global Fossil Fuel Prices - Oil



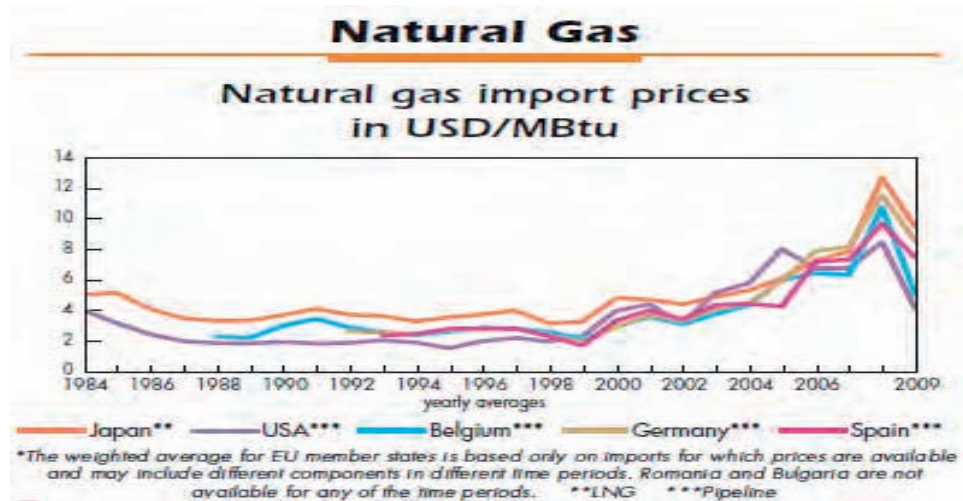
Source: WTRG Economics

Figure 2.6: Global Fossil Fuel Prices - Coal



Source: International Energy Agency, Key World Energy Statistics 2010

Figure 2.7: Global Fossil Fuel Prices - Natural Gas



Source: International Energy Agency, Key World Energy Statistics 2010

The presented above several charts are adopted from the IEA statistics and reflecting the performance in the prices of the natural energy resources or fossil fuels. Over the past twenty-five years is observed gradual increase in the fossil fuel prices with a peak in the years before the financial crises, followed by slight decrease in the economic downturn. According to (Schwabe, 2009) as stated above, such decrease of the prices of the fossil fuels could make renewable energy prices unattractive. The prices for renewable energy generated however are not as volatile. The graphs will be concerned in the building of the theory to test the hypothesis.

2.3 Ethical and SRI Investments

As one of the major investment trends in recent years according to the Chairman of the United Nations Principle for Responsible Investment was the integration of the environmental, social and corporate governance into investment analysis and stewardship (FTSE4Good, 2011).

The investor's decisions whether to invest ethically or not can significantly change their lives and also the lives of others involved. To be able to make ethical decision one need to understand first how other people make ethical decisions

(*Woiceshyn*, 2011). From business point of view making unethical decision could have serious implications to any of the stakeholders of the business argues (*Williams*, 2005).

There is a growing body of literature on ethical investment across a range of disciplines. (*Pasewark and Riley*, 2009, *Woiceshyn*, 2011, *Williams*, 2005, *Hudson*, 2005, *Goyen*, 2005, *Soderbergh*, 2004, *Robins and Krosinski*, 2009, *Nilsson*, 2007, *Glac*, 2008, *Beal et al* 2005, *Jones et al*, 2007, *Lewis*, 2001, *Lewis & Mackenzie*, 2000a) “Ethical investment is defined as the integration of personal values, social considerations and economic factors into the investment decision” (*Michelson et al*, 2004). *Williams*, (2005) define the SRI as investments process that considers the positive and negative social and environmental consequences of the investment the investors based on “rigorous financial analysis”.

Past performance of ethical investments and the ethical investment market sentiment are other factors that influence the investment decisions. Ethical investors choose to buy stocks that meet some ethical criterion based on standard methods of investment returns (*Williams*, 2005 and *Yang et al*, 2007) and they divest themselves of stocks that fail to meet the criterion. Investors can research stocks themselves, or they can buy into ethical mutual funds, offered by many investment firms. In all cases, someone does research on a company’s activities to see, if they pass or fail some ethics test (*Hudson*, 2005).

There has been increase in the number of ethical funds trusts. The Ethical Investment Cooperative in the UK for instance, states itself to be a democratically run organization which provides clients with quality ethical, financial planning advice in a manner that gives clients a chance to say what happens to their investments and that helps them to change corporate attitudes (*Hellsten*, 2006). There is a range of ethical funds in Ireland for Investors who wish to invest ethically, whether based on exclusionary models or thematic ones with green focus. The performance of the ethical funds shows that they such investments can be financially valuable for investors (*Kennedy*, 2012).

Figure 2.8: The multiple styles of sustainable and responsible investing

STRATEGY	DEFINITION
Ethical Exclusions	This refers to exclusion where large number of negative criteria and/or filters are applied (as opposite to just tobacco or weapons, etc.).
Positive screening	Seeking to invest in companies with a commitment to responsible business practices, or that produce positive products and/or services. Includes Best-in-class and Pioneer screening.
Best-in-class	Approach where the leading companies with regard to SEE criteria from each individual sector or industry group are identified and included in the portfolio.
Pioneer screening/ Thematic investment propositions	Thematic funds based on ESG issues such as the transition to sustainable development and low carbon economy. May focus on sectors such as Water, Energy, etc.
Norms-based screening	Negative screening of companies according to their compliance with international standards and norms such as issues by OECD, ILO, UN, UNICEF, etc.
Simple screens/ Simple exclusions	An approach that excludes a single given sector from a fund such as arms manufacture, animal testing, tobacco. Simple screens also includes simple human rights screens and Norms-based screening.
Engagement	Engagement is applied by some fund managers to encourage more responsible business practices and/or enhance investment returns. It relies on the influence of investors and the rights of ownership and mainly takes the form of dialogue between investors and companies on issues of concern. Engagement may extend to voting practices.
Integration	The explicit inclusion by asset managers of CG/ SEE risk into traditional financial analysis.

Source: European SRI Study 2006

The finance discipline of the past decades has developed the bases that the rational for investors is that, their preference is for higher returns, to compensate them for assuming higher risk. “In short, the traditional theory does not allow for any influences on the investment decision apart from maximizing returns given the constraint of the individual’s particular level risk aversion” (Goyen, 2005,).

Financial return remains an important outcome, but is not the only deciding factor when undertaking investment. It is worth examining the processes, by which the business people and investors make their decisions and how these processes affect the outcome, whether to invest in ethical or unethical projects. According to (Rivoli, 2005) however, it is necessary to distinguish clearly between the ethical, social and the economic motives of investors. From the ethical perspective the decision will be made based on the investor’s judgment whether the course of action is right or wrong. The economic decision will be made based on the financial outcome or whether the investment will be profitable or not (McLachlan and Gardner, 2004). Important thing to remember in investing is successfully balancing out the risk-reward equation argues (Hughes, 2010). And according to neoclassical economic theory, ethical investment should not prevail in financial markets (Hofmann, 2007). Ethical investors live a lifestyle consistent with their values. Gender and age are related to ethical investment and the percentage of women, who are interested in ethical investment, is higher than the percentage of male conventional investors based research by (Williams, 2005).

Study conducted among Spanish investors and financial consultants, has highlighted that the percentage of committed ethical investors is marginal, where the ethically aware group is representing forty per cent of the total sample, which “would invest ethically as long, as profitability does not decrease significantly” (Valor et al, 2008). In the UK studies have not found differences in age, gender or income (Lewis, 2002), although a study by EIRIS (1999) (sited in Valor et al, 2008) found that women and the segment of 45 to 55 year olds were more likely to favor ethical criteria over financial returns. Williams, (2005) reject the hypothesis that the SRI investors will be younger in comparison to the traditional investors, based on his research of comparison of SRI and traditional investors in six countries. In fact, based on the research the SRI investors in Germany are significantly older. Australian

researchers have suggested that ethical investors are younger and with higher levels of education, whilst others did not find support for this hypothesis (*Valor et al, 2008*). In study of the investment performance of SRI funds in Australia the authors argue that many of the previous studies done on ethical and SRI investments “are hampered by methodological drawbacks, such as small sample sizes and inconsistencies in the time frames selected”, as well as differences in the approaches use to estimate return performance (*Jones et al, 2007*).

According to (*Valor et al, 2008*) important differences are observed between Spanish individual investors and those of other countries. These differences affect investment strategies, financial requirements and the criteria used. “The results of the survey show that Spanish individual investors exhibit a preference for positive criteria; in particular, they prefer the so called best in class strategy, over the traditional strategies” (*Valor et al, 2008*).

Another study conducted among British investors (*Lewis and Mackenzie, 2000a*) showed that they were reluctant to pursue the engagement strategy that is, using investments to campaign for change, but would support “soft” engagement measures such as offering advice, lobbying or contributing to debates about corporate ethics. The authors conclude that British investors prefer not to buy shares of companies doing harm, unless the company has a clear record. The survey of 1,146 ethical investors in UK (*Lewis, 2001*) (*Lewis & Mackenzie, 2000a*) reveals that the profiles of the ethical and the traditional investors is pretty much the same. The question was: “How might morality be relevant to investment decision?” The study was a focus group of mix of ethical and traditional investors, which were discussing their motivations for investing. As described by (*Lewis, 2001*), the ethical investors take into account the normal financial considerations of risk and return, however they will have requirements for the companies that they will invest in not to be engaged with heavily polluting the environment, involved with child labor, producing arms and tobacco. The major difference between the two groups is that when making investment decisions the ethical investors put their sympathies into action, “thereby maintaining a coherent lifestyle given their career choices and other connections” (*Lewis, 2001*).

According to study of (Lewis and Mackenzie, 2000b), most of the British participants had ethical and non-ethical investments (two out of one hundred respondents had only ethical investments). Most of their capital was invested in non-ethical products - 71 per cent, even when they did not generally believe that ethical investments were riskier. Nonetheless, a large number of respondents 42 per cent still believed that profitability rates were lower in ethical investments than in other products. Other studies in the UK (Henderson Global Investors, 2005) have reached the same findings. The study of American ethical investors (Rosen et al., 1991) found that, on average, 49% of their funds were invested ethically.

2.4 Government Policy

One of the major factors contributing to the growth of the industry is the Kyoto Protocol that was adopted in Japan in 1997. The protocol sets binding targets for 37 industrialised countries and the European community for reducing the overall emissions of six greenhouse gasses (Carbon Central, 2009). Many governments have also introduced incentives such as tax reductions to investors and feed-in tariffs for energy generated from renewable energy sources. Passed in the US, the Emergency Economics Stabilization Act of 2008, offers 30 per cent tax credits to any business investment related to solar energy before the end of 2016 (US Department of Energy, 2008) cited in (Green Investing, 2011). Investors who are interested in the potential in the solar energy sector may find it a relatively new idea. To begin with, it is important to find out first, which are the countries who are ahead of their targets, and who are further behind. Ireland's overall target is sixteen per cent of gross final energy consumption to come from renewable sources by 2020 (Renewable Energy in Ireland, 2010). The forecast for the green energy sector are for strong growth, however government policy and support are important factor for investors to consider when making investment decisions. In response to the current economic crisis the Spanish government launched stimulus package of EUR 11 billion in late 2008 early 2009 in research and development and environmental projects, with main objective been growth and development of the green economy. The strategy is containing short-term packages aiming to introduce long-terms reforms and moving towards sustainability, low-carbon transport and additional support for renewable energy generation (Strietska et al, 2011).

Another factor pointing to strong demand for clean energy in coming years is the likelihood of a return to higher energy prices. Furthermore, to help build long-range consensus on green energy, “policy makers ensure that the benefit of low-cost clean energy is passed on to the consumer or taxpayer rather than accrued to the clean energy sector” (*Green Investing*, 2011). In 2009, governments around the world pledged to invest unprecedented sums in clean energy, primarily to stimulate their economies.

The UK Government is committed to achieving the transition to a green economy and delivering long-term growth. However, this transition requires long - term investment, with an estimated value of up to £200 billion in the energy system alone over the period to 2020 (*Ofgem*, 2009), and further significant investment in other key green sectors such as transport, waste, water and flood defenses. The UK Government announced in its Government’s Coalition Agreement in 2010, and in the budget for year 2011 made provision of £3 billion over the period to 2015 to fund Green Investment Bank (GIB) with. “The GIB will become a key component of the transition to a green economy, complementing other green policies to help accelerate additional investment” (*GIB*, 2011).

2.4.1 Irish Policies for Green Investments

The development of renewable energy is central to overall energy policy of Ireland, as well as it reduces the greenhouse gas emissions and the country dependence on fossil fuels, thus creating environmental benefits and delivering green jobs to the economy. Ireland has exceeded its emissions limit by approximately ten to fifteen per cent. According to (*Stapleton et al*, 2006) the Irish government decided not to implement Carbon Tax policy back in 2004, as a tool to reduce the CO₂ emissions. The authors also argue that this government decision may have been a lost opportunity, and an effective way to influence the taxpayer to reduce their carbon footprint (*Stapleton et al*, 2006).

Consequently, Irish companies are expected to invest billions of EUR over the coming decade to build more efficient renewable energy infrastructure - much of it is encouraged by Government policies and supported by publicly funded subsidies

(*Strategy for Renewable Energy 2012 – 2020*). The prices of international fossil fuels have created huge upward pressure on Irish electricity prices in recent times increasing the need to support renewable energy generation. Also, under EU mandate, Ireland is legally obliged by 2020 to get sixteen per cent of its total energy consumption from renewable sources and to reduce greenhouse gas emissions by twenty per cent in sectors that fall outside the EU Emissions Trading Scheme (*Strategy for Renewable Energy 2012 – 2020*). In the recently published report - Ireland's National Renewable Energy Action Plan (*NREAP*), by the Department of Communications, Energy and Natural Resources, important issues were raised in regard of funding the renewable energy generation and the appropriate scale of investment. The plan outlines the two possibilities. The first one is to achieve its commitment of sixteen per cent of energy to be generated by renewable sources by year 2020 and the other one is rather "ambitious export scenario", which will require further investment in energy infrastructure, that will include offshore wind and marine renewable technologies (*NREAP, 2012*). Apart from the stimulus packages available, by improving the access to credit and lowering the cost of debt and addressing barriers for investors such as lack of information, obstacles to grid and administrative issues, governments will attract much larger proportion of green individual investors.

What must be considered given contingent risks is the extent to which investment in renewable energy resources can be justified to meet the set targets. Increasing the investment for renewable energy generation will help the country to reach the set 2020 targets, however there will be no material contribution towards reduction of the greenhouse gasses (*NREAP, 2012*).

The main goals that the Irish Government has set in its strategy for renewable energy 2012 – 2020 are to increase onshore and offshore wind farms, creating sustainable bio energy sector, encouraging research and development in renewables such as wave and tidal energy and growing sustainable transport infrastructure. Due to its resources and ambitious targets, Ireland is seen as a good investment opportunity from green investors mainly in the wind energy generation. However uncertainty remains the biggest factor that may hinder future investments (*Strategy for Renewable Energy 2012 – 2020*).

Over the past few years “Green IFSC” was established in Ireland with main mission to promote the country as “world class center for green finance and enterprise, with the ability to create and sustain employment” (*NREAP*, 2012). Employment and Investment Incentive scheme (EII) was developed to accommodate green projects based in Ireland. The incentive is available individual investors allowing them to obtain income tax relief of 30 per cent on their investments with further 11 per cent subject to eligibility. The incentive is available to small and medium companies, with some restriction regarding the nature of the business (*EII*, 2012). With some tailoring of the incentive, green projects will be eligible for this relief, which will boost the volume of such initiatives. For the long-term sustainability of the energy generation and supply, the set 2020 targets, have to be met, however there is growing pressure for the government for reducing the subsidies for renewable energy to keep the energy prices affordable for consumers (*EII*, 2012).

2.4.2 International policies

Ireland has set one of the highest targets in the world for greening the economy by producing 40 percent of its energy from renewable sources by year 2020 according to the International Energy Agency (*IEA*, 2012). However the country heavily reliance on imported fossil fuels will require substantial amounts invested in improving the energy efficiency, renewable technologies and expansion and integration of smart grid network, that will manage the generation and the transport of electricity to the end users (*NREAP*, 2012). The above reports also outline, that more than 250 million tones of greenhouse gas emissions can be saved by integrating wind power and smart grids, which will also generate value of EUR 15 billion by year 2050 and could reduce the reliance on imported fossil fuels by 50 percent. In response to G8 request the IEA developed low-carbon “energy technology road maps” covering technologies such as biofuels, energy efficient buildings and wind and tide energy generation and storage. The role of the governments however, is to implement and monitor these policies to really make a difference (*IEA*, 2012).

Irish and UK Governments were discussing the potential for trade between the two countries in renewable electricity according to the government document. The

Ministers agreed to process for development of a formal “Memorandum of Understanding on renewable energy trading between the two countries with the aim of finalizing it by the end of the year 2012” (*NREAP*, 2012). In addition to its critical contribution to energy supply in Ireland and the meeting of the national targets set for year 2020, the country renewable energy resources have a rich potential for the development of an export industry to UK in the first instance, and to North West Europe over time. The renewable energy resources, both onshore and offshore are greater than the national energy requirement and the Irish Government is committed to work with the UK Government and the European Commission and the EU Member States to create framework and conditions for renewable energy export (*NREAP*, 2012).

The UK Government has introduced already that will impose gradual reductions in its support in the renewable sector, five per cent will be cut of by year 2015 and then further down in the year after. According to government records onshore wind is an attractive opportunity for investments, considering the abundance of the resource and the reducing cost of the wind technology (*IEA*, 2012). Onshore wind is currently the cheapest and largest to renewable energy generation in the UK. The share of government stimulus to investors in green energy varies between different countries, with the US and European Union having the largest share such as tax credits and financial incentives. As the report states “Clean Energy New Deal must be seen as long-term commitment that extends well beyond the limited time horizon of the economic stimulus package” (*IEA*, 2012)

According to (*Henderson Global Investors*, 2005) cited in (*Robins and Krosinski*, 2009) the emissions of greenhouse gasses from some of the companies involved in production of fossil fuels, listed on the London Stock Exchange, account for 15 per cent of the global emissions, which is particularly pronounced against the 2 per cent of the world population.

2.5 Impact of the Financial Crisis on the Green Investments

What was defined as some of primary reasons for the recent financial crisis were the “investor short-termism, misplaced incentives and inadequate regulation of risk” (*Robins and Krosinski*, 2009), (*Honohan*, 2010), (*Regling and Watson*, 2010).

Following the introduction of the global regulatory standards after the financial crisis, much stricter measures for capital adequacy and market liquidity is imposed on banks and financial institutions when providing long-term financing. Grounded on the bases of SRI and ethical investment, investing in green (sustainable) is based on the understanding that the incorporation of the “long-term environmental, social and economic factors into investment” is the way of obtaining risk-adjusted returns. “Sustainable investing thus expresses a new common sense for financial markets” (Robins and Krosinski, 2009).

In her recent publication (Kennedy, 2012) states that according to investment managers in Ireland before the financial crisis, “when markets were going up and people were better off”, the interest for green and ethical investments were much greater. Perhaps the reason behind it is that people are focusing on preserving capital rather on ethical consideration. According to Deutsche Bank report on sustainable investing (2012) cited in (Kennedy, 2012) “if sustainable investing is considered as a norm, not as a niche can be a winner for investors and companies”.

Figure 2.9: FTSE4Good Environmental Leaders Europe 40 Index



Source: FTSE4Good Five Years Performance Analysis

The figure above shows five years trend of the leading European companies, which demonstrate best practice environmental management, minimise environmental

risk within their portfolios and capitalise on the benefits of strong environmental management. No Irish company appears on any of the FTSE4Good indices. FTSE access companies by five inclusion criteria and investors can track the performance of ethical investments via dedicated indices for stocks meeting those criteria.

