
CLIMATE CHANGE AS A CHALLENGE FOR THE ETHICAL ACTING OF COMPANIES IN THE GLOBAL CONTEXT

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Abstract: First, this paper introduces differing viewpoints about the dangers of Climate Change. Then, the United Nations Sustainable Development Goals are utilised – notably Goal 13 on ‘taking urgent action to combat Climate Change and its impacts’ – to steer a clear path through the issue of Climate Change. Next, three ethical principles for business companies to adopt to deal with Climate Change challenges are identified: first, the ethical principle of Financial Sacrifice for the Common Good; second, the ethical principle of Solidarity; and, third, the ethical principle of the Rights of, and Concerns for, Future Generations. The ethical values, as distinct from principles, of openness and trust are then examined, including breaches of trust. Finally, Conclusions are drawn about some of the adverse consequences of Climate Change, including its effect on human health and migration patterns. Both businesses and ethics are seen to have a key role to play in protecting our global environment and mitigating Climate Change impacts both in the present and for future generations.

Keywords: *climate change, ethical principles, financial sacrifice, solidarity, future generations.*

1. INTRODUCTION

Climate Change has been declared an “emergency”. In early May 2019 the UK Parliament approved a motion to declare an environment and Climate Change emergency,¹ spurred in part by recent protests by the environmental activist group, Extinction Rebellion,² and the campaign by Swedish teenager Greta Thunberg. She has inspired schoolchildren in many countries to “strike on Fridays” to highlight the need for Climate Change actions to be dealt with more quickly by Governments.³ Greta recently met UK politicians to state her case.

Recognition of this Climate Change emergency has also featured in more analytical terms in Sir David Attenborough’s television documentaries, particularly the programme “Climate Change: The Facts” shown on BBC1 on 18th April 2019. This documentary pointed out that we are rapidly seeing Climate Change results, including greater storms; floods; increased sea level rises; and the world is getting hotter. The evidence is now “unequivocal”, Sir David stressed, caused by the use of fossil fuels to heat our houses; aircraft and car pollution; and additional releases of carbon dioxide and other greenhouse gases into the atmosphere.⁴

Sir David further worryingly noted that we are causing the extinction of species which, for example, are unable to survive in heatwaves. Such extinction of species has been confirmed by a new “UN Global Report on Biodiversity” released on 6th May 2019 which has put the world “on notice” that one million species face extinction.⁵

However, science is complicated and it has taken Governments a long time to put policies into practice to combat Climate Change. Furthermore, certain business companies seeking to make a profit have contested these climate changes, especially oil and gas companies, and some politicians

¹ See “UK Parliament declares climate change emergency”, 1st May 2019 at <http://www.bbc.co.uk/news/uk-politics-48126677>.

² “Extinction Rebellion is an international movement that uses non-violent civil disobedience to achieve radical change in order to minimise the risk of human extinction and ecological collapse”. See <https://rebellion.earth/the-truth/about-us/>.

³ See, for example, article by Janet Street-Porter “Girl at the back of class who shook the world”, UK Independent newspaper 16 March 2019.

⁴ The documentary “Climate Change: The Facts” was later also shown on BBC2.

⁵ The “UN Global Assessment Report on Biodiversity and Ecosystem Services” was launched in Paris on 6 May 2019 by the UN Educational, Scientific, and Cultural Organization (UNESCO). See <https://en.unesco.org/themes/biodiversity>.

have campaigned against the seriousness of Climate Change – notably President Trump of the United States of America. Trump has put his country's economic progress before the global environment, claiming that Climate Change is exaggerated. Accordingly President Trump has withdrawn the USA from the Paris Agreement of 2015.⁶

Given the complexity of and differing viewpoints on Climate Change, this paper adopts the United Nations (UN) Sustainable Development Goals (SDGs), aimed for achievement by year 2030, to steer a clear path through this issue. The most relevant SDG is Goal number 13 on Climate Change. This presentation will focus not only on the specific targets set by the UN for this Goal but also on the role of businesses in aspiring to reach such attainments by 2030 – which involves global companies in making ethical and moral commitments. However, in certain cases, unethical behaviour by businesses is in evidence which, in the case of Climate Change, exacerbates it.