What impact on green energy investment the recent financial and economic crisis was going to impose and the consequences for the energy security and its long-term sustainability, was a major concern for governments. Decline in investments in the renewable sector, could expose leading long-term projects in risk, which can cause shortage in supply and rising prices for energy (*IEA, 2012*). Lower prices of fossil fuels as well make green energy investments unattractive. Taking all this in to account will justify government interventions for supporting the investors. However there is always the risk of such government interventions resulting in overinvestment and excess capacity, driven by “over-optimism” about economic growth. The importance of taking measures towards reducing the level of greenhouse gas emissions resulting from energy generation or decarbonization is outlined clearly in the recent (*IEA, 2012*) report. Such measures will require joint efforts from all countries for “development of global carbon market, innovative policies and regulatory framework” to reduce the current upward trend in emissions. On the positive stance following the financial crisis the opportunity is presented to policy makers to reform or remove expensive and environmentally harmful policies, notably subsidies to fossil fuel based energy consumption.

2.6 Profits from Green Investments

According to (*Smart, 2010*) the first step toward profiting from the green investments is appreciating its scope and identifying the ways that existing skills, connections and businesses can dovetail with it. While according to (*Watt, 2009*) there is a green gap between intention and action and that people’s professed interests in ethical choices can evaporate when it comes to actually making an investment. The UK Sustainable Investment and Finance Association points out, that investor’s demands for ethical behavior from companies and the Government are rising.

According to (*Yang et al, 2007*), “the energy investors have the opportunity or option but not the obligation to invest in a project in a period of time”, the authors

outline that the widely used methods for project appraisals are traditional methods such as discounted cash flow or payback period. However “such measure may be biased against investments whose most significant benefits come after their payback period” (*Yang et al, 2007*), may be the case with green investment as they are long-term.

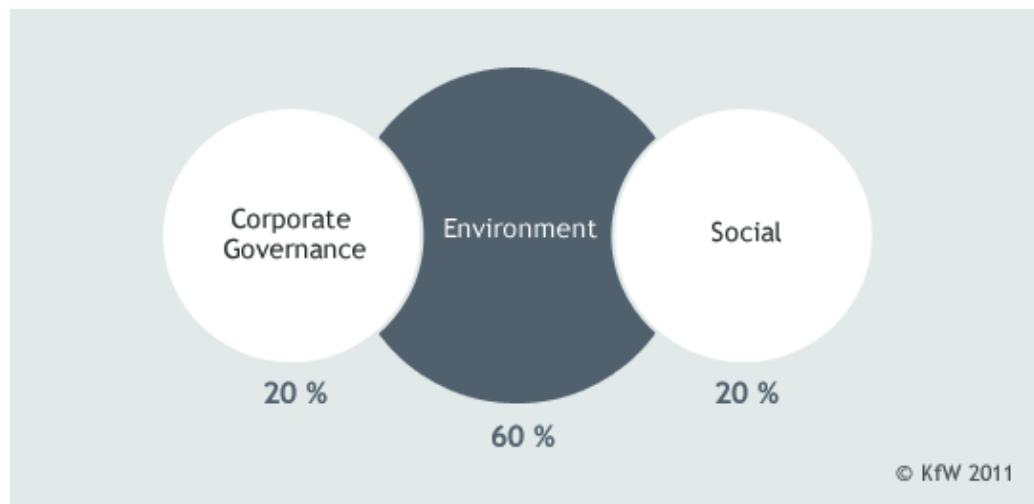
The time is right to invest in green business, as green investments tend to make higher, longer and more suitable return than traditional stock. The demand for green investments is growing rapidly however “the future of green investing likely depends on its ability to deliver returns that are competitive to benchmark returns” (*Chang, 2012*). In the US significant amount of the economic stimulus is allocated for alternative energy technology and generation and the companies focusing on energy conservation will become more valuable. The US Government subsidizes and mandates the production and also the usage of biofuels.

One key insight is that attitude toward investing is only partly described by the concept of risk tolerance. Over the past several years what has attracted attention is the progress that has been made in cutting clean energy equipment costs, particularly in the area of solar photovoltaic “as investors and lenders grow more comfortable with the risk profile of clean energy projects, they are more likely to offer capital at lower cost” (*Green Investing, 2011*). Cost of equity for the investors providing capital to green energy projects have a range of risk/return profiles and require 10 per cent equity return, however expectations could be higher or lower. In addition, financiers are finding new and creative ways to bring down the overall cost of capital by reducing or spreading risk (*Green Investing, 2011*). Considering the country stability and long-term certainty for green investment the investors regard lower risk and therefore lower returns. Different policies in different countries will also impact on the capital structure of the project or debt-to-equity ratios.

According to a recent Roper poll (*Kalter, 2008*) and (*Kennedy, 2012*) investors are extremely interested in the growing environmental sector, but their advisors are failing to suggest it. Commissioned by Allianz Global Investors “the poll queried 1,003 adults who make their family's investment decisions”, and found that 71 per cent chose environmental technology as the most desirable of seven major sectors; 54 per cent said the environment would be an important focus for them in the future; and nearly half hoped to make a green investment in the next year; over 70 per cent said

they will need a financial advisor to guide them and suggest that green investing may be one of the best long-term bets in a generation. *Kalter*, (2008) argues that green investments were a niche market, but not a way for investors to meet their long-term financial goals.

Figure 2.10: Portfolio Inclusion Criteria by KFW



Source: KFT Bank (2011)

The investment companies wishing to make sustainable investments, base their decisions both on their own in house research and the research done from rating agencies of the ecological, sustainability and social performance of the investment candidates. The main approaches used are for the investment then are based on either customer specific requirements or standard package investment based on the evaluation of the performance of the investment candidate. The above figure show the requirements bank have to orientate its investment practices towards sustainability and perhaps encourage other market players to make sustainable investments (KFW).

Responsible investors are also focusing heavily on emerging markets as they seek to diversify their equity investments in these markets are increasingly becoming the focus of global investor and corporate responsibility initiatives. Another way is to find funds that invest only in green companies, which do not cause any environmental impact, or focus on emissions reduction and energy efficiency. The longer-term question is whether green investing will follow the giant boom-and bust cycle of the

Internet explosion of the late 1990's. Today truly transformative green technologies, by contrast, have yet to even be developed (Kalter, 2008). Lack of information is often holding back investment in some key sectors such as new businesses and technologies. The investment made in bringing forth that knowledge becomes a public asset (Stiglitz, 1999), and the originator sees a fraction of the total return for the efforts.

According to Green Investment Bank (GIB) presentation, green sector such as offshore wind, where market returns are uncertain and truncated by capped levels of policy support, the returns may not be high enough to support capital allocation at the rate demanded and the risk perceived (GIB, 2011). Analysis of 135 mutual funds with "extra-financial objectives" demonstrates that the world's sustainable investing equity funds outperformed the main investment benchmarks – the MSCI World, S&P 500 and the FTSE 100 – on a one, three and five year basis to the end of 2007 (Krosinsky, 2008). Sustainability funds also outperformed purely ethical portfolios.

Figure 2.11: Annual Returns MSCI World and MoRE World

	ANNUAL RETURNS							
	2005	2006	2007	2008	2009	2010	2011	2012
MoRE World	14.15%	18.76%	17.98%	-39.02%	31.58%	17.99%	-3.83%	9.03%
MSCI World	7.42	17.95	7.09	-42.08	26.98	9.55	-7.62	8.17
Outperformance	6.73	0.80	10.88	3.06	4.60	8.44	3.78	0.86

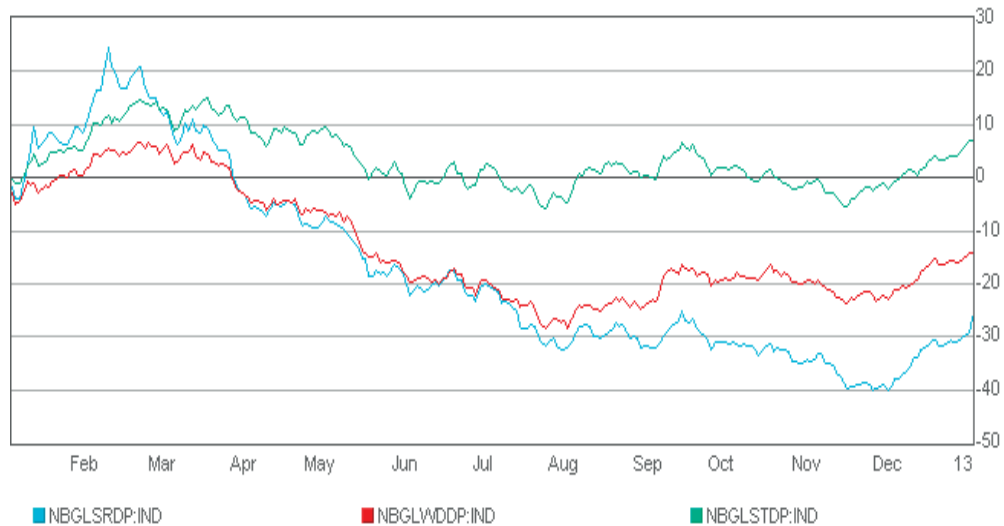
MORE WORLD IS A PORTFOLIO OF LARGE CAP GLOBAL LISTED COMPANIES, SYSTEMATICALLY DERIVED FROM RESOURCE DATA. IT REPRESENTS THE TOP 10% OF RESOURCE EFFICIENT COMPANIES FROM EACH ICB SECTOR, EX-FINANCIALS. RETURNS USE LIVE DATA FROM AUGUST 2011 AND A BACK TEST OF THE MODEL FROM JAN. 2005.

Source: Harvard Business Review, (2012)

The table above compares the performance of the widely tracked MSCI Global Equity Index, which is used as benchmark for over 500 exchange traded funds and MoRE World Resource Efficiency Fund. The comparison shows that the companies that are more efficient in their use of resources tend to produce higher

return on investments and outperform traditional investments (*Harvard Business Review, 2012*)

Figure 2.12: NYSE BNEF Global Clean Energy Sector Indexes



Source: Bloomberg New Energy Finance

The New York Stock Exchange (NYSE) and Bloomberg New Energy Finance (BNEF) co-publish clean energy indexes, tracking the most active companies world wide, allowing investors to see detailed overview of the growth of different clean energy companies. The companies included operate in the solar and wind, energy smart and energy efficiency and the smart grid (*BNEF*).

2.7 Conclusion

To quickly summarize, the aim of this research is to determine what motivates Irish investors invest in green projects and companies and what are their attitudes, values and beliefs towards green investments. What will be the deciding factor whether to make green investment or not, is it concern for the environment or the higher returns on investment and government incentives associated with the green investments. The literature review section outlined some of the previous work that has been done in the field of green, ethical and SRI investments, the investor's behavior towards ethical investments and the importance of the green investments for reducing the greenhouse gas emissions and mitigating the effects of the global warming, sustainable economy and clean environment. Further more what the government policy is for green investors and how this policy stimulates such investment, as well as the effect of the recent financial and economic crisis on the green investments.

Chapter 3

Research Methodology

3.1 Introduction

The aim of the following part of the research project is to outline the methodology and methods for data collection chosen by the researcher. That will identify the research philosophy and approach, the research strategy and design. Followed by brief explanation of the types of methods for data collection and choosing the most suitable one for this research, the ethical considerations for conducting the project and the time horizons.

Methodology is the theory of how the research should be undertaken or the overall guiding principle (Guba and Lincoln, 1994). *Saunders et al, (2009)* define research as “something that people undertake in order to find things in a systematic way, thereby increasing their knowledge” and the “methods for data collection are the actual techniques and procedures in this process, all data should be obtained and interpreted in a planned manner” (*Saunders et al, 2009*). “For any research paradigm both qualitative and quantitative methods can be used” (*Saunders et al, 2009*). For the completion of this project qualitative research is preferred over quantitative research. The qualitative research is based on assumptions that are very different from quantitative design. Theory is not established prior the research and the knowledge developed from the collected data, will be the base for developing the theory. If the researcher use quantitative methods for this particular research would not be able to obtain the desired data and the objectives and the research question would not be answered in a meaningful way.

According to (*Eisner, 1991*) “the researcher is the primary instrument in data collection” and will use specific research techniques and methods to obtain the qualitative data. It will provide rich, detailed information about activities, events, occurrences, and behaviors that will allow the researcher to define and better understand actions, meanings, problems and processes. What the researcher is aiming to achieve, is to gather understanding and develop theory in a relatively new area. There is a variety of research done previously in the area of green, ethical and socially

responsible investments (SRI) internationally. However the researcher was not able to obtain specific academic data, concerning Irish green and ethical investors. In this order the researcher is aiming to obtain data concerning the personal believes and values of the investors or more precisely the Irish investors. What motivate them to invest ethically and what factors are deciding in the selection of investments. What are barriers they face, when approaching such investments. To answer the specified research questions and the research objectives obtaining qualitative data will be much more valuable than quantitative for this research.

Figure 3.1: Differences between Quantitative and Qualitative Data

Quantitative data	Qualitative data
<ul style="list-style-type: none"> • Based on meanings derived from numbers • Collection results in numerical and standardised data • Analysis conducted through the use of diagrams and statistics 	<ul style="list-style-type: none"> • Based on meanings expressed through words • Collection results in non-standardised data requiring classification into categories • Analysis conducted through the use of conceptualisation

Source: Saunders et al, 2009

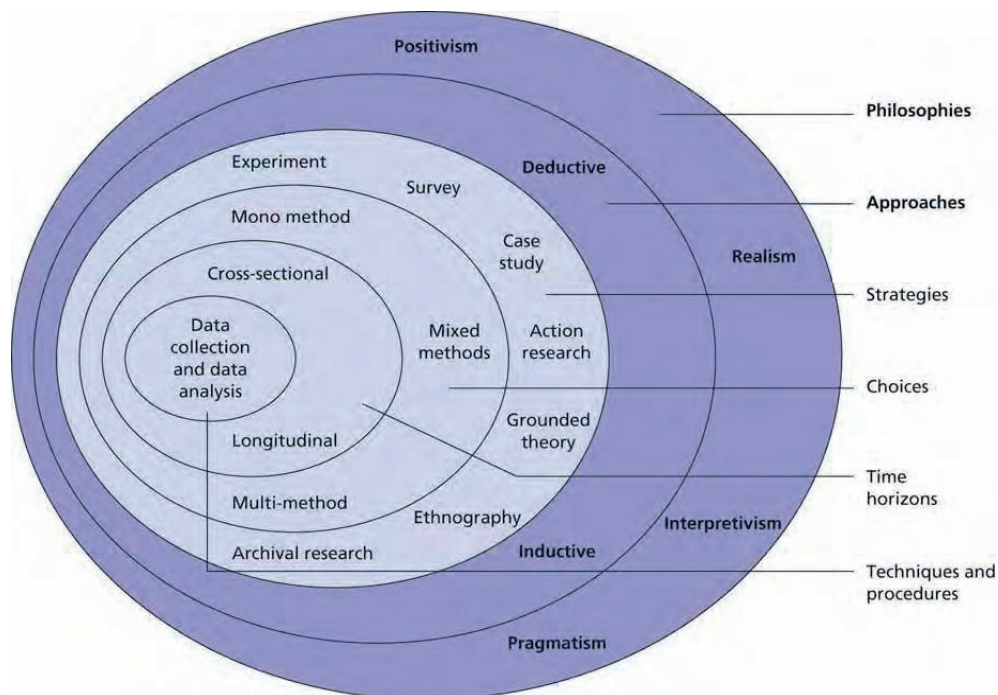
Qualitative research is used to describe how individuals perceive their own experiences within a specific context and to seek an understanding why something occurs. There are few disadvantages of data gathered by interviews, as it can be biased, time intensive, dependent on the technique and the ability of interviewer to obtain data and is case specific. (Gillham, 2005)

The quantitative research on the other site uses closed – end questions for data collection, which limits the responses of the participants to predetermined answers set by the researcher and are not providing deeper understanding of the specific phenomena (Gillham, 2005).

Saunders et al, (2009) use “research onion” which presents clear framework for the most suitable methods and strategies to address the research, “it promotes

knowledge to answer the research question”. The researcher will follow this model to outline the research design, approaches and strategy undertaken to and answer the research question.

Figure 3.2: The Research Onion



Source: Saunders et al, 2009

A paradigm emphasizes the researcher view of the world. Ontology concentrates on” the way the world operates and the commitment held to particular view” (Saunders et al, 2009). Ontology formally determines the concepts and the links between them in a specific area of knowledge, improves communication through shared understanding of knowledge of what already exist.

Epistemology is “the study of knowledge and justified belief. It is about issues having to do with the creation and dissemination of knowledge in particular areas of

inquiry” (Saunders et al, 2009). Epistemology studies attempt to identify what truly is

Figure 3.3: Competing Paradigms in Qualitative Research

Basic Beliefs (Methaphysics) of Alternative Inquiry Paradigms

<i>Item</i>	<i>Positivism</i>	<i>Postpositivism</i>	<i>Critical Theory et al.</i>	<i>Constructivism</i>
Ontology	naïve realism - “real” reality but apprehendable	critical realism “real” reality but only imperfectly an probabilistically epprehendable	historical realism - virtual reality shaped by social, political cultural, economic, ethics, and gender values; ccrystallized over time	relativism – local and specific constructed realities
Epistemology	dualist/objectivist; findings true	modified dualist/objectivist; critical tradition/community; findings probably true	transactional/subjectivist; value-mediated findings	transactional/subjectivist; created findings
Methodology	experimental/manipulative; verification of hypotheses; chiefly quantitative methods	modified experimental/mental manipulative; critical multiplism; falsification of hypotheses; may include qualitative methods	dialog/dialectical	hermeneutical/dialectical

Source: Guba and Lincoln, 1994

3.2 Research Philosophy

“The research philosophy, contain important assumptions about the way in which we view the world, which will underpin the research strategy” (Saunders et al, 2012). Johnson and Clark, (2006) as cited in (Saunders et al, 2009) note that “the business researcher needs to be aware of the philosophical commitment chosen for the research strategy as this will impact not only on what we do, but what is it we are investigating”. The philosophy that will be adopted for the research will be influenced

by the researcher's view between the knowledge and its process of development and the different resources and strategies applied.

Bellow, there is a description of the major ways of thinking about research philosophy, each of which contains important differences, which will influence ones perspective about the research process.

3.2.1 Positivism

Positivism philosophy is based upon the notion that only clear facts will lead to the production of "credible data, under positivism one will prefer working with an observable social reality and that the end product of such research can be law-like generalizations similar to those produced by the physical and natural scientist" (*Saunders et al*, 2009). If the researcher's philosophy reflects the principles of positivism, then will probably adopt philosophical stance of the natural scientist. Positivist may use existing theory to develop and test the hypotheses, to generate the research strategy and collect data. According to (*Gill and Johnson*, 2010) cited in (*Saunders et al*, 2012) "the positivist researcher is likely to use highly structured methodology and quantitative observations that lend themselves to statistical analysis".

3.2.2 Realism

The realism can be observed in the study of business and management where various social forces and processes influence the human behavior, despite the fact that individual is actually unaware of these forces "it can either be direct realism or critical realism" (*Saunders et al*, 2009).

3.2.3 Pragmatism

Tashakkori and Teddlie (1988) cited in (*Saunders et al*, 2009) argue that the researcher should study in ways that are most appropriate, study what adds value and is of interest and to use the results in a ways that are aligned within the researchers value system. Pragmatists also recognize there are multiple realities and always use multiple methods for their data collection which will advance the research (*Kelemen*

and Rumens, 2008) cited in (Saunders et al, 2012).