2. THE UN SUSTAINABLE DEVELOPMENT GOALS (SDGS) AND CLIMATE CHANGE CHALLENGES

The General Assembly of the UN adopted the 17 Sustainable Development Goals on 25th September 2015 building on the earlier Millennium Development Goals, including what the latter failed to achieve. Overall, the 17 SDGs and 169 associated targets set the new universal Agenda for Sustainable Development over the next 15 years in areas deemed to be of critical importance for humanity and the planet.⁷

In the case of the planet, protecting it from degradation, keeping to sustainable consumption and production, sustainably managing the planet's natural resources and taking urgent action on Climate Change

⁶ In June 2017 President Trump declared that the USA will cease immediately to implement the Paris Agreement. However, the exit process is lengthy, meaning that America will remain in the Agreement (at least formally) for another few years. See <https://www.theguardian.com/environment/live/2017/jun/01/donald>.

⁷ United Nations General Assembly, Seventieth session, Resolution adopted by the General Assembly on 25 September 2015 “Transforming our world: the 2030 Agenda for Sustainable Development” A/RES/70/1 Distr.: General 21 October 2015. Of the 17 SDGs agreed, 12 explicitly mention Climate Change, environment, or sustainability.

are among the aims of the SDGs. Significant negative impacts of Climate Change are already evident – including changing weather patterns and extreme weather as well as the other factors mentioned in this Introduction. Climate Change is a global challenge which does not respect national borders – greenhouse gas (GHG)⁸ emissions, for example, including carbon dioxide (CO₂)⁹ and methane (CH₄) from human activities, are driving Climate Change and the levels continue to rise and are now the highest in history.¹⁰ The UN purports that solutions need to be co-ordinated at the international level and international co-operation is required to help developing countries move towards a low-carbon economy.¹¹ Accordingly, the Paris Agreement of 2015, mentioned earlier, came into effect on 4th November 2016 after at least 55 Parties to the Convention, accounting for an estimated 55% of the total global greenhouse gas emis-

⁸ Gases that trap heat in the atmosphere are called greenhouse gases. Main greenhouse gases are Carbon dioxide (CO₂); Methane (CH₄) which is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste; Nitrous oxide (N₂O) which is emitted during agricultural and industrial activities, as well as during the combustion of fossil fuels and solid waste; and Fluorinated gases, including Hydrofluorocarbons and other synthetic powerful greenhouse gases, emitted from a variety of industrial processes. Each of these greenhouse gases can remain in the atmosphere for differing amounts of time ranging from a few years to thousands of years. <https://www.epa.gov/ghgemissions/overview-greenhouse-gases>. China and the USA are the world's two biggest emitters of greenhouse gases.

⁹ Carbon dioxide (CO₂) enters the atmosphere through burning fossil fuels (coal, natural gas, and oil), solid waste, trees, wood products and also as a result of certain chemical reactions, such as the manufacture of cement. Carbon dioxide is removed from the atmosphere (“sequestered”) when it is absorbed by plants as part of the biological carbon cycle. *Ibid*.

¹⁰ Global emissions of carbon dioxide have increased by almost 50 per cent since 1990. And, from 1880 to 2012 the average global temperature increased by 0.85°C, causing inter alia grain yields to decline. Without action, the world’s average surface temperature is projected to rise over the 21st Century and likely to surpass 3°C on this Century. <http://www.un.org/sustainabledevelopment/climate-change>. Goal 13.

¹¹ A low-carbon economy is one in which low-carbon power comes from processes or technologies that produce power with lower amounts of carbon dioxide emissions than conventional fossil fuel power generation. Low-carbon power generation sources include wind power; solar power; hydropower; and nuclear power (that is, clean energy). See https://en.wikipedia.org/wiki/low-carbon_power.

sions, had signed and/or ratified it.¹² In endorsing the Paris Agreement, countries agreed to work to limit global temperature rise to well below 2 degrees Celsius and to strive for 1.5 degrees Celsius. Implementation of the Agreement is regarded by the UN as essential for the achievement of the SDGs and provides a roadmap for climate actions that will reduce emissions and build climate resistance.¹³

The UN calls upon not just businesses to help achieve the SDGs but also Governments, academia, civil society, and individuals. One of the targets in the overall Goal 13:

“Take Urgent Action to combat Climate Change and its impacts”

is to implement the commitment taken in 2010 by developed-country Parties to the UN Framework Convention on Climate Change (UNFCCC)¹⁴ to mobilize jointly, from public and private sources, funds rising to USD\$100 billion annually by 2020 to enable developing countries to pursue Climate Change actions through the operation and capitalization of this UN Green Climate Fund (GCF).¹⁵ The target can be viewed as one of the Climate Change challenges for the ethical behaviour of companies in industrialised countries in that it requires them to make financial sacrifices to help developing countries tackle Climate Change by taking mitigating and adaptation actions.

So, what are the key ethical values and ethical principles that business companies need to adopt to meet Climate Change challenges? The following section will consider these ethical issues.

¹² Or this number of Parties to the Convention had deposited their instruments of acceptance, approval or accession. The Paris Agreement op. cit. p. 2.

¹³ <http://www.un.org/sustainabledevelopment/climate-change>. Goal 13.

¹⁴ The UN Framework Convention on Climate Change held in 2010 took place in Cancun, Mexico.

¹⁵ The Green Climate Fund was set up in 2010 by the 194 countries who are Parties to the UN Framework Convention on Climate Change, as part of the Convention's financial mechanism – thus it is a fund within the UNFCCC framework. The Fund's investments can be in the form of grants, loans, equity, or guarantees. See <http://www.greenclimate.fund/who-we-are/about-the-fund> and Report of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators (E/CN.3/2016/2/Rev.1) Goal 13.a, p. 17.

3. ETHICAL VALUES AND ETHICAL PRINCIPLES THAT CLIMATE CHANGE CHALLENGES REQUIRE BUSINESS COMPANIES TO ADOPT

3.1. THE LACK OF EXPLICIT ETHICAL DIMENSIONS IN CLIMATE CHANGE DISCUSSIONS

It should be noted that ethical concerns are rarely made explicit in discussions about Climate Change and therefore are not scrutinized or debated adequately. Instead, Climate Change discourses take place mainly on a factual and technical level. To correct this shortcoming, the United Nations Educational, Scientific and Cultural Organization (UNESCO) requested the World Commission on the Ethics of Scientific Knowledge and Technology (COMEST) to report on “the ethical challenges posed by climate change as a global phenomenon”¹⁶ to enable the ethical implications of global Climate Change to be made more explicit. This COMEST report was published by UNESCO in 2010 with the aim of serving as a departure point for discussion among the scientific community and Member States of UNESCO, as well as other interested parties.

From the beginning the report highlights two characteristics of global Climate Change – uncertainty and vulnerability – that render it difficult to develop an ethical discourse about some aspects of Climate Change. Indeed, a double set of uncertainties exists – namely, the number of scientific uncertainties and the lack of clarity about what exactly the ethical challenges of global Climate Change are.¹⁷ Regarding vulnerability, the report cites the most vulnerable people facing the direct effects of global Climate Change as being those living in areas prone to flooding, such as small low-lying islands, large river deltas and certain coastal areas, as well as those residing in the Arctic where livelihoods are threatened by the summer loss of polar sea ice.¹⁸ Indeed, we have witnessed these

¹⁶ United Nations Educational, Scientific and Cultural Organization (UNESCO) “Report by the World Commission on the Ethics of Scientific Knowledge and Technology (COMEST)”, Paris, 2010 Ch. I “Introduction”, pp. 7-8.

¹⁷ Ibid. Ch. II “Uncertainties related to climate change” pp. 9-13.

¹⁸ The COMEST report indicates that equally vulnerable to the direct effects of global climate change are those people living in arid or semi-arid regions who are already, or will be, victims of prolonged droughts, and vulnerable groups, including the elderly affected adversely by heatwaves. Op. cit. pp. 12-13.

two phenomena of uncertainty and vulnerability during August-September 2017 and onwards with the catastrophic effects of Hurricane Harvey in Texas and Louisiana on the US Gulf Coast, the uncertainty over where Hurricane Irma would go, and the powerful cyclone Fani, in India in early May 2019.

Notwithstanding the constraints of uncertainty and vulnerability, the COMEST report sets out ethical values and ethical principles relevant to Climate Change challenges.¹⁹ While this paper confirms a number of these ethical values and principles, an alternative view is advanced here, which focusses more directly on finance and ethics and the role of business companies in the global context.

3.2. ETHICAL VALUES AND ETHICAL PRINCIPLES RELEVANT TO CLIMATE CHANGE CHALLENGES AND THE RESPONSIBILITY OF BUSINESSES

To clarify ethical values,²⁰ they differ from economic values, such as equity; from political values like democracy, and social values, such as equal opportunity. Ethical values concern ‘right’ and ‘wrong’, and ‘good’ and can guide the proper behaviour of businesses.