3.2.4 Interpretivism

According to (Saunders et al, 2009) number of researchers argue, “that complexity of business and management in social world is too much to generate law - like generalization”. When studying behavior is best to describe and explain it from the point-of-view of those involved. There are arguments that “in the case of business and management research interpretivist perspective is highly appropriate” (Saunders et al, 2009).

The philosophy considered that reflects better this research is interpretivism. According to (Saunders, et al, 2009) the epistemological philosophy of interpretivism is correlated with the researcher’s understanding of the human’s perceptions for the world. Interpretivists see facts, as the product of human interactions – they are the product of shared understandings and meanings and are not always predictable. “The focus of interpretivism is not on numbers but on words” (Saunders et al, 2009). The most often used techniques for data collection are qualitative in depth investigations and small samples.

Advantages - facilitates understanding of “how” and “why” in the social process, also enables researcher to respond to changes that occur in the research process.

Disadvantages - data collection can be time consuming and difficult to analyse, and also the researchers must expect to face some uncertainties in the research process.

For achieving the objectives of the study the researcher will use face-to face unstructured interview to obtain rich qualitative data theinterpretivist methodology also leans towards the collection of qualitative data using methods such as unstructured interviews and participant’s observations. According to (Gillham, 2005) the main features of the face-to-face interviews are:

- “There is interactive relationship between the interviewer and the interviewee, which allows clarifications or explanations to be made.

- The interviewer has a chance to take advantage of opportunities that may arise in this particular real-life setting.
- The key distinction from questionnaires with provided choices of answer is, that when the questions asked and the topics raised are open, the interviewee determining their own answers. The researcher can develop skills, facilitating the disclosures of the interviewee” (*Gillham, 2005*)

As outlined above the aim of the researcher is to gather rich qualitative data, which will allow for the set research questions and objective to be answered and also to develop the concepts and theories emerging from the data to test the hypothesis. If quantitative is used the data gathered, will be based on predetermined answers and will not be suitable for this particular research.

3.3 Research Approach

The research philosophy enables the researcher to take a more informed decision about the research design (*Easterby-Smith et al, 2008*) cited in (*Saunders et al, 2012*), “is a principle of how the data about a particular phenomenon is to be collected, analysed and used”. The second layer of the “research onion” is the research approaches. *Saunders et al, (2012)* outline deductive, inductive and abductive approaches to conduct research.

3.3.1 Deductive research approach is in which the researcher develops theory and hypothesis, and design a research strategy and collect quantitative data to test the hypothesis. This approach would use highly structured methodology and large sample population and characterise quantitative research.

3.3.2 Inductive research approach is in which data is collected using semi structured or unstructured interviews, “which enables the researcher to better understand the nature of the problem” (*Saunders et al, 2012*). Based on the analysis of the collected data the researcher develops theory often expressed as a “conceptual framework”. The strength of the inductive research approach is developing

understanding of how humans interpret their social world. Inductive approach will use relatively smaller sample population and work with qualitative data.

3.3.3 Abductive approach is a “combination of deductive and inductive approaches which compliment the abduction as a logic for testing plausible theories” (Saunders et al, 2012)

The researcher will be using inductive approach to assess the data. The primary purpose of the general inductive approach is to “allow research findings to emerge from the frequent, dominant or significant themes inherent in raw data” (Bryman and Burgess, 1994). Findings are shaped by the assumptions and experiences of the researchers conducting the research and carrying out the data analysis. In order for the findings to be usable, the researcher must make decisions about what is more important and what is less important in the data, therefore study of small sample of subjects might be more appropriate (Saunders et al, 2009).

This is achieved by a process of continuous refinement of the data, into a select set of categories that convey meaning. Assumptions for the general inductive approach include:

- Data analysis is determined by both the research objectives (deductive) and multiple readings and interpretations of the raw data (inductive).
- The mode of analysis is the development of categories from the raw data into a model or framework that captures key themes and processes judged to be important by the researcher.
- The research findings result from multiple interpretations made from the raw data by the researchers who code the data.
- Trustworthiness of findings is assessed by a range of techniques including triangulation within a project (Bryman and Burgess, 1994).

3.4 Research Design

The research design is the general plan of how the researcher intends to answer the set questions. There is relationship between the chosen data collection technique and the obtained results. When choosing the research methods techniques the researcher has several options: mono method, mixed methods and multi methods (Saunders et al, 2009).

3.4.1 Mono method will combine single qualitative or quantitative data collection technique. The qualitative method for data collection could be in-depth unstructured interviews, with qualitative data analysis procedures or quantitative data collection using surveys or structured questionnaires with quantitative data analysis.

3.4.2 Multi –method the researcher may adopt more than one technique for data collection, but would not mix them. Using only quantitative techniques and procedures for collecting and analysing the data or only qualitative techniques and procedures to collect and analyse the data. In the mixed methods approach both qualitative and quantitative data collection techniques and analysis are used for the research design, either in parallel or in sequence. Even though mixed methods are used qualitative data will be analysed qualitatively and quantitative data will be analysed quantitatively (Saunders et al, 2009).

For this research the mono – method technique will be used for data collection using in-depth interviews. Interview types can be “classified as structured, semi-structured and unstructured interviews”. The unstructured interview is chosen as method for data collection, as it allows the researcher to get broader understanding and detailed data “as the interviewee is able to talk freely about events, behavior and beliefs in relation to the topic area” (Saunders et al, 2009).

The main purpose of a qualitative interview is to understand the world from the respondent’s point of view. The researcher chose the unstructured face-to-face interviews, the questions for the interviews will be mostly open ended, which will enable the interviewee to answer freely what his/her opinion is on the matter of interest to the researcher. The interviewee will not be constrained to choose one of few possible answers like in structured questionnaire, which may not represent the

reality. The researcher believes that the questions set for this research, could be answered most accurately through collection and analysis of such insightful information. The answers for the questions set will emerge from the responses of the participants, as the researcher will observe for their answers. What are the drivers and the barriers for green investments, is the green energy investment made, because of ethical considerations or profit maximisations. How feasible is the government policy for 2020 and how the investors should be attracted to invest in the green sector and what are the inclusion criteria undertaken of green investments into the investor portfolios. The researcher believes that those questions cannot be answered quantitatively.

There are three research purposes to use when undertaking academic research and these are - exploratory, descriptive and explanatory.

Exploratory Research – Researchers employ exploratory research when little is known about the topic and previous theories or ideas do not apply. The primary point of “exploratory research is to give researchers pertinent information and help them to form initial hypotheses about the subject” (*Hair et al, 2003*).

Descriptive Research - Descriptive research is done with a specific research question in mind. Descriptive research provides “research questions, populations or methods of analysis before the research is started. In marketing, it often consists of longitudinal studies, which study the behavior of individuals over time, and cross-sectional studies, examine many populations at one specific time” (*Hair et al, 2003*)

Explanatory Research – “Studies that establish casual relationship between variables” (*Saunders et al, 2009*).

The use qualitative unstructured interviews suggest exploratory research, as have advantage to be flexible and in the researcher could adapt to changes encountered in process of the data collection.

3.5 Research Strategy

The research strategy has a major role in the construction of the research. The researcher chooses the methods for data collections based on its own “philosophical

underpinnings”, the set research questions and objectives, the time available for the research, the volume of knowledge in the area and any availability of other resources that will guide the researcher (*Saunders et al.* 2009). The researcher must choose the strategy, which will add more value to the research and will enable the researcher to answer the set questions and objectives for the research. The researcher adopted the Grounded theory as the strategy for this research, as is most suitable for qualitative inductive approach grounding the examination of the context of the text for different meanings and patterns, subjectively and in scientific way and generate theories.

3.5.1 Grounded Theory

“Grounded theory strategy reflects building approach whereby a theoretical framework is established through the collection of data, which is then tested to verify the results and is considered as the best example of the inductive approach” (*Saunders et al.*, 2009) In the chosen research strategy theory is developed from data generated by conducting interviews principally involving an inductive approach. This strategy accurately describes what the researcher is setting out to do and fits in perfectly with the qualitative research approach. The emphasis with grounded theory is to develop and build theories rather than taking the approach of having a theory predefined and then using data analysis to prove or disprove the theory or to gain an unbiased view of the background for the research topic and the green and ethical investments in Ireland. The researcher is hopeful that will obtain rich qualitative data to allow for the building of sophisticated grounded theory.

The research based on Grounded theory will require, continuous interaction and coding processes with the data gathered, for the construction of valid interpretation and analysis (*Douglas*, 2003). The basis for grounded theory research involves collection of data through interviews, observation and analysis of documentation if possible and constant interaction between researcher and the data. The three main categories of data typical for grounded theory research data collected in the field, transcriptions of the recorded interviews, as well as any available literature on the subject. Multiple examinations of the data collected will provide the most accurate interpretation of the particular phenomenon of the research. By using creativity throughout the process and identifying links between different categories,

the researcher is aiming to create new order from the data, which exist already and break through assumptions, since most ideas are existent in some forms (*Glaser, 1992*). There are various methods, such as comparative analysis and integrations of concepts and theories, guiding the researcher against inaccurate interpretations of the data (*Glaser and Strauss, 1967*). The emergence of theory arises both from the researcher analytical perceptions as well as the worldview of the participants in the research. The researcher can only provide sufficient information, which can be used by the reader to determine whether the findings are applicable to a new situation” (*Lincoln and Guba, 1985*).

3.6 Research Techniques and Procedures

For the purpose of this study the researcher has used both primary and secondary data. The secondary data was gathered during the whole period of the research, as in the process new themes have emerged that needed further clarification. By exploring the data for building the literature review and formulate the research questions and objectives the researcher gained understanding of the research topic and was able to formulate design the questionnaire for the interviews.

3.6.1 Secondary data

Secondary data is interpretation of primary data and may include both raw data and published, summaries textbooks, handbooks, magazines and newspaper articles, and most newscasts are considered secondary information sources (*Saunders et al, 2009*). Secondary data is recommended, as it provides a useful source from which to answer, or partially to answer the research questions. Examples of advantages with secondary data are saving in resources, time and money, it is comparative and often easy accessible. Disadvantages can be finding the right secondary data, control of data quality and presentation of secondary data. (*Saunders et al, 2009*).

Extensive review of literature relevant to this research was conducted to date and secondary data was collected from a variety of academic disciplines. The secondary data gathered up to date provided the researcher with the understanding required to build the foundation of the research. There is enough data to answer partly the research objectives if this study was to do with international green and ethical

investors, but there is not much literature available for Irish investors and their attitudes towards green projects and investments. The government policy, which is in place for the green sector and the importance of the environmental and social aspects for green investments, what are the drivers for green investments, as well as the tax returns and incentives available to investors.

3.6.2 Primary data

Qualitative research is used to describe how individuals perceive their own experiences within a specific context and to seek an understanding why something occurs. There are few disadvantages of data gathered by interviews, as it can be biased, time intensive, dependent on technique of interviewer and case specific (Gillham, 2005).

The primary advantage of in-depth interviews is that they provide much more detailed information than what is available through other data collection methods, such as surveys (Boyce, 2006). In-depth face-to-face interviews will be used as outlined above, as the main method to gather in depth qualitative data using a list of themes and questions that may be varied in order and allowance made for additional questions to explore any emerging issues though out the interview. This technique offers higher level of reassurance to the interviewee's, as it tends to be more personal and has a higher degree of confidentiality than structured interviews. By conducting face-to-face interviews the researcher will able to observe the participants and evaluate to certain extent the validity of the data. It also offers the interviewer the opportunity to identify non-verbal clues such as tone of voice and facial expressions that can be used to develop secondary questions (Gillham, 2005).

3.7 Time Horizons

Cross-sectional research is described as the study of a particular phenomenon at a particular time (Saunders et al, 2009). The main characteristic of the longitudinal studies is the capacity to study change and development over time and gain valuable data (Saunders et al, 2009). There are time constrains to be considered for the project undertaken, as the academic courses have limited time frames, therefore cross-

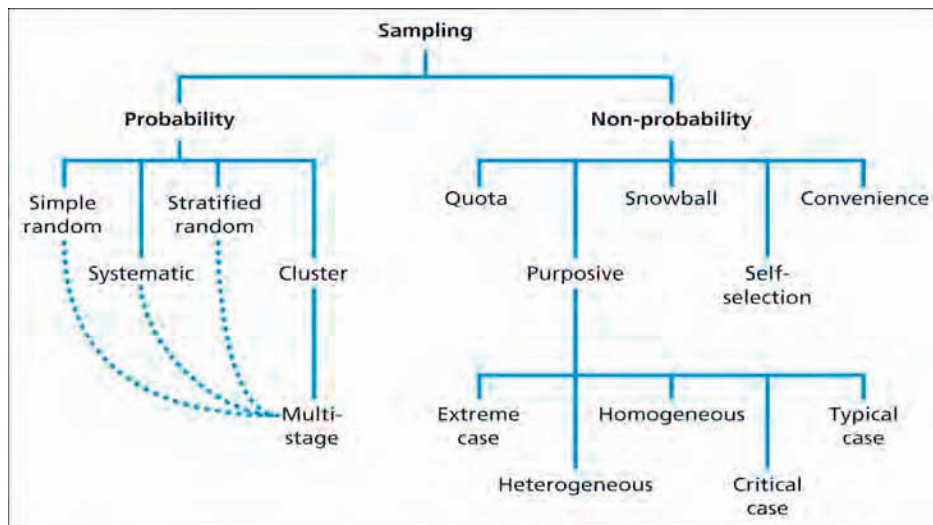
sectional time horizon is the more suitable option available. The major advantage of a cross-sectional research is that data can be collected in a relatively short period of time. The main disadvantage of carrying out a cross-sectional research is that it is difficult to establish time order. It is impossible to measure changes that are occurring in the participants over time. (*Saunders et al, 2009*). The researcher is confident however that the time provided for this project will be sufficient to be able to conduct and obtain the required response rate from all the participants both individual and institutional investors.

3.8 Population and Sample

There key considerations when selecting the sample are deciding on suitable sample size and appropriate technique. According to (*Saunders et al, 2009*) sample is needed, as it would be not only impractical to survey the entire population, but also that the budget and time constraints would prevent the researcher from being able to collect all the information required.

According to (*Mason, 2002*) “sampling and selection are principles and procedures used to identify, choose and gain access to relevant data sources, from which the researcher will generate data using the chosen methods”. The focus of the researcher when selecting sample for qualitative research is not only practical, but also strategic. In essence - the chosen sample will provide the researcher with the data, which is meaningful for answering the research questions and objectives. There are questions that the researcher will need to consider while selecting the sample population: “If there is existing relationship between the sample and the wider population”, “How the chosen sampling strategy will help the researcher to develop theoretically and empirically grounded argument” (*Mason, 2002*). Henry (1990) cited in (*Saunders et al, 2009*) states “that sampling can give a possible higher accuracy than census”. Two sampling techniques that researchers can use are - probability and non-probability sampling.

Figure 3.4: Sampling Methods



Source: Saunders et al, 2009

3.8.1 Probability sampling according to (Saunders et al, 2009) is associated with survey-based research strategies where the researcher’s make conclusions from the sample population to answer the research questions.

3.8.2 Non-probability sampling provide the researcher with alternative techniques for selecting the sample population, based on the “subjective judgment” of the re searcher.

For the proposed research non-probability sampling will be adopted. The variables that also need to be taken into account is the time available for the research as well as cost associated with the conducting the interviews. For exploratory studies non-probability sampling technique is the most practical option, the technique is often used with selecting small samples that are informative for the particular research (Saunders et al, 2009). The objectives of this research are to analyse the attitudes and beliefs of the participants towards green and ethical investments; the main drivers and barriers for green investments and the performance of the green investments against traditional investments benchmarks. In depth unstructured interviews, to be

administered by the researcher, face-to-face in the months of November and December 2012, and the time allocated for each interview will be in the range of twenty minutes. Were any interviewee would have further time to allocate for the interview, there will be further questions prepared.

3.9 Ethical Issues

Important aspect of the data collection is the anonymity of the participants where required and the protection of any sensitive data. “It is sometimes extraordinary exactly what an interviewee may disclose to someone they have not met before who is listening with sympathetic attention” (Gillham, 2005). If the interviewee may regret their disclosure afterwards the interviewer has a responsibility to them, including how the material is stored, analyzed and used. Research ethics relates to “the appropriateness of the researcher’s behavior in relation to the rights of those who become the subject of a research project, or who are affect by it” (Saunders *et al*, 2009). In this respect informed consent will be obtained in all cases with all of the participants involved in the research for the purpose of collecting primary data. Participants will be given comprehensive written information about participation, their rights and use of data. This will include their right to withdraw from the research at any time.

3.10 Conclusion

In this chapter of the dissertation the researcher followed the The Research Onion structure to an extent to clearly define the theoretical research methodology and method chosen for data collection. For this research, interpretivism has been chosen as the research philosophy in order to carry out the primary research. The research approach selected is inductive approach as will allowing the researcher to better understand the nature of the problem. For primary data collection in-depth unstructured interview will be conducted to gather qualitative data. Finally the ethical issues were discussed which may arise throughout the interviews process.

Chapter 4

Data Finding and Analysis

4.1 Introduction

The following chapter will present the findings from the research and will analyse the primary data collected by conducting face-to-face unstructured interviews. In order to gain access to potential participants the researcher has contacted over fifty financial institutions, banks, pension funds, insurance companies, companies operating in the green sector; as well as various private equity investors and investment advisors, companies operating in the green sector and the Green Party. The Irish Investors network responded to my email that they are unable to provide information on investors, due to strict confidential policy. Enterprise Ireland responded that are no longer able meet the high volume of students, requiring interviews or data. The response rate from the above-mentioned institutions was very low, with some respondents agreeing for an interview and then later canceling. Some of the interviews were secured through recommendation by personal contacts, leaving overall six respondents agreeing to be interviewed. All of the interviews were tape-recorded and the transcripts from the interviews are included in the appendices. Due to ethical considerations and as requirement from some of the participants in the research, to be kept anonymous, parts of the data, identifying the interviewees and companies are not included. The interviews were conducted in the months of November and December 2012.

4.2 Findings

Five of the interviews were conducted face-to-face and one interview was conducted over the telephone. As mentioned above due to ethical considerations the interviewees will be referred as participants (P1 to P6) in the appendices. The questions presented to each interviewee were similar, with some exceptions,

depending on the willingness of the participant to answer the questions and their time available for the interview. The shortest interview has been the telephone interview of approximately fifteen minutes and the longest interview forty-five minutes, which produced approximately 12,000 words and 30 pages of data, after the transcription to be analysed. The flow of questions for each interview varied in its consistency as mentioned above, allowing the participants, which were more passionate to talk freely and express their views and opinions. It was expected, given the nature of the unstructured interviews, the response for questions to vary between participants, thus some providing much more detailed and some inconclusive information in their answers. In some cases fewer questions were asked as they have been answered as a sub questions and in other extra couple of question were added.

The findings of the primary research will be presented under each objective, followed from brief analysis. The questions outlined to be answered for this research were “What are the main barriers and respectively the main drivers, stimulating investors to include green investments in their portfolios?” and “How feasible are the targets set from the Government for greening the Irish economy by year 2020?” The first two questions were general, with each of the interviewees asking them to give brief overview of their background and their company. The respondents come from different backgrounds. Four of them were engaged in private equity and venture capital investments, one is investor’s advisor and the last one is the leader of the Green Party in Ireland and the minister of the Energy, Communication and Natural Resources in the government of 2007 - 2011.

4.2.1 Objective 1 Findings and Analysis

“To outline the portfolio of Irish green investors and if they invest only in green projects and companies”

Several of the questions aimed at answering the first objective. Question 3 asked the interviewees ***what the reasons were for them to get involved with the green sector***. Most of the participants stated that they were presented with the opportunity to get involved with green sector and they liked it, as it was new industry, they had the opportunity to be innovative and creative and come up with new strategies and ideas.