Ethical values include honesty; trust; integrity; fairness; and openness. However, before addressing ethical values – particularly openness and trust – this presentation will consider three ethical principles²¹ relevant to Climate Change challenges facing businesses in the global context, which are:

- the ethical principle of Financial Sacrifice for the Common Good
- the ethical principle of Solidarity, and
- the ethical principle of the Rights of, and Concerns for, Future Generations

¹⁹ The COMEST report Ch. III “The basis, nature and scope of ethics” op. cit. pp. 19-20.

²⁰ Ethical values are beliefs and opinions that organisations and individuals hold about good and bad and right and wrong – some values have a religious sanction.

²¹ An ethical principle is a notion that guides an organisation or person when making a decision or considering a matter relating to behaviour or moral conduct.

3.2.1. The ethical principle of Financial Sacrifice for the Common Good

What exactly is ‘the common good’? It is a notion that originated over two thousand years ago in the writings of Plato, Aristotle, and Cicero. More recently, the contemporary ethicist John Rawls, defined the common good as ‘certain general conditions that are...equally to everyone’s advantage’.²²

Examples of particular common goods or parts of the common good include clean air and an unpolluted environment, these being common goods to which everyone should have access. However, the common good does not just happen – establishing and maintaining the common good requires co-operative efforts and business companies are among those organisations needed to make sacrifices to attain the common good.²³

Financial sacrifices are expected by business companies to meet the common good of Climate Change mitigation and adaptation. The UN SDG13 –tackling Climate Change actions– calls upon individual business corporations to invest in improving their energy efficiency; reducing the carbon footprint²⁴ of their products, services and processes; setting emission reduction targets in line with climate science, and scaling up investment in the development of low-carbon products and services.²⁵ Furthermore, the UN Green Climate Fund, referred to earlier, seeks from public and private sources funds rising to USD\$100 billion annually by 2020. The fund was given an important role in 2015 in serving the Paris Agreement and supporting the aim of limiting the rise in global temperature to well below 2 degrees Celsius.²⁶ And, businesses are urged to make further financial sacrifices for the common good of Climate Change actions through other financial mechanisms set up at global and national levels, such as World Bank initiatives and the UK Green Investment Bank, now privatised.

²² Manuel Velasquez et al “The Common Good”, Markkula Center for Applied Ethics, 2 August 2014 at <https://www.scu.edu/ethics/ethics-resources/ethical-decision-making>

²³ Ibid.

²⁴ A carbon footprint is defined as the total set of greenhouse gas emissions caused by an organisation, product, event, or individual, expressed in equivalent tons of carbon dioxide.

²⁵ “Climate Action: Why it Matters to Businesses” [http://www.un.org/sustainabledevelopment/ClimateChange\(SDGGoal13\)op.cit](http://www.un.org/sustainabledevelopment/ClimateChange(SDGGoal13)op.cit).

²⁶ <http://www.greenclimate.fund/who-we-are/about-the-fund> op. cit.

The World Bank established Climate Investment Trust Funds (CIFs)²⁷ in 2008, before the existence of the UN Green Climate Fund, to provide finance to support developing economies to adopt low-carbon and climate resilient actions. CIFs are implemented through multilateral development banks²⁸ and are funded by a group of donor countries, including the USA, UK, and Germany. One of the aims of these investment funds is to unlock private investment.²⁹ Additionally, in 2016 the World Bank launched a new “Climate Business Innovation Network” which brings together venture funds, foundations, and others, to help small and growing businesses in developing countries, especially Africa, to move to clean technology. The network builds on The World Bank Group’s Climate Technology program – a program which at November 2016 had raised more than USD\$ 9 million in private financing and reduced or avoided more than 75,000 tons of carbon dioxide emissions.³⁰

At national level in the United Kingdom, the Government created in 2012 “UK Green Investment Bank plc” (GIB) to attract private funds to help fill the funding gap where Government funds fell short of the country’s commitment to generate a higher percentage of its energy from renewable sources.³¹ However, in 2017, the UK Government sold this Green Investment Bank, based in Edinburgh and London, to a consortium³² led by the private Australian Bank, Macquarie, for £2.3 billion

²⁷ The CIFs consist of four programmes: 1) Clean Technology Funds; 2) The Scaling Up Renewable Energy in Low Income Countries Programme; 3) Forest Investment Programme; and 4) Pilot Programme for Climate Resilience. See “The Climate Investment Funds (CIFs)” at <http://www.gov.uk/government/case-studies/the-climate-investment-funds>

²⁸ The 5 development banks implementing the CIFs are the African Development Bank; the Asian Development Bank; the European Bank for Reconstruction and Development; the Inter-American Development Bank; and the International Finance Corporation.