Another reason was, that the prices for energy generated from renewable technologies are backed by government legislations in the form of feed-in tariffs making the investments less risky. The green investments provide long-term income and also have an impact and positive contribution to the environment. Participants felt strongly as well, that the green investments are the better option currently, as the *“other sectors are distressed at the moment”*.

Question 4 asked the participants if they would ***undertake project, which is in contrary to their own values and beliefs***. The majority of the participants stated that they would not undertake projects that are not in line with their values and beliefs. The respondents also felt that they believe the green investments are good for the environment. Typically initial requirement before projects are undertaken is for due diligence to be performed for each green energy project, prior investing to assess the risks associated with the technology. The key for successful investment is, to set the criteria high enough, allowing only good projects to be included into the investment portfolio.

Question number 5 asked the participants, if they ***have only green investments and in what themes of the green sector the investments are allocated***. The participants stated that they invest only in green projects, with one respondent stating that the company that she represents is part of group of companies under the same management and they have other options for traditional investments as well. Regarding the sub question in what themes of the green sector they invest the responses varied between solar farms and wind technology and energy development, geothermal and combined heat and power.

From the questions answered from the participants there was an indication that they all are involved primarily with the green sector in various stages of the cycle in the likes of funding new Greenfield projects or investing only in already developed projects and companies. Considering the long-term nature of the green investments, most of the participants felt that there is a higher risk involved with investing in new cleantech ventures, however the risk – return rate is greater. The return on the investment could be in the *“range of ten times over the initial capital”* invested, if the investors are prepared to risk their money in early stage project. It is clear that the

participants have acknowledged the environmental impact their involvement in the renewables sector has. As stated earlier in the literature review by the authors (*Robins and Krosinski, 2009*) and (*Kennedy, 20212*), that there is a growing interest in the sustainable investments sector based on the fact that the traditional investments fail to take in to account the increasing environmental issues.

4.2.2 Objective 2 Findings and Analysis

“To determine what motivate Irish investors to invest in green energy projects and whether personal values and beliefs or profit maximisation is deciding factor for green and ethical investments”

The following questions aim to answer the second objective of the research as outlined above. Question number 6 asked the interviewees for their ***opinions on what is the main driver for green investments, is it profit maximisation or ethical considerations***. Most of the participants strongly felt that the main driver for green investments is the good return on investment. Second the pressures imposed on companies to be seen to *“produce good returns for their shareholders and be good corporate citizens”*, thus reducing their carbon footprint by investing in new green technologies, as a mean of doing that. There was a single view expressed that investment will be made based on the *“belief in the product, that will give something new to the market and is good for the environment”*.

As outlined above in the literature review, the UK government has reduced stimulus packages available for green investors. With question number 7 the participants were asked for their opinions on ***whether green investments will decrease by reducing the stimulus package available for investors***. In their answers most of the participants felt, that there are not that many incentive packages available for investors, they will undertake green projects, because they see *“good investments, capable to deliver long-term returns”*. There was a favorable tax credits system available to investors, but it was reduced since the financial crisis. However incentives such as the feed-in tariffs provided for energy generated from renewable energy sources are strong indicator for good investment according to one of the participants. The participant also felt that the EU countries, which have implemented

legislations such the feed-in tariffs, attract large percent of investment. Corporate social responsibility is driver for green investments, as mentioned above the companies are obliged to reduce their carbon emissions and move towards more efficient ways for energy generation and conservation. Another response was that with the constant improvements of the clean energy technologies, the initial capital cost would be reduced down “*so that will compensate for the lack of government protection in the future*”. One of the respondents outlined as well that there were not that many incentives for renewables, because the price for green electricity was above the floor price, however there should be more “*support for the green sector just to keep some of the stability, as that will allow financiers to bring the cost of capital down*”.

From what can be gathered from the responses of the participants clearly profit maximisation is major factor for investors undertaking green investments, based on the fact that the investments are poised to provide long-term returns above average. The incentives associated with green investments such, as the tax relief for investors is favorable factor as well. As mentioned in the literature review several studies suggest (*McLachlan and Gardner, 2004, Rivoli, 2005, Hughes, 2010*) for ethical and green investments the authors agree, distinguishing should be made between the ethical, social and the economic motives of investors. From the ethical perspective the decision will be made based on the investor’s judgment whether the course of action is right or wrong. The economic decision will be made based on the financial outcome or whether the investment will be profitable or not and is important to remember in investing to successfully balance out the risk-reward equation.

4.2.3 Objective 3 Findings and Analysis

“To determine whether green investments in Ireland outperform the traditional investments”

The questions set in order to answer the third objective are outlined below, starting with question number 8, which invited the participants to ***describe the green sector in Ireland at the moment***, with the sub question asking if they ***perceive the renewable energy industry as a mainstream***. The answers obtained from the

recipients for the sub question varied with one of the replies being “*absolutely not*” the industry is not a mainstream. On the opposite another participant replied that the industry “*is a mainstream*”, considering the fact, that some of the global companies are involved with it and that the fact that wind farms “*have been around since the late 70’s*” since the first oil crisis “*the industry is becoming more and more mainstream*” Two of the participants replied that the sector “*is not a mainstream yet, but is getting there*”. The main reasons stated that the green sector would become mainstream industry, because of its huge potential to generate wind energy. In the next decade Ireland is expected to profit greatly from renewable energy exports mainly to the UK and Europe through interconnecting smart grids. And the second reason was that strict regulations are imposed to companies to be more efficient in their use and conservation of energy. These two important factors alone will increase the per cent of green investments. In regard to the first part of the question the recipients felt that in the current economic crisis is hard to get any funding, not necessarily being for green investments, but the green sector will be the one that “*grows out from the economic crisis*”.

Question 9 asked the participants ***how the green investments perform in contrast to the traditional investments***. As mentioned above most of the respondents were involved with green investments. In regard to the question, the prevalent feeling was that not necessarily, it varies, although there is evidence that good green investment will outperform traditional investment, based on the government support of the price paid for energy provided. Meaning that green investments are not as risky as some other investments. Different opinion was that good investments can also be made in other non-green sectors, but “*audit evidence will suggest that the green investments is holding on its own in terms of any other types of investments*”. Another response was that the green investments give two or even three times higher returns in terms of what the traditional investments would. Based on financial reports the “*companies that invest in new energy and clean efficiency technology are the ones who are actually more profitable*”.

Question 10 asked the participants ***what is their policy for underperforming investment projects***. One of the participants investing in solar energy stated that because the green investment are long-term and the fact that they invest in already

developed projects that are connected to the power grid “*over twenty years all project perform, there is no such project that is underperforming*”. The other participant answering that question stated that, “*there will always be certain underperforming investment, but that will be within the industry norms and that is the expected risk*”. In such case the investors will meet the management and if the project does not have a future will be divested. Another participant stated that the period of time necessary for certain projects to be approved from planners and certified takes too long. By the time the projects are approved the technology proposed for the project is no longer the most efficient, which suggests lower returns for investors. What is attracting the investors, are the qualities and the ability of the management of the company and the investor’s confidence in them that they will be able to deliver on the business deal.

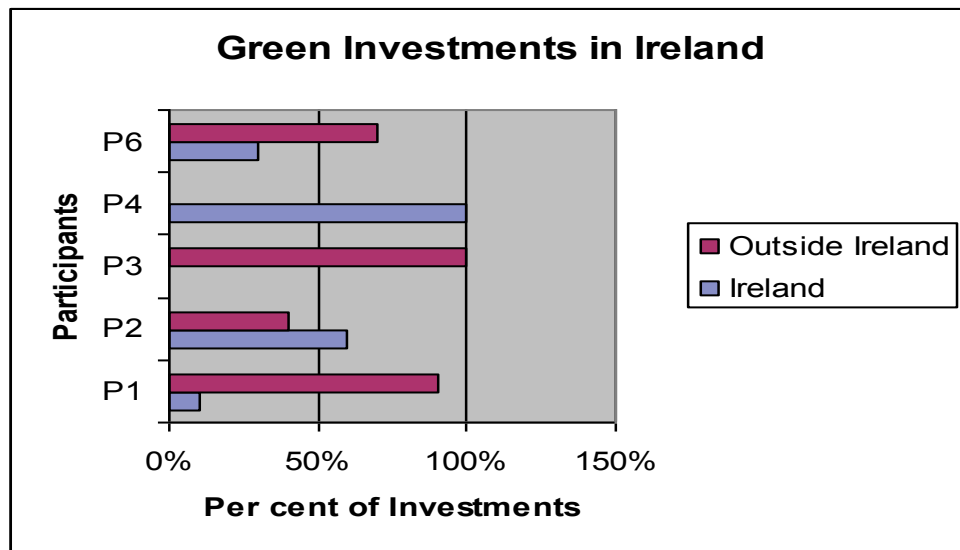
The above outlined responses from the participants leave certain amount of ambiguity, whether the green investments will outperform the traditional investments in Ireland. Perhaps the fact that majority of the participants had only involvements with the green sector do not give solid base for comparison. Although based on audit records some green investments outperform traditional investments. These recipients agreed however, that the lower risk of the green investments, based on the government support in terms of feed-in tariffs and the potential of Ireland to generate renewable energy, in foreseeable future it is a prerequisite for the green sector to become mainstream industry. In the study conducted by (Lewis and Mackenzie, 2000b) regarded in the literature review, most of the participants had both ethical and traditional investments, with only two out of one hundred respondents had only ethical investments. Most of the participants of the study believed that the ethical investment had lower profitability rates. However based on the various graphs presented in the literature review it could be argued, whether green investments outperform the traditional investments.

4.2.4 Objective 4 Findings and Analysis

“To determine whether green-gap exist in Ireland between investors’ intention and action to invest ethically”

Question 11 from can be classified as quantitative and asked the participants, *what is the per cent of the green investments made in Ireland*. The responses varied from funds being raised “*only for Irish companies and projects*” to “*not investing in Irish projects*”. Although this research is qualitative the findings of this question will probably outline the data more precisely in the form of a simple chart.

Figure 4.1: The percent of investment made in Irish Companies and Projects



The findings of this question suggest that large per cent of the investments are not made in Ireland. The reasons stated, as gathered from some of the answers, being for better government support in other countries for renewable power generation and perhaps variety of administrative constrains that are delaying the start of new project here in Ireland.

Question number 12 invited the interviewees for their opinions on *what is the knowledge of the Irish citizens in general regarding (green investments, energy conservation, carbon emission reduction) and if the government is doing enough to attract green investment from individual investors*. The participants strongly felt that the government certainly could do more in terms of increasing the knowledge of the citizens in regard of green investments and energy conservation. One of the participants made the remark that “*Ireland is a special case*”, in terms that Ireland

has so much potential for renewable energy especially from wind, but the government does not encourage the people to invest in green energy “*at the moment in microgeneration perspective, financially is not doable in Ireland, mainly because of the feed-in tariffs*”. Other participants stated as well, that in the current economic crisis that Ireland is at the moment government could not really do much more. In terms of individual investors, the respondents felt that the market has developed in such way that has not encouraged people to invest “*the individual investors will just know that some green investments have been performing incredibly well and that there is potential in this area, where one could do very well, if one was an investor*”.

Question 13 ask the respondents ***what companies attract green investments new green tech venture or companies that have good record and energy efficiency.*** The answers reflected what has been said earlier that new technologies frighten investors, as there is no guarantee that this particular technology will go to mature stage. If the company is in early stage there is a lot of work to be done in terms of commercialisation as well. One of the participants stated that they invest in pure Greenfield projects, where the risk is greater and the higher returns are demanded. For mature stage technologies there are not really many barriers. That is the reason stated from most of the participants to invest in mature stage companies and technologies. The participants felt strong that investing in ethical companies is imperative as “*good ethics is good business*”.

Question 14 invited the participants to state their opinion on ***what are the barriers for green investments.*** The prevalent feeling was that the main barriers for investments are “*lack of funding, lack of confidence people are still very risk averse, and political uncertainty*” at the moment, but the above-mentioned are not specific for Ireland only, nor specific for green investments only. Green investments are long-term investments and require high up-front capital invested and that frightens investors as well. There should be political certainty over the green sector, because “*long-term political certainty brings the cost of capital down and that makes capital intensive projects much cheaper and much easier to do*”. Another barrier pointed out from the participants was, that the new technologies, such as new green energy technologies, also make investors nervous, as there is no certainty that this particular technology will work. Two of the interviewees indicated as mentioned above, stated

that, the planning process for renewable projects is real obstacle on the way “*the people that are doing the job are not really conversant with the technology that they are trying to deploy, all planners in my opinion on wind farms they should know the basics on wind farming*”. The same was confirmed by another participant “*the one comment I will make is that at the moment we have two separate government departments for environment and energy looking after the climate change issues, for example would be easier like in the UK, they have only one department of climate change, which took all that section So here is fragmented, if you want something done you will have to go to two, three of more separate departments and that’s a problem*”.

In regard to the government plan for year 2020 pointed out in the literature review, to green the Irish economy question number 15 asked the participants for their opinions whether this plan was feasible. The answers varied with some of the answers been, that Ireland will struggle to reach the targets set, because there are many obstacles on the way such as the slow planning process mentioned above for new projects and the inability of the grid system that is able to take on all the renewable power produced. The more optimistic answers were that the target would be reached, and in some of the areas will be exceeded, because of the EU commitments made. The increasing cost of energy from fossil fuels and tight requirements for companies to lower their carbon emissions and be good corporate citizens will stimulate investments in new clean energy technologies.

As well as for the objectives above, the questions picked aiming to answer this objective were selected in the proses of reviewing the secondary data and needed further clarification. There was evidence in the literature that, there is a green gap between intention and action to invest ethically. In some instances this may be due to unavailability of information among investors for green and ethical investments, level of public support expected changes in support regimes that may undermine the investments. Or because the cost of capital for is very high, availability of capital is an issue for investors and for individual household investors in particular. As well as the high cost of obtaining the capital and the longer payback periods (*Claudy and O’Driscoll, 2008, Kennedy, 20212*). Nevertheless, as some of the participants outlined “*people have money, want to invest, want to get good returns, but they are risk averse they are just so scared and that is very difficult to get people to cross the*

line to invest". This again is not specific for Ireland there is a lack of confidence, although it is a good industry and good investment, it is very difficult to get people to actually invest. In time of economic downturn people are concentrated on capital preservation rather than, environmental considerations.

4.2.5 Objective 5 Findings and Analysis

"To determine the extent to which the recent financial and economic crisis has affected green investments in Ireland"

Ireland is still suffering from the global financial turmoil and its harsh impact on the country's economy, especially the financial sector. The crisis greatly reduced the availability of capital in the markets. With the final objective the researcher is aiming to determine how the green sector in particular was affected since the downturn. Question, number 16 asked the respondents ***how the recent financial crisis impacted the green investments in Ireland***. The respondents felt that it was difficult, as with all other sectors *"there was less capital available from banks"*, which slowed down the rollout of green projects, as they require a lot of capital, but it did not stop them. The risk exposure however for investors in this sector, is a lot less than in other sectors *"mainly because investments are based around the energy efficiency and fuel security"*. With the price of oil going up, energy efficiency is going to continue to be a requirement for companies. Some of the participants stated that the recent financial crisis did not affect much their business, as they have done big equity raise just before the financial crisis and that has managed to carry them through the crisis, however the tax credits available for investors were reduced. It also helps being innovative in the ways of trying to raise funds, because of the lack of confidence that is still out there *"it is very difficult to persuade people to place their money"*.

Question 17 asked the participants ***what has changed since the financial crisis and if the confidence is coming back***. The respondents agreed that the confidence is slowly coming back, as some of the international banks are lending in Ireland again, and this is positive. In terms of wind energy Ireland have good potential and there is no fear from investors, *"that even if the government take away the*

subsidy this market will not disappear". One of the respondents outlined that substantial investments for developing the offshore wind energy and building interconnecting grid systems to support all the renewable power Ireland can supply need to be made now "*as a sort of long term vision to use Ireland as a location for collecting of such renewable power and shift it into the continent*". There is still some degree of uncertainty in the sector, which can be one of the negative sides. Different opinion that has emerged was, that since the financial crisis individual investors were looking for green funds to invest in, because there was level of disappointment of the performance of the some traditional investments.

Question number 18 asked the participants ***what is the payback period of the investment***. The prevalent answer was that the payback period of the investment is in the range of five years. And that is depending on the country in which the investments were made. With return on investment for some investments vary from 8.5 per cent to 20 per cent as per the respondents.

Question number 19 asked the participants ***whether they consider the green sector as been a bubble***. The participants strongly felt that the green sector is not a bubble and is not going to burst as the property bubble, it is "*long-term sustainable investment*" and "*there will be steady growth*". The other reasons outlined are that the green investments are predicated on very productive assets, the companies that invest in clean energy technologies, will also reduce their energy bills, as well as their carbon emissions and improve their "***bottom line***". With the "*dis-promotion of some of the energy sources such as nuclear power and diminishing supply of others, the world will need more investments in alternative energy sources such as the renewable energy*". The penalties introduced for bad polluters and tax credits for companies trying to reduce their use of natural recourses and their greenhouse gas emissions, investments in green energy resources will increase.

With question 20 the researcher was trying to test one of the hypothesis, outlined to be tested. The researcher asked the interviewees for their opinion on ***what reflects the higher energy bills in Ireland***. Most of the participants stated that the higher energy prices in Ireland reflect the increasing prices of imported fossil fuels. In terms of renewable energy and specifically renewable energy generated from wind,

the price of energy produced reflects the cost of capital employed for the particular project. The price of energy cannot be reduced, as the capital cost cannot be reduced. Delays in planning and regulations impede the implementation of projects in some instances making them more expensive. The price of the renewable power will be more expensive for some projects, as the right technology was not applied on time, due to slow approval processes. As the price for renewable energy is fixed for the production life of the renewable energy farm, the cost will be passed on to the consumer bills as a levy.

As the recent financial and economic crisis is relatively recent phenomenon and as widely researched topic in the recent years, there is still not enough evidence from the literature to support the concepts and theories that have emerged from the primary research. The participants in the research stated that, there is political uncertainty in the sector and lack of public support. As outlined in the literature (*Kennedy, 2012*) in times of market uncertainty people are concentrating on capital conservation rather than ethical considerations. If sustainable investing is considered as a norm, not as a niche, then it can be a winner for investors and companies. The confidence however is coming back, as more investors are turning to green, based on well performing assets and high returns on investments. It has to be taken into consideration, as stated in the literature review that the financial crisis was caused primarily by “investor short-termism, misplaced incentives and inadequate regulation of risk” (*Robins and Krosinski, 2009*), (*Honohan, 2010*), (*Regling and Watson, 2010*). There was a remark made from one of the participants in the research that there is still short-termism among media, which is constantly monitoring and applying pressure on politics to deliver positive results. In the case of green investments it is not possible to produce short-term returns, because these investments perform in the long run.

Chapter 5

Conclusion

The main purpose of this dissertation was to analyse the attitudes and beliefs of Irish green investors. What are their motivations to include green investments in their portfolios and what are the barriers they encounter in the process of assessing and inclusion of such investments. The government policy for greening the Irish economy is major driver for green investments. The green and ethical investments became very popular as thematic investments in the past couple of decades, driven by the growing concern for the environment, growing world population and the depletion of the supply of the finite natural resources. Green and ethical investments are driven by politics, demographics and cultural factors however in recent years some of the leading global companies have adopted ways for switching towards sustainable practices and efficient use of energy and natural resources. In some cases this switch is a result of strict policies and regulations requiring companies to reduce their impact on the environment, by reducing their carbon emissions and in other cases willingly caused by ethical considerations and the understanding the importance of becoming efficient. The companies, which do not integrate such clean energy technologies, will face competitive disadvantage, going green can improve the overall efficiency of the business increasing the company's profitability.

Private equities and pension funds have been outlined from the primary research, as are biggest investors in green energy projects. The majority of the participants of this research were representing the private equity sector. As primary reason for their involvement with the green sector the prevalent feeling was, because of the higher returns on the investments, however there was acknowledgement of the environmental impact the investment has on the environment.

In regard of the hypothesis testing *(H1) - Personal values and beliefs are deciding factor for green investors when investment is considered* the hypothesis is not rejected overall. Even though the profit maximisation is powerful stimulus for the

investment, the idea behind green investments is instigated by of ethical consideration, been environmental, social or economic.

The literature suggest that the green investments are becoming more and more mainstream in resent years, based on the fact that they are long-term sustainable and capable to deliver substantial returns on investments, and in some cases the green investments outperform the traditional investments. The findings of the primary research suggest that specifically in Ireland the green sector is not a mainstream industry yet, but is expected investments to grow further in this sector in near future. The two main reasons been that, given the huge potential Ireland has to generate renewable energy from wind and the commitments made to EU for year 2020, the country has the capacity to generate more renewable energy that the country actually require. As outlined earlier the ambitious plan of the government to store and export green energy to UK and EU markets, will attract substantial investments in this sectors for years to come. On the other side companies are required to be more efficient and promote that they are socially responsible, therefore further investments will be made from companies in new clean energy technologies. With initiatives such as the Green IFSC, which mission is to promote and support Ireland's green economy and attract various businesses and investors looking to explore this sector, Ireland's green sector is poised for strong growth. Based on the evidence from both the literature review and the primary research it can be concluded, that the green sector in Ireland will be the one that grows out of the economic crisis. Based on the finding and analysis hypothesis 2 (*H2*) - *The way to overcome economic crisis is to invest in renewable energy where the return on investments are higher and foreseeable in the long run* is not rejected.

What has emerged during the search for participants for the interviews was that, there was a lack of knowledge and understanding in the public space regarding what are green investments. Both the literature and the data from the primary research suggest that the government should do more to fill this information gap, thus attracting more investments from the individual/household investors as well, in this sector. It is imperative for the government to create a framework to help people realise, how much potential Ireland has in the green sector, and optimise the tools available to create opportunities for them to invest. The government will have to find

mechanisms to allow people to invest in Ireland, from the data that was gathered from the interviews, it is apparent that larger per cent of the investments made by Irish Investors, are not invested in Ireland. It can be concluded based on the findings stated above, that there are barriers preventing investments in this sector, which the government need to improve in order to achieve its 2020 targets. There was a feeling from the responses, that Ireland may not be able to achieve some of its targets. One of the obstacles particularly for Ireland is slow planning and approval of the projects, as well as unavailability of one regulatory organ responsible for taking all informed decisions in relation to green business. Lack of confidence and lack of capital are vast barriers for investments, however this is not applicable only for the green sector. What is required from government to encourage more investments is to express its support for the green sector, which raises the political certainty. The political certainty would bring the cost of capital down and that makes capital-intensive projects much cheaper and much easier to do.

(H3) Future prices for renewable energy will be cheaper, as the sun, wind and water are free the hypothesis is rejected, based on the evidence from the literature and the opinions expressed by the participants, that the higher energy prices in Ireland reflect the increasing prices of imported fossil fuels. In terms of renewable energy the price of energy produced reflects the cost of capital employed for the particular project. The price of energy cannot be reduced, as the capital cost cannot be reduced. As the price for renewable energy is fixed for the production life of the renewable energy farm, the cost will be passed on to the consumers.

The uncertainty and the lack of confidence, caused by the financial and economic crisis, reduced the availability of capital in the markets. What was outlined in the findings and analysis chapter above, the financial crisis also had an effect on the green sector in Ireland. The rollout of projects was reduced, as they are capital intensive. Because of the nature of the project been long-term sustainable investments they are not exposed to credit risk. There is evidence suggesting, that good green investments will outperform traditional investments and that investors are exploring the green sector as alternative way to diversify their portfolios after the financial crisis.

Based on the findings in this research and the theory that has emerged research **(H4) - Green is the new bubble** the last hypothesis is rejected. The green investments are predicated on very productive assets capable of improving the overall performance of a business. The green sector is long-term sustainable and it is an alternative supply source of energy. The energy investment lending's from Irish banks been in the range of 2 per cent from their portfolios in the years before the crisis and construction 50 per cent of the portfolios. If the per cent of green investment were grater the economy would have been perhaps more stable and productive, in a sense that the money tends to go back to investment in new plant and new people..

Chapter 6

Self Reflection on Own Learning and Performance

6.1 Introduction

One of the primary reasons for undertaking MBA programme was, to get some insights, gain knowledge and acquire skills that will be beneficial for my future professional career and appreciated by employers. The modules that were covered during the course of the MBA provided me with valuable insights of business strategy, finance and marketing, and last but not least the research methods module, without which I was not going to be able to complete this dissertation. The intensive schedule of the programme, together with the various assignments, which were required to be done throughout the semesters have enhanced my skill of working on important deadlines, which served as a basis for the commencement of this thesis.

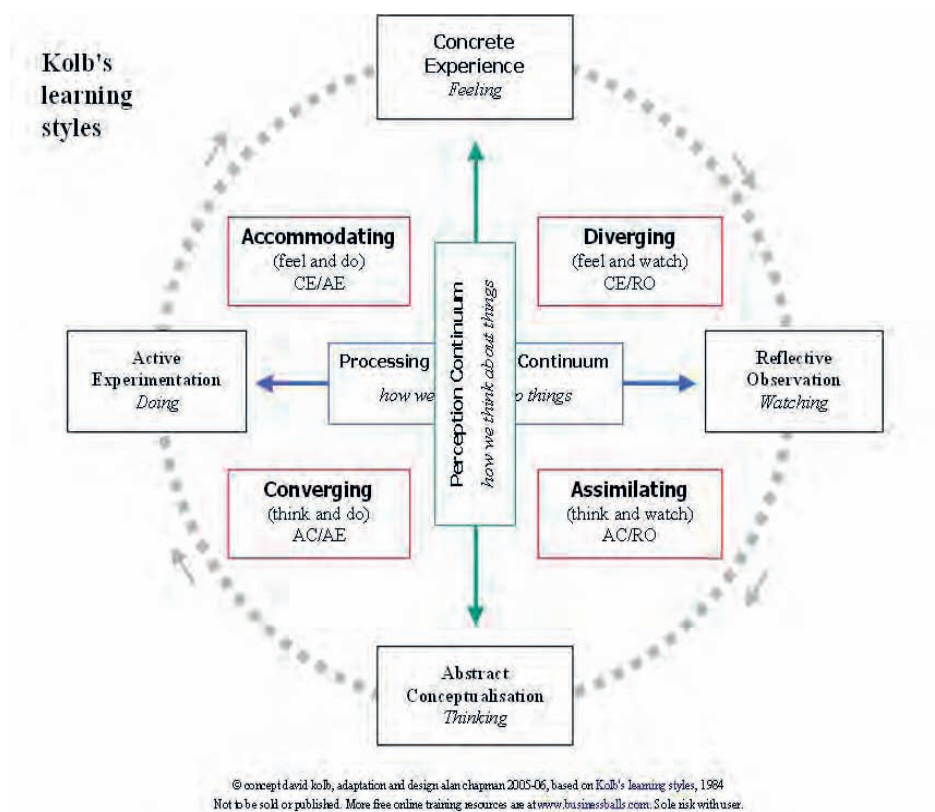
I have had the misfortune to experience series of health related issues throughout the MBA programme, both personal and of family members, which greatly disrupted the achievement of my previously set personal, professional and academic goals. The commencement of the dissertation process was delayed as well, because my inability to cope with all the events that were happening, leaving insufficient time for the research. However I do know my strengths, I am hard working, not afraid to take on new tasks and always work towards their full completion.

6.2 Learning Styles based on Kolb's Model

It is important to outline, that the completion of this dissertation was one of the most trying and rewarding events that have occurred in my personal, professional and academic life so far. How to best learn from practice is question relevant for any individual and in particular anyone in leadership positions, the opportunity to engage in reflective practice will be valuable opportunity for future development.

Kolb's (1984) reflective model outlines the idea of "experimental learning" in the process of transformation of information into knowledge (Kolb, 1984). The reflective practice takes place after the participial process has occurred, prepossessing the individual to gain understanding of the concepts, that were encountered during the process and then apply the understanding to new process. In this continuous process of reapplying the understanding gained the individual build on experience and knowledge.

Figure 6.1: Kolb's Learning Styles



Source: Alan Chapman, (2006), based on Kolb's, (1984) learning styles

Kolb's model is based on four stage learning cycle, where the prior gained experience is a base for reflections and observations, which are then assimilated to abstract concepts, which can be tested on new experiences, as outlined above.

- Concrete Experience
- Reflective Observation
- Abstract Conceptualisation
- Active Experimentation

The second level of the model outline four types of learning styles, where each style is representation between two preferred from different individuals styles from the ones outlined above. These are:

- Diverging - this style is a combination of feeling and watching, as preferred learning style. The individuals learn best when watching rather when doing things and use imagination for problem solving and have broad cultural interests.
- Assimilating – the style is a combination of watching and thinking, as preferred learning styles by individuals requiring clear explanation, rather than practical opportunity. The characteristics of such individuals are, that they are interested in abstract concepts and ideas and logically sound theories.
- Converging – this style combine doing and thinking as preferred learning style, where individuals are attracted to technical problems rather than social issues. Individual with converging style like to stimulate and experiment with new ideas.
- Accommodating – the characteristics of this learning style are doing and feeling. Individual with accommodating learning style use their intuition rather than engage in logical analysis, this style require initiative and action.

Based on the above-presented model the preferred learning style that will best represent me is the combination of doing and thinking or Converging style, in the process of understanding the concepts and reapplying the knowledge gained.

6.3 Learning Styles based on Honey and Mumford

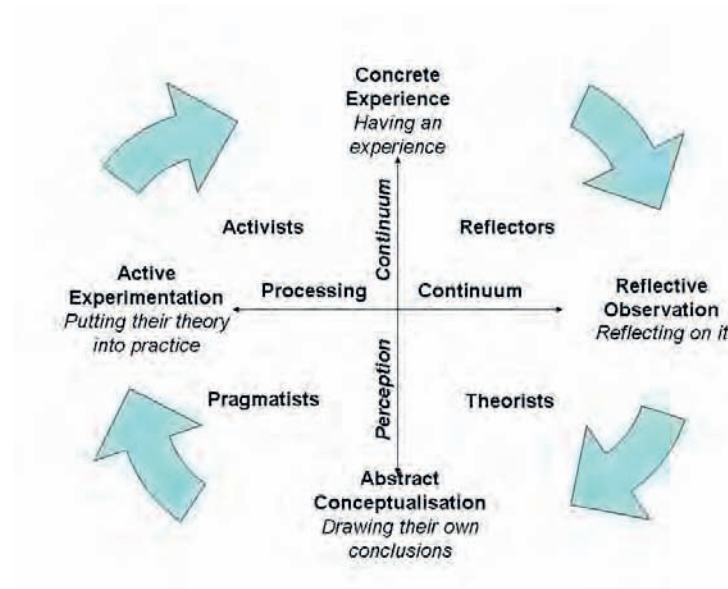
Based on Honey & Mumford, (1986) questionnaire undertaken during the course of the MBA programme, my learning styles are: very strong preference style Theorist and strong Reflector:

“Theorists are described as analytical people that pay great attention to detail and tend to be perfectionists; disciplined, aiming to fit things into rational order and keen on basic assumptions, principles and theories. Prefer to solve problems step by step”

“Reflectors stand back and observe, collect and analyze data and are slow to reach conclusions, prefer to learn from experience. Use information from past, present and immediate observations to maintain a big picture perspectives” (Honey & Mumford, 1986)

I am very concerned with meeting deadlines and overall performance, and will push my self to make sure the work is completed on time. Very conscientious and anxious and may worry unnecessary and also find it hard to delegate.

Figure 6.2: Honey and Mumford model



Source: Honey and Mumford Learning Styles Questionnaire (LSQ) nmlink.com

The other two styles based on Honey and Mumford model are

- Pragmatist – “*apply new learning to actual practice to see if they work*”
- Activist – preferences towards problem solving and new experiences

Even though the Honey and Mumford learning style questionnaire is inspired by Kolb’s work, there is a slight difference from Kolb’s, the learner can move around the cycle based on the results:

- Having an experience
- Reflecting on it
- Drawing their own conclusions (theorizing)
- Putting their theory into practice to see what happens

6.4 Personal Development Objectives

6.4.1 Time management

In order to be successful in both personal and professional level, one must possess certain qualities and skills to more effectively manage and complete tasks. At the beginning of the process of this research I have identified that needed to improve my time management skills, as effective time planning are essential. To be able to motivate yourself to complete tasks on time and build self - confidence based on successfully achieved goals. I have found my work being very chaotic and my self, overloaded with tasks at times, which resulted in stress and poor productivity and performance. I did also understand that is important to improve my prioritising skills, to better determine which tasks are of higher importance. To improve the tasks scheduling and do high value work in my peak times of the day. Half through the research process I did improve my time management skills by outlining, tasks set for each day. The only major downturn that I have experienced during the research was the slow response from the participants, which I wanted to include in my research.

The last three interviews were conducted just few weeks prior to submission day, leaving not much time, as the transcription and the analysis of the interviews were very time consuming.

6.4.2 Communication skills

The important element of this dissertation was the process of obtaining the primary data and the actual process of conducting the interviews. As stated above in this chapter I tend to pay attention to detail and try to perfect tasks. There was a general feeling for underperforming throughout the research and possibility of not been able to complete this task on time. I must acknowledge, however the tremendous boost in confidence throughout the process of arranging and especially when administering the interviews with the participants. It was a great deal of achievement and gave me the confidence that I need to complete the research. My business vocabulary improved throughout the course, while preparing for the interviews and transcribing them, the level of my communications skills improved as well. The financial modules completed during the semesters were very helpful, improving my ability to compare data and present it in various graphs and charts.

6.5 Personal and Professional Goals

This dissertation was accomplished while working full time job. I found it hard at first, as I have really felt the pressure, having to split time between work and my secondary research and then later trying to secure participants for my primary research were all time consuming. I did improve my skills of time management and started prioritizing in later stages, what is important and what can wait. I have improved my decision-making and communication skills in my day-to-day activities both in work later while conducting the interviews.

What is my priority and is important for me at present time is the successful completion of this last stage of the MBA programme, which is the submission of this dissertation. At later stage in a year time the personal goals I have set up for my self and hoping to achieve are: getting a new job, preferably in company that represents the ethical values that are important for me, and is environmental and socially

responsible. The sectors, which are of interest to me, as outlined earlier in this dissertation, are the finance sector, green energy sector and anything to do with sustainable development. Preferably I would like to work for a financial institution that is engaged in green and ethical investments, which clearly represent my values. As the above dissertation covers the field of green investments, I believe that the research that I did undertake provided me with valuable insights in the area, thus enhancing my chances to achieve my goals and make my personal contribution towards helping the environment. I believe that the gained knowledge throughout the process of completing this dissertation could only benefit any potential employers.

6.6 Influences for selection of the research topic

The Finance modules in both semesters were very helpful in setting the base and leading me in my choice for dissertation topic and increasing my level of knowledge for the financial world. Perhaps big influence on my topic selection was the fact that the focus of the finance module in the second semester was the recent financial and economic crisis. I was very interested in this module and the subject especially CSR, Corporate Governance and investments before and after the financial crisis. Research skills module was critical for the successful completion of the dissertation. Starting from formulating the research area, searching and obtaining appropriate secondary data, designing the research project, outlining the set questions and objectives for the research, constructing the interview questions and helping with the actual process of how to conduct in-depth interviews. The completion of this research was one of the most rewarding experiences in my life so far, very challenging at times, but has increased my level of self-confidence and my worldview. And last but not least I was able to create valuable contacts throughout the process, which I do consider as a huge benefit, and which could be helpful in achieving my future goals.

6.7 Conclusion

In conclusion I would like to outline that I have had great experience throughout the MBA programme and especially while completing this research.

Starting just as an idea for research project from an area of great personal interest, this became very exiting and rewarding experience. I am very satisfied with the results achieved so far. If I did not have to postpone the completion of the second semester due to personal health issues, I believe, that the outcome was going to be greater. I did learn a lot about business, management and finance from the core modules, but as mentioned above the most valuable part of the whole module was the completion of this dissertation.

Bibliography and References:

Books

Bryman, A. and Burgess, R.G. (eds.) (1994) *Analyzing qualitative data*.

Fisher, C. (2007) *“Researching and writing a dissertation: a guidebook for business students*. 2nd edn

Gillham, B. (2005) *“Research interviewing: the range of techniques*

Hair, J.F.J. et al. (2003) *“Essentials of business research methods”*. International edition Chichester, England: John Wiley & Sons, Ltd.

Mason, J. (2002) *“Qualitative researching*. 2nd edn. London: Sage Publications

Saunders et al (2009) *Research methods for business students*. 5th edn. Harlow: Pearson Education

Saunders et al, (2012) *Research methods for business students*. 6th edn. Harlow: Pearson Education

Verbruggen, A et al (2009) *“Renewable energy costs, potentials, barriers: Conceptual issues”*, Energy Policy 38 (2010) 850–861

Wass, V.J. and Wells, P.E. (eds.) (1994) *Principles and practice in business and management research*. Aldershot, England: Dartmouth

Journals and publications

Adler, T and Kritzman, M (2008) *“The Cost of Socially Responsible Investing”*, Fall 2008, p. 52 - 56

Barracchini, C (2004) ”An ethical investments evaluation for portfolio selection”
Published in EJBO Vol. 9, No. 1

Bauer, R et al. (2006) *“Ethical investing in Australia: Is there a financial penalty?”*
Pacific-Basin Finance Journal 14 (2006) 33–48

Beal, D, Goyen, M, & Phillips, P (2005), *Why Do We Invest Ethically?*, *Journal Of Investing*, 14, 3, pp. 66-77, Business Source Complete, EBSCOhost, [viewed 27 October 2012]

Boyce, C and Neale, P (2006) *“Conducting In-depth Interviews: A Guide for Designing and Conducting In-Depth Interviews for Evaluation Input”*, Pathfinder International Tool Series, Monitoring and Evaluation – 2 (2006)

BVP Investments forecasts positive outlook for Ireland's Green sector 2009, *Accountancy Ireland*, 41, 6, p. 94, Business Source Complete, EBSCOhost, [viewed 20 October 2012]

Chang, E et al (2012), "*Do green mutual funds perform well?*", *Management Research Review*, Vol. 35 Iss: 8 pp. 693 – 708

Claudy, M and O'Driscoll, A, (2008) "Beyond Economics: A behavioural approach to energy efficiency in domestic buildings". *Euro – Asian Journal of Sustainable Energy Development Policy*, 1, 27 - 40

De Graaf, F and Slager, A (2009) "*Guidelines for Integrating Socially Responsible Investment in the Investment Process*", *The Journal of Investing*, Fall 2009, p.70 – 78

Diffney, et al (2009) "*Investment in electricity infrastructure in a small isolated market: the case of Ireland*" *Oxf Rev Econ Policy* (2009) 25(3): 469-487 doi:10.1093/oxrep/grp022

Douglas, D (2003) "*Inductive theory generation: A grounded approach to business inquiry*", *Journal of Business Research Methods*, Volume 2 Issue 1 (2003) 47-54

Jones, A et al, (2008) "*The Investment Performance of Socially Responsible Investment Funds in Australia*", *Journal of Business Ethics* (2008) 80:181–203

Galbert, J, 2010, To What Extent is Business Responding to Climate Change? Evidence from a Global Wine Producer, *Springer Science+Business Media B.V. 2011, 25 May 2011*

Gareth Morgan, G & Smircich, L 1980 "*The Case for Qualitative Research*". *The Academy of Management Review* Vol. 5, No. 4 (Oct., 1980) pp. 491-500

Glac, K (2009), "*Understanding Socially Responsible Investing: The Effect of Decision Frames and Trade-off Options*", *Journal Of Business Ethics*, 87, pp. 41-55, Business Source Complete, EBSCOhost, [viewed 25 October 2012]

Gouchoe, S et al (2002) "*Case Studies on the Effectiveness of State Financial Incentives for Renewable Energy*" NREL/SR-620-328 [19 September 2002]

Green Deal one of five priorities for Green Investment Bank 2011, *ENDS (Environmental Data Services)*, 443, pp. 14-15, Business Source Complete, EBSCOhost, [viewed 20 October 2012]

Havemann, R and Webster, P (1999) "*Does Ethical Investment Pay?*", *Ethical Investment Research Service*

Helby, P (1998). *Swedish country report*. Ole Langniß (ed.): *Financing renewable energy systems*. Country reports. JOULE contract JOR 3-CT96-0117. DLR: Stuttgart 1998. Pp 211-252

Hellsten, S, & Mallin, C (2006), "Are „Ethical“ or „Socially Responsible“ Investments Socially Responsible?", *Journal Of Business Ethics*, 66, 4, pp. 393-406

Heinkel, et al (2001), *The Effect of Green Investment on Corporate Behavior*, *Journal Of Financial & Quantitative Analysis*, 36, 4, pp. 431-449

Hofmann, et al (2007), "The decision process for ethical investment.", *Journal of Financial Services Marketing* Vol. 12, 4 - 16

Hudson, R (2005), *Ethical Investing: Ethical investors and Managers*, *Business Ethics Quarterly*, 15, 4, pp. 641-657

Hughes, A (2010), "Green Investing, Black Enterprise", 40, 6, pp. 70-72,
Hummels, H, & Timmer, D 2004, Investors in Need of Social, Ethical, and Environmental Information, *Journal Of Business Ethics*, 52, 1, pp. 73-84, Business Source Complete, EBSCOhost, [viewed 25 October 2012]

Investment with a Conscience: Examining the Impact of Pro-Social Attitudes and Perceived Financial Performance on Socially Responsible Investment Behavior"

Jansson, M, & Biel, A 2011, Motives to engage in sustainable investment: a comparison between institutional and private investors, *Sustainable Development*, 19, 2, pp. 135-142, Business Source Complete, EBSCOhost, [viewed 25 October 2012]

Kimmel, J (2010), *From "Thinking Green" to "Going Green"*, *Equities*, 59, 1, p. 12

Lewis, A, & Juravle, C 2010, Morals, Markets and Sustainable Investments: A Qualitative Study of „Champions“, *Journal Of Business Ethics*, 93, 3, pp. 483-494, Business Source Complete, EBSCOhost, viewed 25 October 2012

Lewis, A (2001), "A focus group study of the motivation to invest: 'ethical/green' and 'ordinary' investors compared", *Journal Of Socio-Economics*, 30, 4, p. 331, Academic Search Complete, EBSCOhost, [viewed 27 October 2012]

Lewis, A, & Mackenzie, C 2000, Support for Investor Activism among U.K. Ethical Investors, *Journal Of Business Ethics*, 24, 3, pp. 215-222, Business Source Complete, EBSCOhost, [viewed 27 October 2012]

Mackenzie, C, & Lewis, A 1999, MORALS AND MARKETS: THE CASE OF ETHICAL INVESTING, *Business Ethics Quarterly*, 9, 3, pp. 439-452, Business Source Complete, EBSCOhost, [viewed 27 October 2012]

Matthew, V n.d., "Projects Fuel Interest in Renewable Returns", *Financial Times*., EBSCOhost, [viewed 14 April 2012]

Michelson, et al, (2004), “*Ethical Investment Processes and Outcomes*”; *Journal of Business Ethics* 52: p. 1 -10

Moore, B (2008), 'Green Attitude', *Financial Planning*, 38, 5, p. 152, Business Source Complete, EBSCOhost, viewed 11 April 2012.

Nilsson, J (2008) “*Investment with a Conscience: Examining the Impact of Pro-Social Attitudes and Perceived Financial Performance on Socially Responsible Investment Behavior*”, *Journal of Business Ethics* (2008) 83:307–325

Nilsson, J, Nordvall, A, & Isberg, S (2010}, “*The information search process of socially responsible investors*”, *Journal Of Financial Services Marketing*, 15, 1, pp. 5-18, Business Source Complete, EBSCOhost, [viewed 25 October 2012]

Panel on Climate Change Feedbacks, Climate Research Committee, National Research Council. "Executive Summary." *Understanding Climate Change Feedbacks*. Washington, DC: The National Academies Press, 2003.

Park, J 2009, Sustainable consumption and the financial sector: analysing the markets for responsible investment in Hong Kong and Japan, *International Journal Of Consumer Studies*, 33, 2, pp. 206-214, Business Source Complete, EBSCOhost, [viewed 25 October 2012]

Pasewark, W and Riley, M (2009) “*It’s a Matter of Principle: The Role of Personal Values in Investment Decisions*”, *Journal of Business Ethics* (2010) 93:237–253

“*Renewable Energy Country Attractiveness Indices*” August 2011, Issue 30, Ernst & Young

Rivoli, P (1995), “*Ethical Aspects of Investor Behavior*”, *Journal of Business Ethics*, 14, 4, pp. 265-277

Rivoli, P (2003), *MAKING A DIFFERENCE OR MAKING A STATEMENT? FINANCE RESEARCH AND SOCIALLY RESPONSIBLE INVESTMENT*, *Business Ethics Quarterly*, 13, 3, pp. 271-287, Business Source Complete, EBSCOhost, [viewed 25 October 2012]

Robert J. Bianchi, Michael E. Drew, Adam N. Walk, (2010) "On the responsible investment disclosure practices of the world's largest pension funds", *Accounting Research Journal*, Vol. 23 Iss: 3, pp.302 – 318

Robins, N, & Krosinsky, C {2008}, “*After the credit crunch: the future of sustainable investing*”, *Public Policy Research*, 15, 4, pp. 192-197, Business Source Complete, EBSCOhost, [viewed 25 October 2012]

Sandbou, M (2012) “*Stakeholder Duties: On the Moral Responsibility of Corporate Investors*”, *Journal of Business Ethics* (2012) 109:97–107

Scholtens, B (2010) “*What Drives Socially Responsible Investment? The Case of the Netherlands*”, *Sustainable Development Sust. Dev.* **13**, 129–137 (2005) , p. 129 - 137

Schwabe, P et al (2009) “*Renewable Energy Project Financing: Impacts of the Financial Crisis and Federal Legislation*”, *Technical Report NREL/TP-6A2-44930* July 2009

Schroder, M (2004) “*The Performance of Socially Responsible Investments: Investment Funds and Indices*”, *Financial Markets and Portfolio Management/* /Volume 18, 2004 / Number 2

Schwartz, MS 2003, The "Ethics" of Ethical Investing, *Journal Of Business Ethics*, 43, 3, pp. 195-213, Business Source Complete, EBSCOhost, [viewed 25 October 2012]

Slaper, T, and Krause, R (2009), “*The Green Economy: What Does Green Mean?*”, *Indiana Business Review*, 84, 3, pp. 10-13

Smart, M (2010), “*The Business of Green, Black Enterprise*”, 40, 11, p. 104-110

Söderbergh, J (2005) “*Who is willing to let Ethics Guide His Decision - Making? Evidence from Individual Investments in Ethical Funds*”

Stapleton et al, (2006) “*The Irish Carbon Tax: A Lost Opportunity?*”, *Social Responsibility Journal*, 2, 1, EMERALD MCB Press, EBSCOhost, viewed [8 December 2012]

“STRATEGY FOR RENEWABLE ENERGY 2012 – 2020” Opinion Piece: Striking the Right Energy Balance Source - The Irish Times, 6 September 2010

Schwartz, MS 2003, The "Ethics" of Ethical Investing, *Journal Of Business Ethics*, 43, 3, pp. 195-213, Business Source Complete, EBSCOhost, [viewed 25 October 2012]

Taylor, R (2001) “*Putting ethics into investment*”, *Business Ethics: A European Review*, Volume 10, Number 1, January 2001, p.53-60

“The economics of the Green Investment Bank: costs and benefits, rationale and value for money **National Renewable Energy Action Plan (NREAP)**”

Valor, C et al (2008) “*Understanding Demand for Retail Socially Responsible Investments: A Survey of Individual Investors and Financial Consultants*”, *Corporate Social Responsibility and Environmental Management Corp. Soc. Responsib. Environ. Mgmt.* 16, 1–14 (2009)

Winnett, A and Lewis, A (2000) “*You”d have to be green to invest in this”: Popular economic models, financial journalism, and ethical investment*”, *Journal of Economic*

Psychology 21 (2000) 319±339

Wiser, R and Pickle, R (1997) “*Financing Investments in Renewable Energy: The Role of Policy Design and Restructuring*”

Woiceshyn, J, (2011) *A Model for Ethical Decision Making in Business: Reasoning, Intuition, and Rational Moral Principles*, Springer Science+Business Media B.V. 2011, 28 May 2011

Yang, M and Blyth, W (2007) “*Modeling Investment Risk and Uncertainties wit Real Options Approach*”, International Energy Agency Working Paper Series, LTO/2007/WP

Websites

Boyce, C. & Neale, P. (2006). *Conducting In-depth interviews: A Guide for Designing and Conducting In-depth Interviews for Evaluation Input*. Online. http://www.pathfind.org/site/DocServer/m_e_tool_series_indepth_interviews.pdf?docID=6301

Consumer research “Individual ethical investors and what they value: A UK context”, available at http://marketing.conferenceservices.net/resources/327/2342/pdf/AM2011_0464.pdf [assessed 25 October 2012]

Green Investing 2011, Reducing the Cost of Financing; World Economic Forum; Available at: www.weforum.org [assessed 16 April 2012]

Green Investment Guide; Available at: <http://www.greeninvestmentsguide.com/> [assessed 16 April 2012]

Guba, E and Lincoln Y, (1994) “*Competing Paradigms in Qualitative Research*” Available at: http://www.edbengtson.com/wpcontent/uploads/2011/12/10guba_lincoln_94.pdf [assessed 6 December 2012]

Harvard Business Review; available at <http://hbr.org/> [assessed 9 October 2012]

IPCC2011, Renewable Energy and Climate Change, Available at: http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml#SRREN

“Ireland plots path to a sustainable energy future” – available at:

<http://www.iea.org/newsroomandevents/news/2011/december/name,19896,en.html>
[assessed November 2012]

KFW; available at: http://nachhaltigkeit.kfw.de/EN_Home/index.jsp {assessed 20 December 2012}

“Review of Ireland’s energy policies supports country’s push for a low-carbon economy”<http://www.iea.org/newsroomandevents/pressreleases/2012/july/name,28334,en.html> [assessed 19 November 2012]

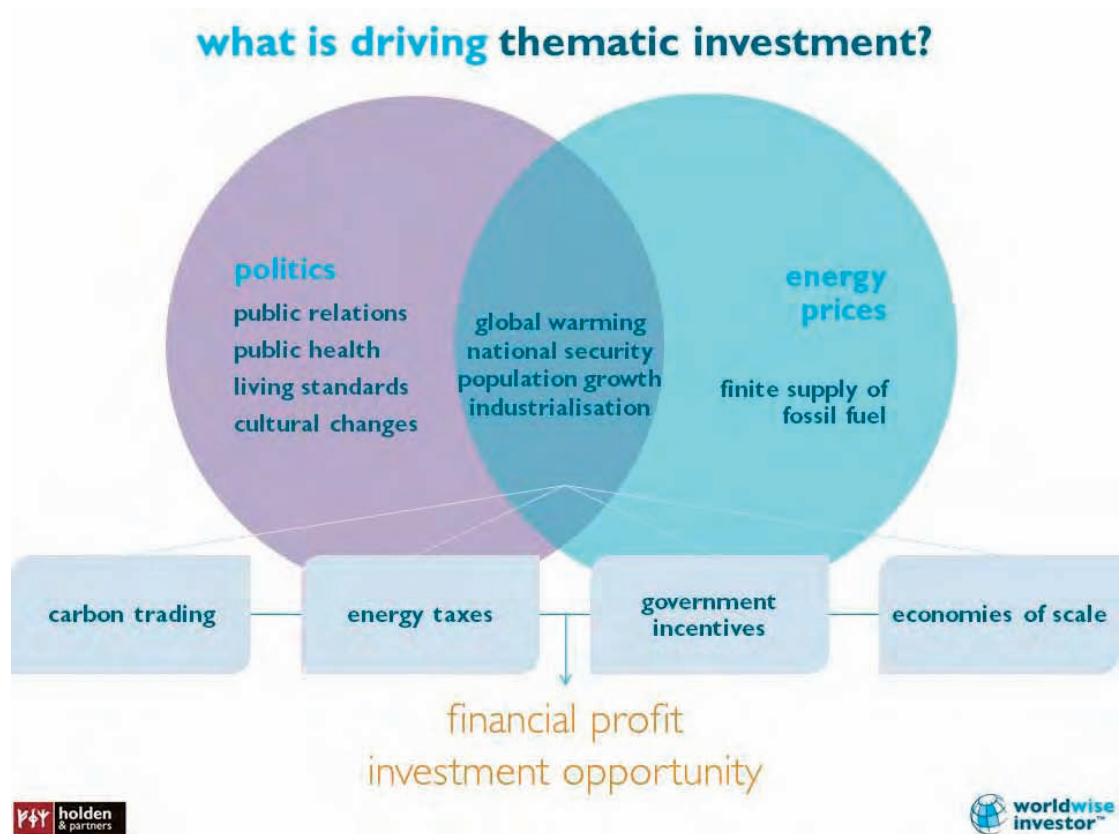
SEAI, 2010, Renewable Energy in Ireland; Available at: <http://www.seai.ie/>
[assessed 12 October 2012]

The McKinsey Quarterly 2007, Number 1, “A Cost Curve for Greenhouse Gas Reduction” available at:
http://www.epa.gov/oar/caaac/coaltech/2007_05_mckinsey.pdf [assessed 20 December 2012]

Williams, G (2005) “Are Socially Responsible Investors Different from Conventional Investors? A Comparison Across Six Countries” available at:
<http://investingforthesoul.com/ar/Are%20SRI%20investors%20different.pdf> assessed [27 October 2012]

Appendices 1

The definition of thematic investments



Appendix 2

As outlined above in the findings and analysis chapter, due to ethical considerations parts of the information was removed as requested by the participants!

Interview No. 1

28th November 2012 – 14.00 – 14.40

Q1 What was the reason for you to get involved with the green sector?

P1 For me personally, I saw the opportunity of where the market goes, it was a niche in the market for potential growth and for me it was an easy decision to jump from one end of the perspective to the next so it was an easy decision.

Q2 How can you describe your involvement is it concern for the environment of profit maximization?

P1 No is not financial, for me that is obviously the product, because for me is very hard to develop a business if I don't believe in the product so for me to be able to do that had to believe in the product I was promoting and that would have be the big indicator. Secondly there are the challenges of going to new markets and thirdly the attitude that you actually giving something good to the market.

Q3 Would you undertake project that is contrary toy your own values and beliefs?

P1 Me personally no.

Q4 What percent of your business is in Ireland?

P1 We are global company. Our percentage in Ireland would be less than 10 per cent. That's from manufacturing perspective We also provide finance to people that want to buy our turbines. The bank institution will do their due diligence on the machines and ones they find that the machines are durable they will promote the product from financial perspective

Q5 How is your company financed?

P1 The company is internally financed.

Q6 Do you consider the green investments and the sector as a bubble? Why?

P1 *Well it is a long term sustainable I don't think it's going to blow up. At the moment the market is growing in two sectors the megawatts machines and the micro generation. We are obviously in the micro generation, which is the growing industry. Looking from the perspective of the grid providers it's [...] so it can't really blow up because obviously land is precious so when you install a turbine there is a threshold we need to consider for certain geographical areas.*

Q7 **What in your opinion is the level of knowledge of Irish citizens in regard to green investments, reducing GG emissions, etc.,?**

P1 *"Ireland is a special case", Ireland has so much potential in renewables specially wind. So the attitude of the general public is you know so there is a lack of education there and the attitude towards new technology. Wind generation at the moment is controlled from the national grid it is developed method there, So there are lot of incentives there like in the UK market so people can generate another income there, like it's happening in the US. That's why Ireland is a special case seems to be controlled more from the grid.*

Q8 **How would you regard the government plan for greening the Irish economy by 2020? Is it feasible?**

P1 *It will be very tight. It's not realistic. If you take for example how the UK market is doing it. The UK are doing it very intensively. They have opened the market for micro generation so they have reached the quota agreement for 2020 they have announced.*

Q9 **How the Irish government supports the green sector in Ireland?**

P1 *They don't do anything. At the moment on microgeneration perspective financially is not doable in Ireland at the moment mainly because the feed-in-tariffs. [the audio can not be transcribed]
In Ireland the fact that is a special case people who buy our machines in Ireland are purely people who have high electricity cost and are prioritizing their business... people like that in Ireland.*

Q10 **The company also offers finance to farmers wishing to purchase your product. How can you comment on that?**

P1 *Well farmers have the land. UK market which was the larger machines in micro generation the farmers gets the money so the farmers get few shares from the land rent, which is quite happy to get because he could farm his land.*

Q11 **What is the payback period for the investment?**

P1 *The return on the investment, depending on the country is usually about 5 years.*

Q12 What green themes do you invest in?

P1 *I don't want to talk about it. But I believe in investing in green products only. I understand the business case so.*

Q13 What in your opinion are the barriers for green investment in Ireland?

P1 *What are the barriers. Well it is a long-term investment and if investors are looking for short-term profits and returns, most likely they will not invest.*

Q14 How the green investment in the portfolio perform?

P1 *Well the return on investment is 20 per cent, better than any pension.*

Q15 How the recent financial crisis impacted your business? What has changed since?

P1 *No difference.
And then again it will have to be the megawatts machines and the micro generations.*

Interview No. 2

3rd December 2012 – Dublin 16.00 – 16.45

Q1 Could you please tell few things about your background?

P2 My background is manufacturing, marketing, sales, business start ups, I have worked for Nokia up until 1991, I was marketing developing director for Nokia Ireland, and then I have set up my own business in 1991 and I have sold that in 2004 and I have start up this business.

Q2 Could you give me a brief overview of your company?

P2 Primarily we are wind developers so effectively we develop wind farms. We develop them from greenfield position, which is basically we start identifying wind sites that we think that can be developed and we go through a process of identifying wind. We will have a check list, probably of about 30 different items before we commit ourselves to a particular project. A so we assess the project for wind, we assess it for grid connection, we assess it for all various environmental aspects in terms of birds, bats, all geology, archeology all those issues need to pass a certain threshold before you can undertake the project.

Q3 What is your position in the company?

P2 I am the CEO of the company

Q4 What was the reason for you to get involved with the green sector?

P2 Well in our case came...our business originally was a partnership between financial house and wind consulting company that were building some small projects. And they were looking to develop their own projects so they were looking for finance. My brother had a finance company, which was basically pensioners trustees, managing private pensions, and they've developed opportunities for people, medium to high network people to invest in direct investor pension funds in suitable products, we also looked at wind as a type of project that you can get a long-term income, very often government backed in terms of power purchase agreement, which from a pension point of view will give a very good return. So we have been asked to look at number of projects, they didn't work out, because they couldn't get the bank finance, but they have had the opportunity to investigate the basic fundamentals of wind farming and thought that it was a good asset class to get invest in. And then opportunity came along that some people were looking for finance so we put together joint venture initially. So then we've moved on to a different level, we were initially involved from financial point of view, but then we had to take control of the management and we took the opportunity to expand internationally. We have projects in Ireland and Northern Ireland and the UK, we have commitment in the US

Q5 Would you undertake project, which is in contrary to your own values and believes?

P2 No. I mean first of all to be successful in the business you have to first of all the fundamentals have to be right in terms of commercial aspects will need to be right, but also wind farms themselves could be so [...] But it's very strictly regimented in terms of what criteria you need to meet in terms of environmental point of view, where you put wind farm across houses, across towns. In terms of what terms of ecology point of view what is suitable or not, and in reality if you don't observe those things you will end up in trouble. So you know life is hard enough with out putting yourself in trouble. Basically we consider ourselves as a good corporate citizens and when you build a wind farm you have neighbors that are going to be with you for the life time of the wind farm and if we are people that are not going to trust you then life is going to be difficult so it's part of our scheme in terms of how we operate the wind farm we will go house to house. We will do discussions with neighbors. We will do series of town halls discussions to make people aware of what we are doing. And we will do that over the live span of the project, when it gets planning. And we will also involve ourselves with community fund for the local area. Basically that community fund is to recognize that the people in the local community know that they have a wind farm adjacent to their homes they have to live with it. And to be good sort of corporate citizens we are trying to give them cense that they are getting value personally, you know as a community and for the wind farm also, so that's something else we do.

Q5 How is your company financed?

P2 Primarily through equity in the initial stages so we have raised about EUR 35 – 40 ml in equity, and then on top of that we would have some project finance, as we build our projects, normally we will attract between 75 – 85 per cent on project finance to a good wind project and then on top of that we would raise a mezzanine finance – short term finance. In the process of concluding a major [...], because the main risk is in the initial stage. People think that high risk is only in the start of the project, before you get it to planning, which will take about 3 or 4 years before we can get any money so effectively that's where the big risk is, once you get your planning then is more noble risk. So in that stage you attract financing.

Q.....So you are a risk taker....

P2 Yes well if you are in this business, you will have to be a risk taker.

Q6 How can you describe the green sector in Ireland at the moment? Do you believe is a mainstream industry

P2 Well yes it is a mainstream industry. Wind has been around since the 70's. It has been commercialized since the first oil crisis in the 70's and has progressed since then so probably taking off since mid 90's. So there are wind farms running for 25 years at this stage. And the technology, I mean if you look at the companies that are involved in these are some of the biggest companies in the world - GE, Siemens you know these are major companies involved in this so it is a mainstream you know.

P2 In Ireland basically technology is imported, GE, Siemens...they all supply to the market to certain extent so we will be technology neutral and to certain extent determine the technology we put in the sites, because there are certain types of wind

Q8 What in your opinion, are the drivers for green investments profit maximisation or ethical investment?

P2 Not necessarily, you work with an ethical frame works and we will have very robust policy in the company, because we consider ourselves good corporate citizens from two points of view from one point economic return our shareholders and from the other point of view we think is necessary for the world to embrace this type of technology and the two are not exclusive. I mean bad ethics is bad business so you know if you are involved in a non-ethical behavior eventually you are found out in business and doesn't do your business any good. Good ethics is good business so that's is what few companies will have.

Q9 What in your opinion are the barriers for green investments in Ireland?

P2 Well the main barrier to investment is one: the banks are broken so generally speaking Irish banks find it difficult to lend and so don't throw money at any body so you have to go international to raise your funds so that is the and I think internationally green is good, but people still are still very risk averse. You know people have money, want to invest, want to get good returns but they are risk adverse they are just so scared and that is very difficult to get people to cross the line to invest. I mean that's an international not an Irish thing so there is a lack of confidence out there, people would start of like: this is a good industry and investment, but try to get them to sign the cheque and send the cheque over is very difficult.

Q10 How would you regard the government plan for greening the Irish economy by 2020? Is it feasible?

P2 It will happen yes, will happen, for two reasons – one that we have European commitment to do so, two it is a good business in terms that creates jobs and so forth. But I think the government you know, the best the government can do in most instances is get out of the way and stop creating problems. I am not saying that from the point of view that everything should be free and easy, you know there have to be regulation. The problem with government is that they find it very difficult to join the dots. [...]and the media today is so short term and a lot is monitored continuously and so all the time politicians are under media pressure to produce short term, where this is long term business. It took us 7 years to get to revenue. And that's what the wind business is 7 – 8 years cycle so from the time we start producing is 7 – 8 years. And a lot of that is just been held of by stupid things. Part of the process is getting through a lots ofso the problem is because is taking so long in the mean time... and it gets to the stage that when you build ...we can do this because things have changed and then you have to go back and start negotiating with people and then we have to go back to planners ... and that's stupid really and things get forever. And the face that you don't have that thinking in that ...administrational ...result for the

wind farm and ... that wind power in the future will always going to be more expensive because the right technology wasn't applied on the first place.

Q11 So then the electricity price will keep going up?

P2 TSo the cost will ...for the next 25 years can keep the price down because you can reduce the cost, but if you don't apply the most sufficient technology on a first placeIf I can convince the planners to allow me to increase the tip point by ...meters I will be able to produce power a lot more cheaper. People are more concerned about the visual.

Q12 That's another barrier on the way?

P2 That's another barrier. I think that people that are doing the job are not really conversant about the technology that they are trying to deploy. You know all planners in my opinion are on wind farms they should know the basics on wind farms and understand the economics and then based on the facts to make informed decision

Q13 How can you comment on the incentives available for green investors – tax returns?

P2 Generally speaking they are not that many, what happen here is we have feed-in-tariff so basically what it is, is government agree to a price that if the market price is lower than our price it will compensate. So no compensation need it because our prices are the market price so if people invest early...if you invest prepared to risk your money for 4-5 years in a pure greenfield project, generally speaking these people should look for 10 times their money back. And then as you move up to and remove the risk then you should get less and less return. So as soon as all the risk is taken out of it there is less return. More risk more return, and .4-5 years you make a good bit of value and you should be able to reward your shareholders on that basis.

Q14 In your engagement with communities throughout your research for new projects, what in your opinion is the level of knowledge of Irish citizens in regard to green investments, reducing GG emissions, etc.,?

P2 They don't know. The way that the market has developed is basically has not encouraged people to invest so I think what will happen in the future people will see green as a mainstream project. You could put project together a bond together and probably next year or so we could see ourselves raising bonds that will give people return between 8 – 10 percent over 3- 5 years.

Q15 What percent of your business is in Ireland?

P2 We have 50 people working in Ireland, 20 in US. So in Ireland our projects are in mature stage, we started building one last year, one this year ...the fact that that takes 7 years to... coming together in the next 3 – 4 years. So will probably cost EUR 300 mil. Again 75 – 85 percent of that will be project finance and the balance will be equity,... no redeemable so that's the matured part on the business. I Ireland we have also offshore wind in early stage, we have made an application for the business but the problem is that they have stopped the

whole licensing process to renewed for the last 2 -3 years...will be next year before we get to the stage that we get offshore licensing regime in place. The other business we are involved is energy storage[...]. So this will lower cost and you will arrive at situation that will be able to put a lot more renewables on the market an you can the excising generation that is in the market you can manage it a lot more effectively so.

Q16 Do you consider the green investments and the sector as a bubble? Why?

P2 No. Maybe the green is an alternative supply source. What''s happening is that some of the other supply sources are going to be dis-promoted. So what you will find on the market place ...so is in their interest to ...which is relation to green energy...but lets be honest, they looking after their own interest, their own area. But there is more..has been more wind deployed in the last year, and the year before than any other generation. If you look at it nuclear is gone, coal is been turned off, gas is probably compatible for short term, but is more suitable for heating rather that making electricity, and in time they will find a way to reduce the emissions from coal. But at the moment you know burning coal ...you have to spend some time walking in China ...because off all the coal they burn. Now there is a huge commitment in China for renewables. China is the biggest producer of renewables in terms of turbines and all the rest of it, but their thirst for energy is so big you know. ...

Q17 How the resent financial crisis impacted your business? What has changed since?

P2 Nobody saw it coming ...We were lucky so far, we have done very big equity raise before the financial crisis hit so that has managed to carry us out through and with in our company we will have strong corporate finance sector you know entirely so we are very innovative in the way that we go to market and try to raise funds and it''sbeen difficult, but its been difficult for everybody, no one had it easy no matter what industry you are. There is no money ...and it''s been mostly to people being frightened. There is nobody that has seen this before, people who have money, have it, there are lots of money out there, and there are lots of good projects out there, but try and get peoples confidence to try and place the money has been very difficult. But I think this year has been a turning point, things have been better this year. We have spent a lot of time in London going to different financial houses tying to raise funds and you could see it is different from the previous years.

Q18...So confidence is coming back?

P2 It's coming back yes.

Q19 Do you think then that the investments are going to increase?

P2 Yes. They see Ireland has been good we have good wind, which mean we have a good energy and on top of that we have good support system so there is not fear from investors that even if the government take away the subsidy this market will not disappear. There is not major subsidy... that the market will be supported if the electricity prices drop. The reality is the electricity prices are not going to drop they will rather increase. I think what is necessary for power is affordable power. I think one of the problems in the past has been people rely on cheap energy and when things

are cheap people are wasting it. So probably 25 percent of all the energy is wasted so if it's cheap people will be wasted. We need to get to the stage where people appreciate the value and conserve it.

Interview No.3 - phone

4th December 2012 Dublin - 15.15 – 15.34

Q1 Could you give a brief overview of your company?

P3 We are on the market since 2009, the company is called „Solar 21” and actually our boss, our CEO he owns few other entities. The other company is “Clearfinancials” and the company exists since 2002 and it is a brokerage and apart of the green investments we have other traditional investments – pensions and insurance. In 2009 we have realized that people actually are very disappointed with the performance of their traditional investments, that's why “Solar 21” was created. We have been very popular for years now in Germany or Italy where they have the feed-in-tariff agreement. So we did our research in 2009 it took us actually 2 years of preparation and doing different research and meetings in Europe before we actually start investing in these farms. And at the moment we invest in solar farms, mostly in Italy, because they have very good feed-in-tariff agreement. Yes so we do own lots of sites that actually finalized plenty of them recently and the company is growing and is very successful.

Q2 What was the reason for you to get involved with the green sector?

P3 And the idea behind it is that people were actually very disappointed with what happened with the banks. I am sure that you have heard...and we offer excellent fixed return of 8.5 per cent per annum. And also feed-in-tariffs are government guaranteed, by the Italian government and EU legislations so this is very stable return.

The production of green energy will also avoid millions of tonnes of emissions of carbon dioxide.

Q3 So do you have only green investments, you don't have any other traditional investments?

P3[...] no, but the other company as I have mentioned earlier [...] they have plenty of you know investments that are available in the Irish market from different companies like: “Zurich”, ...what ever you want we give advice to people. If someone doesn't really want to invest in green investment, we will find you know plenty more options.

Q4 How the green investments perform in contrast to the traditional investments?

P3 Well definitely at the moment as you are aware nobody offers this kind of return of 8.5 per cent so it's like double, triple, higher return than anybody else offers. And the stable returns don't really depend on performance of the equity so.

Q5 What percent of your investments is in Ireland?

P3 *No, no. We invest only in...you have heard of feed-in-tariff so basically the feed-in-tariff have to be good enough for us to be worth the invest in the country that have feed-in-tariffs agreement like in Ireland they don't do it for solar. I presume they are companies that invest in wind energy, but not solar. In Ireland only in wind, but is not really popular, because the government have to work on the feed-in-tariffs mechanism to make them more popular and there was research carried out in UK recently, that more and more people would like to make a green investment, only if the feed-in-tariffs are good enough.*

Q6 Would you undertake investment, which is in contrary with your own values and beliefs?

P3 *Yes, absolutely yes. Even our clients cannot believe when they receive the returns at the end of the year, because the returns are just so good.*

Q7 What is your policy for underperforming projects?

P3 *Well basically, the solar investment, don't work like equity. Unlike traditional asset classes is that no capital appreciation on this asset is required. Or valuable commodity is to guaranteed customer for guaranteed price and this is long-term investment for over 20 years so in this time all perform. There is no such project that underperform...*

Q8 What are the main barriers for green investors?

P3 *Yes. Well is hard t think of any barriers really because the agreements are for twenty years.*

Q9 How the financial crisis changed your business, did it have any impact on it?

P3 *Definitely, as I have said since the financial crisis happened we have realized that there is niche in the market for alternative products like ours and basically we are quite successful at the moment and even more than we were before, maybe because we have stated in 2009. But the people as I said were so disappointed that they were looking for alternative. Something different that banks offer so that's why our investment is actually better, more poplar and successful now. But off coarse like every business you know it's hard everywhere is hard to escape from it. However we were lucky there was not impact really on us I can say, because the product is so good.*

Q10 What is the timeframe of the investment?

P3 *The investments term is twenty years, with option available to exit after five years given six months notice.*

Interview No. 4

18 December 2012 - 11.50 – 12.30

Q1 Can you give a brief overview of your company?

P4 We specialize in asset finance. Private equity.

P4 I specialize in energy efficient equipment. What I do is I would arrange funding for people, which want to invest in energy efficiency measures, because effectively, the issues are that money that they save on energy efficiency equipment pays for the capital investment over 5 years so is no brainer basically.

Q2 What is the portfolio of the companies that you advise? Is it only green companies?

P4 The companies that I support in terms, either finance the business they want to look at or else look for investors only in the green sector. The main reason for that is because the other sectors at the moment are distressed and I see huge potential in the green energy. But the main driver for that is - Ireland targets for year 2020 for 20 per cent in energy efficiency and 20 per cent in carbon reductions.

Q3 How would you regard the government plan, which is currently in place for greening the economy, is it feasible?

P4 Absolutely. It has to be feasible, because the other main drivers – the cost of energy it's getting so expensive that's one driver and the other driver is the CSR. Companies are demanded now by their shareholders to reduce their carbon footprint. There is huge driver out to reduce those.

Q4 What is the main driver for green investments profit maximization v ethical investment?

P4 There is two issues, companies have to be seen to be socially responsible and reduce their carbon footprint and they also have to be seen purely to maximizing the return to their shareholders. Both of those things work in tandem and that is the great thing about green energy space, which addresses number of key issues that are...There is requirement that companies will have to be seen as more socially responsible you know the climate change issues you have to be seen that you are promoting that to attract investors.

Payback is the key. Return on the investment.

Q5 What in your own opinion is the general knowledge of Irish population in regard to green investments?

P4 Very little, to be honest with you. They really need to start at secondary school level, there has been some movement in that space, but has been very, very minimal.

Q6 What in your opinion is the barrier for green investments in Ireland?

P4 Lack of funding. Funding is key issue, but I [...] saying in the budget, 2013 budget there is fund put in place of EUR 35 mil., now is increased to EUR 70 mil. Simply for green energy projects either government based or commercial based and that will hopefully be catalyst to get that sector moving in the positive direction.

Q7 How can you describe the green sector in Ireland at the moment? Is it a mainstream industry?

P4 No. Absolutely not.

Q8 How can you comment on the incentive available for green investors?

P4 There is very favorable tax allowance for green investors. The only problem there is that the tax capacity for the companies and the banks has been drastically reduced since the financial crash so tax capacity has become less of a driver in that sector. Similar like in the US – the production tax credits (PTC) of the investment tax credits reduced dramatically in „08 so the production tax credit they got is US\$2.2 for each kwt produced and they had to replace that with investment tax credit and they got 30 per cent of the initial funding, the initial investment cost of the treasury and ...but what that means is that the tax issues have become less of a driver in that sector purely because of the tax capacity.

Q9 By reducing the tax credits does the levels of investments going down as well?

P4 No. No they are still there I presume that over the next couple of years with the climate change issues and the CSR the CFO'S are looking at the bottom line, there are imperative reasons as to why the green investments really continue to grow, there is no question about that. In Australia we have a guy called [...] He is looking at climate change bond and he is trying to raise funds on the base that the funding will be used in the green space and Australians have been very successful in raising billions of dollars.

Q10 What per cent of your green investment is made in Irish companies and projects?

P4 That will be all for Irish companies. Absolutely, because we have very strong clean-tech sector in Ireland so why I would be raising funds for not Irish companies. The only thing is that we have strong presence of non - Irish sort of green companies, but I wouldn't really raising funds for them to be honest.

Q11 And in what themes of the green sector are the investments allocated?

P4 That will be geothermal, lightning and CHP units (combined heating power) sort of biomass.

Q12 What is payback period of the investment?

P4 Five years you know. Five years is just a nice period

Q13 How did the recent financial crisis affect the green investments? What has changed?

P4 Absolutely. It has reduced the availability of cash basically and again the tax capacity of investors.

Q14 Is the confidence coming back?

P4 I think the thing is to wait and see the outcome of the fiscal negotiation in the states between the President and the Senate and see how that's work out, but the general think is that the incentives to do with green energy investors will be extended for a year, hopefully for long-term, but that's the positive. There is a negative there but there is a certain amount of uncertainty in the sector and it's going to be a problem.

Q15 Is Ireland influenced by the US policies then?

P4 We are looking to get sort of green funds established in Ireland (you have just met SN, his task is to work on allocation of green Investment to Ireland) ...

Q...Is that the Green IFSC?

P4 Yes the Green IFSC

Q16 Going back to the financial crisis, what measures are there to protect green investors?

P4 Well the question is in terms of green investments really is - from investors perspective they don't have big exposure mainly because they are based around the energy efficiency and fuel security with the price of oil is going up, energy efficiency is going to continue to be a requirement for companies. There is a credit risk and is a lot less than in other sectors.

Q17 Do you consider green investment as a bubble that going to burst?

P4 No. I think there will be steady growth. I don't see it being a bust, mainly because it is predicated on assets as that sort of, these companies reduce their energy bills and it also assist with their CSR objectives and then they mitigate the climate change issues as well so no is a no brainer.

The only draw back to green energy investments is the initial capital cost. We are looking at energy efficiency measures, which is the initial capital cost. This can be an issue and the payback.

The tax incentives, the CSR and the improvement in you income bottom line are the three main drivers. And then the draw back is because of the lack of cash is having a negative impact, but that's why the government has put the multi million fund in place EUR35 million and they are hoping to level that to EUR 70 million.

Q...So it is important for you to invest in SR companies only?

P4 Absolutely.

Q18 Would you rather invest in new green tech venture or give more capital to a company that has a good record and energy efficiency?

P4 I think the problem we have in Ireland is that investments in the clean tech sector if the company is not in mature stage and the technology then there is not really huge barrier for investments. If it's at the early stage in terms of commercialization there is a lot of work to be done, because of the risk factors involved with that investment is an issue, it's a problem. There is not certainty that that particular technology will get to mature stage and do what it says on the label.

Typically we look at Israel, because believe it or not they are really in mature stage technology and commercialization and we are trying to piggy back looking at what they are doing ...

Q19 How green investments perform in contrast to the traditional investments?

P4 We have only green investments, but the only thing I would say that audit evidence will suggest that the green investments is holding on its own in terms of any other types of investments.

Q20 What is your policy for underperforming investments?

P4 In the portfolio you would always have certain underperforming green investments. If you have six green investments one will struggle for sure, but would be within the industry norms so that is the expected risk. You would probably meet the manager and you see if there is a future or not. If you see that there is future based on the stats that are there then you support them. But if there is no future you kind of disinvest. But typically you have initially done your due diligence and you met your investments criteria which are very high you find that you don't have a problem you know so the key at the initial investment stage to have your bar set high enough, the criteria's are high enough so really good stuff going to your investment fund.

Q21 To what extent you trust the accounts of the companies that you invest in?

P4 Well... typically would be based on the quality of the management mostly than on the financial information. The key to it is the qualities and the ability of the management and your confidence in them to be able to deliver on the business deal.

Q22 And Companies with good CG perform better>

P4 Yes absolutely, that's the improvement there for sure.

Q23 In your opinion is the government doing enough to support the green investment in Ireland.

P4 In the current climate yes, absolutely. The one comment I will make is that at the moment we have two separate departments for energy looking after what ...change ... If you want something done you will have to go to two, three of more separate departments and that's a problem.

Interview 5

19th December 2012 – 15.20 – 15.55

Green Party Leader

Q1 Could you please tell few things about your background?

P5 I am the leader of the Green Party in Ireland. I am former minister for "Energy, Communications and Natural Resources" in the government of 2007 – 2011 and before that I was member of the parliament covering the same area and before that I was a businessman. I have run a tourism business. But mainly green politics and sustainability, that's my area of interest.

Q2 How did you get involved with the green sector?

P5 Well I am 49 and I am old enough to remember the first oil crisis in the 1970's and I was lucky we were studying ecology in the 70's and a lot of the latest thinking, limits to growth, ...theory was I picked up very early and just by heart by conviction in the green. I think we have to live within the natural resources limits and I think we will be better off by doing it and I think is the job in politics is a very practical one to make it easier for people to liberate themselves from that use of fossil fuels so that is more sustainable, more economic and more satisfying and I thought that for thirty years (laughs) and I still think it. And I suppose I am lucky, I feel very lucky, because I was in government for four years, in politics for twenty years and I have been able to do some things that maybe make it easier for people to make that shift. I have very strong belief in democratic politics as a means of achieving social goals and my job now is to build up the Green Party to go back to doing it.

Q3 How can you describe the green sector in Ireland at the moment?

P5 Like all sectors is slightly in the state of shock, because I think in the economic banking crisis we have is hard to get funding for projects so capital investment is contracted and is not just in Ireland is across Europe as well so I think most people in state of uncertainty, in certain state of doubt and shock, but beneath

that I think there is a resilient economy. I think underlying understanding that this area of investments in clean energy and efficiency will be one of the areas that grows out of the crisis and will be one of the areas that will see economic opportunities. So I think Irish companies and Irish financial people they kind of, they are in state of uncertainty at the moment, but I think deeper down I think this is going to be the area for future investments. So all is not lost yet, we will see what will happen in the next three years.

Q4 How the green investments funds perform in contrast to ordinary investments?

P5 They say that the companies that are on a lower green trajectory they are actually the ones that are more profitable. And quoting from [...] and other conferences resources in 2012 there was a big conference in Oxford and the latest information presented there by the financial people was that the companies that invest in new energy and clean efficiency technology are the ones who are actually more profitable. I think it's difficult, because I think there are certain areas that people lost money you know, you try to say that to someone they've lost their shares on a particular company you will have to be very careful, but I think in general those companies that are particularly efficient, in a world where resource prices are rising and I don't see them falling again, where there is underlying shift towards higher recourse cost, because of the ecological constraints that exist on the planet as the economy grown to such an extent, that there will be boundary of the ability of the planet to provide the services we need. I think commodity prices are going to stay high and therefore those companies that are very efficient in their use of resources are going to be successful companies.

I am very influenced by a book called "The sixth wave .org" by James B., which makes the point that we are at the start of a cycle of investment in such efficiency in the use of resources, which will be the great economic driver for the next thirty years. It cites the [...] cycle of innovation and investment and how we are coming to an end of internet cycle bubble you could call it, but is also in real terms in real increase in productivity so what this book argues and the author argues is that the start of the next cycle of investment will be driven by investment in efficiency in used resources and I think that's probably right. I think we could use the internet, we could use the energy technology, but the key driver will be to search for the opportunity from waist, to reduce the waist of consumption of this present time. And is plenty of those so I think that will pick up.

Q5 What in your opinion are the barriers for green investments in Ireland?

P5 Barriers? One barrier I think is uncertainty, political uncertainty I think. One of the difficulty with the lot of clean energy investment or efficiency investments is the high upfront capital cost so typically for example you building a wind farm, farmer building combined heat and power plant or any sort of power generation infrastructure. Or if you are building for efficiency if you are building... retrofitting a building, putting new control systems, new heating systems, what ever both those

require large upfront capital payment and very low improvement in the variable payment over time, the real determination of the cost of such capital payment is cost of capital and the difference between let say you are building a wind farm with a cost of capital of five per cent, compared to seven per cent, it has a dramatic effect on the price of the electricity far grater than not just 20 per cent increase it's a near double and the cost of capital if you talk to financiers is often determined by risk factors are quite intangible - that is the level of public support, likelihood for delays in the planning system, the likelihood of change of support regimes or technical regulations changes that undermine your market investment. So the market model. The biggest probably blockage really I could think of is just the lack of certainty and the level of public support and therefore political support for the transition that has to happen and that's probably the biggest factor. There are other blocks or obstacles for example building matter like if you take McKinsey cost of abatement curve looking at how can you save money from efficiency. The obvious ones that king of better controls systems is switching things off, better insulations and so on things that have an immediate saving. The reason why they haven't occurred is there are several reasons - there are usually small individual items in the overall budget, but they accumulatively add up because they are so small or there is no ones maybe job to really look into it and kind of push them out, but maybe instances where the owner of the building is different to the user of the energy system and they have to build the [...] or the person that have to put in the investment, doesn't have the incentive as they are not the ones that are paying the bill. Or where is just kind of behavioral hold is a behavioral pattern of building the use of energy [...] is not big enough to change the shift for people to reconsider how are they doing things, but cumulatively they do add up and they are some of the obstacles. The last obstacle I suppose is the general one of lack of confidence, lack of money, no we are not investing in anything (laughs) that hopefully will start to abate, as we start to get out of the economic crisis, but I think is not the big issue I think the big issue is the long, long political certainty around this project, because that bring the cost of capital down and that makes capital intensive projects much cheaper and much easier to do.

Q6 How would you regard the government plan for greening the economy by 2020? Is it feasible?

P5 Yeah, yeah. Ah I think in some areas we could exceed it or should exceeded. In other areas it would be difficult. I think if you looking at the 2020 target 20 per cent it varies, in the electricity component we are looking at 40 per cent, I can't remember the exact figures the other sites for transport and heat 15 – 16 per cent is in the transport I think and I can't think really of the heat component I think is 16 per cent in heat and 10 per cent in the transport, but they are not as high as the electricity one. And ironically they are the ones that put in more difficulties, the heat and transport ones. Transport because there is not immediate solutions, I think the biofuel is not [...] it carries higher risk in other areas so we can not turn to that massively. The electrification in transport I think is possible, but is happening slower that we have hoped so is not going to be easy to meet that 2020 target. But I think they are still going to have it and to push towards it, because that stimulate investments in its own right and give some of the certainties I was talking about earlier on that the businesses need and the electricity side I think with political will

we could do it. The will is need it because of the concern about planning and about grid and things like that that's real obstacles we need to stand firm and explain to the people that all this makes economic sense rather than just letting it just get stuck in] ...] of controversy and delay, which I think is very possible but isn't inevitable.

Q7 What in your opinion the government should do to keep the down the rising renewable energy bills for consumers?

P5 Well the energy bill has been rising primarily because of the fossil fuel prices are rising. So I don't think fossil fuel prices are going to come down. I think there is an interim form of gas prices in the US because of shale gas, but is hard to know. If I knew what the gas price was going to be for tomorrow I would be very wealthy man probably betting on the market everyday and winning, but no one could be absolutely certain. But my general sense is the cost of oil and gas is not coming down, not much. Plenty of the risk is on the up side, no matter how much shale gas is produced and how much tide oil is produced the reality is the global economy is expanding, reserves of easy oil, easy gas are now no longer available so while there will be some supply lines gas to liquids, shale deposits and so on where we can get additional stream of gas and don't think that will bring the prices down and that's what's driven high energy prices for the last few years, what public is so unhappy about. I think we need we need to explain to people that to reduce that risk is to diversify that energy supply where the margin cost is zero in renewables and as a hedge against high rising fossil fuel prices. And I think is like insurance premium, and I think yes maybe in some technologies is short term cost, but we pay insurance premiums on a lot of things and one of them is insurance premium to cover and make sure we have energy supply. I think secure energy is well worth it. I think actually in Ireland that premium is a negative one, because onshore wind is cheaper to be used than gas at that current price. So that's missing I think is certainty in political commitment. That's the key missing agreement. I don't think prices are constraining factor.

Q8 There is number of stimulus packages and incentives available for green investors at the moment? How much will future reduction in these incentives will affect the green investments in Ireland?

P5 Those are incentives in terms of energy production from renewables. Is not that significant in Ireland, because is actually a flow price arrangement. And the reality from most recent years is that we have had very little subsidies for renewables, because [...] for gas for the electricity was above the floor price so not that really significant of cost. There was a larger incentive for peat, heat fire power production and I think that is coming to an end and I think we can afford to maintain our support structures for renewables just to keep some of that stability, because we thought stability it allows financiers to bring the cost of capital down, because you know the risk on a down turn major price downturn is going to be dealt with. I don't think this is likely to happen and therefore it is a true mature premium worth paying so I think [...] so the prices are so extravagant that is making it uncompetitive and we don't have the uncertainty that has happened in Spain or the ability that support that huge bubble really, which they didn't have the ability to maintain and then by changing

that support regimes you cut all sorts of uncertainties. I think we are reasonably well placed to maintain the kind of market arrangements, which are progressive but not crippling in the economic competitiveness.

Q9 What in your opinion is the general knowledge of Irish citizens in regard to green investments?

P5 Hmm...like a lot of countries its probably mix. And in general I think is reasonably a beeline attitude towards renewables and clean energy investments. I think that's clouded a lot by the usual actors, there is always some people that would paint sort of picture that green is waist money, misguided in very different ways. I don't know how credible those voices are in Ireland. There is broadly political support in Ireland. I wouldn't count in the end of the day that wouldn't want to be complacent about it and I think if the support regimes were right towards new wind farms in particular is going to be important to maintain the public support, because that is important. I think we do that to make sure that there is a proper community gain and the planning is thoral and proper and that the ownership structure is not all private equity I think we should have some state involvement so its ours our power so that maintains strong state power and ownership the ESB for example or Bord Gas ...as well as other private sectors operators. So I think is possible to do all that without loosing the public, just needs to be carefully managed.

Q10 Do you consider the green investments and the green sector as a bubble? Why?

P5 No. I mean there was a possibility, few years ago, that people were pumping money into you know certain projects that the prices of the assets were going beyond their economic value. I mean that's a risk in any changing cycle. Also can get certain bubble [...] you have to go really wary about, have to regulated it out and you know in terms of [...] if we have learned anything from our financial crisis is whomever started flying in one direction like starlings you start to be wary and try to avoid it blowing up so big that will cause real damage when it comes down. But I don't think the renewables investment bubble is in that space. The reality is they have very productive assets behind investments. I remember looking at some of the books when the banks were bust and we saw that the energy investment lending was about 2 per cent of their portfolio and construction is 50 per cent of the portfolio. If we only had even 3 times the amount in energy investments, taken away from the property, 6 percent less property let say and 8 per cent investments in energy instead in the property, that would have been hell of a lot more stable, more productive, more productive in a sense that the money tends to go back to investment in new plant, new people and so on. And that would have probably gone to some very good employment, rather that construction which has been just speculative.

Q11 How the resent financial crisis affected the green investments in Ireland?

P5 I keep an eye on Bloomberg New Energy Finance and that looks kind of in global perspective in terms of where the investments are and I think there are only at have of where we need to be in terms to be able to meet the planned targets. So there

has been a slow down in the last quarter, the last two quarters, according to the source Bloomberg New Energy figures. And we are need to hold our confidence not to loose out so I think may need to change the requirements may need to change the commission, maybe we need to get out of the economic crisis we referred. But I am fairly sure that the next round of financing, major of capital projects still hold in the green area. Because is a long way to go and the issues isn't going away. It's a real issue.

Q12 Do you consider the green sector as a mainstream industry at the moment?

P5 Yeah, I think it needs to be more and more mainstream. I think the way you make things happen, it's need to have 60 per cent of the population with you. This is not marginal and it related to all companies big and small in particular the bigger ones actually have the responsibility because they have the capability to look forward maybe more so than the small companies. So if a bigger company is going this so what's going to come up next – efficiency, efficiency, efficiency. So if you don't understand that and if you don't invest in it God help you, because you will be out of date, out of business.

Q14 What is the potential of Ireland then?

P5 I think in this decade we should at least be selling another 2 G watts of power in to UK so we get another two 1 Gw power lines in addition to what needs to be connected to the system. And I don't see any reason in the subsequent decades that we do 5 to 10 G watts a decade so we could be able to go offshore and that is sort of long -term vision to use Ireland as a location for collecting of such renewable power and shift it into the continent through inerconnecting grid. This is slightly long-term now, but if we don't start thinking about it now, it wont happen in ten years time and it should happen.

Q15 Is that mostly wind energy?

P6 Yes. I think new hydro is limited and the other techologies just don't seem to be as far advanced, maybe I am unaware, but I haven't seen them really comercial yet in a very large scale.

Interview No. 6 KPMG

20 December 2012 - 15.20 pm – 15.45 pm

Q1 Can you tell few things about your background?

P6 I am tax partner in KPMG, but for about the past thirteen years I have been specializing in renewable energy, doing green projects in Ireland, US, UK, Western Europe, Africa and Malaysia as well.

Q2 Can you also tell few things about your company?

P6 KPMG is international accounting firm, probably in about 120 countries around the world and employs couple of hundred thousands of employees, providing advisory, accounting, tax, IT services to large corporate funds, sometimes to individuals as well and you know it's big globalbrand name.

Q3 What was the reason for you to get involved with the renewable sector?

P6 Initially just some clients decided to start investing in it in 1999 and I got involved, got to liked it because it was new industry, there were no rules and you just had to figure out as you went along and you know there was a great opportunity to be innovative and to come up with new structures and new ideas. ... pause ... And also the fact that it's contributed to the environment it was a good industry to be involved with.

Q4 Would you undertake project, which is in contrary to your values and believes?

P6 No, but sometimes you take on projects that you don't feel passionate about, but renewable energy is different, because you know I believe is good for the world. The projects I am undertaking it's all in the renewable energy sector.

Q5 How can you describe the green sector in Ireland at the moment?

P6 The green sector in Ireland is very strong and we have one of the best wind resources in the world. We haven't exploited our offshore wind resources at all yet, but we will some day. We are also very strong in other areas of green energy such as: tidal and wave and also in the area of waste to energy so also I would say that Irish entrepreneurs are not just developing working projects here in Ireland, they are developing projects allover the world, which is why I have been able to work on projects everywhere.

Q6 Do you consider it to be a mainstream industry at the moment?

P6 *No, I don't believe it's a mainstream industry yet, but it's getting there. I would say that it is going to be very big industry over the next five to ten years, because one of the most significant things that is happening, is the UK government said that they will be buying renewable power from us here in Ireland and we will start to build huge interconnectors to supply that power to the UK and that's going to turn into a huge export business for us.*

Q7 Do green investments outperform traditional investments? Why?

P6 *Not necessarily, it varies. Good green investments yes would outperform, but you can get good investments everywhere. So there is nothing in particular about green investments that would outperform, except, sometimes with green investments there is a level of government support, there is a lever of protection there, which means that there are not as risky as some other investments, because the government supports the price that is paid for power for example.*

Q8 What in your opinion, are the drivers for green investments profit maximization or ethical investment?

P6 *Yes. I think is because investors recognize that we need renewable energy. Is not going to go away and because there is government backing for it, means that is certainly seen as a very safe investment. Other forms you know probably produce bigger returns, but carry some risks, investors are not afraid of "wind" any more. But it's always profit. Some investors like to have green investments, but still have to be good green investments that will pay good dividends and be profitable. You will get the odd investor that like the fact that has only green investments in their portfolio, but they still want you know... I don't think there is an investor that will invest in green just because is green, it will have to be a good green investment, with strong management, strong project, capable of delivering good returns to investors.*

Q9 What per cent of the investments are in Irish companies?

P6 *Yeah I mean like 30 per cent would be in Ireland and 70 per sent would be in other parts of the world.*

Q10 Is it in new green tech venture or companies that have good record and energy efficiency?

P6 *No, no they are nearly all in well-established companies. There are some new ventures coming up all the time.*

Q11 What in your opinion are the barriers for green investors in Ireland?

P6 *The barriers for green investors would be ... well...let me think about that now, sure there is any automatic barriers, I guess there is uncertainty over all investments there days, but that's not particular for green. Certainly if there is new technologies involved, that's certainly frightens away investors. And thirdly if the government support, not the Irish government, but some other government there will be some uncertainty and some political risk and that makes investors nervous.*

Q12 How would you regard the government plan for greening the economy by 2020? Is it feasible?

P6 Hmm...no I don't think it is feasible, because there is too many road blocks in the system in particular the planning process it's very slow and our grid system doesn't seems to be able to take all the new renewable power and so there are real blockages in the system so we are going to struggle to get there.

Q13 In your opinion what will happen if the government reduce the stimulus packages available for green investors? Will the investments decrease?

P6 No. I don't, because there are not that many incentives for green investments no. And there is a thing called the Employment and Investment Scheme, which apply to the all industries. That's pretty small in terms of investors. Investors are going in not because of protections; they are going in mainly because we see a good investment capable to deliver long-term returns.

Q14 What in your opinion is the general knowledge of Irish citizens in regard to green investments? Is the government doing enough to attract green investment from individual investors?

P6 Hmm...some done, but not a lot done. To some extent, but not much. The individual investors they will just know that some green investments have been performed incredibly well and there is potential is this area where one could do very well, if one was an investor.

Q...so the government doesn't do enough for this sector?

P6 Correct. They certainly could do more. They are trying to do things, but is difficult you know, particularly in the economic climate that we are living in.

Q15 Do you consider the green investments and the green sector as a bubble? Why?

P6 No. No I don't, because mmm... this is not just because the environment, it's because ultimately we are going to need new sources and this is a new source of energy so I don't think this is a bubble at all. There is a level of government support I think that will fall away, but the technologies keep improving dramatically and the cost is reducing so that will compensate for the lack of government protection in the future.

Q16 How the resent financial crisis impacted the green sector in Ireland?

P6 Just less capital is available from banks to build you know projects, because green requires a lot of capital you know, like any energy project. So it slowed down the rollout of green projects and it's made it more expensive to build them, because banks charge more, but it hasn't stopped them but, made it much more difficult.

Q17 What has changed since? Is the confidence coming back?

P6 Slowly, slowly, but some of the international banks are lending here now again so.

Q18 How the Green IFSC going to help with that?

P6 The Green IFSC is not a bank, is an organization that facilitates investments and talk about Ireland as a place to come and invest, it is a big help, but is not a source of funding itself.

P6 What you didn't ask and what is worth talking about is the different types of investors in the green sector

- *Individual*
- *Corporate*
- *Private Equity Funds*
- *Pension Funds*
- *Insurance Companies*

Q... And which are most likely to invest in green?

P6 It varies. It varies on which part of green, in which country. We see a lot of it coming from Pension Funds and Private Equity Funds these days, probably the two biggest.

Q...and you have mentioned Ireland have a lot of potential in the wind energy?

P6 Oh yes, by a long mile. Onshore wind, but we haven't developed our offshore wind industry yet. But we will.