²⁹ Ibid.

³⁰ “World Bank Group launches Climate Business Innovation Network” at <http://www.worldbank.org/en/news/press-release/2016/11/16>

³¹ See https://en.wikipedia.org/wiki/UK_Green_Investment_Bank. The UK Green Investment Bank (GIB) is reported to have stakes – either directly or via funds managed by third parties – in 85 projects ranging from a windfarm in Dumfries and Galloway; a biomass plant in Port Talbot; and an energy-from-waste plant in Belfast. See “Green Investment Bank sell-off described as a disaster by critics” *The Guardian* newspaper, 20 April 2017.

³² The consortium includes Macquarie’s European Infrastructure Fund and the UK Universities Superannuation Scheme (a pension fund for university academics). Ibid.

and it is now named the “Green Investment Group”.³³ When under UK Government control the Green Investment Bank had attracted over £10 billion of private investment, as well as Government funds.³⁴ Numerous critics in the UK, including environmentalists, have labelled this privatisation a disaster, and a fear has been expressed³⁵ that in the long-term the GIB will simply disappear into the commercial part of Macquarie. While Macquarie intends to combine GIB with its UK renewable energy investing business to create one of Europe’s largest teams of green energy investment specialists –and has invested already in one of Germany’s largest wind farms–³⁶ Macquarie will need to engage in further financial sacrifice to avoid these fears of self-interest rather than the common good.

3.2.2. The ethical principle of Solidarity

Solidarity is the unity of a group or class which produces, or is based on, unities of objectives, interests, or sympathies. Solidarity refers to the ties in a society that bind people together as one. The term is employed in Sociology, and other Social Sciences, in Philosophy and Religion. The Sociologist Émile Durkheim, for example, wrote about solidarity in his book “The Division of Labour in Society” (1893). And, in Catholic Social teaching solidarity, seen to flow from faith, it is deemed a characteristic of society where each person is connected to and dependent on all humanity, collectively and individually.³⁷

In the case of business companies in the global context, solidarity regarding Climate Change challenges has been expressed in several instances. For example, “Caring for Climate”, launched in 2007, is the

³³ Macquarie will keep the GIB’s offices in Edinburgh and London. “UK Government completes sale of Green Investment Bank”, BBC News, 18 August 2017 at <http://www.bbc.co.uk/news/uk-scotland-scotland-business>

³⁴ The UK Government maintains that the privatisation deal ensures that all taxpayer funding invested in the GIB has been returned, with a gain of around £186 million for the taxpayer. However, some people claim that the bank was sold off too fast and too cheaply. The Guardian newspaper op. cit.

³⁵ Dr Vince Cable, who launched the UK Green Investment Bank in 2012 when Business Secretary, expressed this fear. Ibid. and The Guardian newspaper op. cit.

³⁶ The Guardian newspaper op.cit.

³⁷ “Solidarity” at <https://en.wikipedia.org/wiki/solidarity>

UN's initiative for business leadership on Climate Change.³⁸ It is a membership group of some 463 global organisations across the range of business sectors from transportation to financial services: they are a critical mass of business leaders unified in their commitment to help prevent a Climate Change crisis by implementing practical solutions and policies and sharing experiences. Signatories to "Caring for Climate" are from companies in the UK, Denmark, Germany, Portugal, Spain, the USA, China, Pakistan, and Sri Lanka – to name a few countries – and are united in the belief that Climate Change risks are "Everybody's Concern and Everybody's Business".³⁹

Regarding business corporations based or operating in the United States of America in particular, many have confirmed their solidarity for the Paris Agreement on Climate Change – even though in early June 2017 President Donald Trump announced the US withdrawal from the Agreement, which included immediately ceasing contributions to the UN Green Climate Fund.⁴⁰ Solidarity by these major companies took the form of full-page advertisements appearing in May and June 2017 in *The New York Times*; *The Wall Street Journal*, and *New York Post*. The advertisements, addressed to the President, informed him that participation in the Paris Agreement would help US companies to manage climate risks and compete in growing global clean energy markets. The large corporations signing off these advertisements included Adobe; Apple; Facebook; Gap, Inc.; Google; Hewlett Packard Enterprises; Levi Strauss & Co.; Microsoft, and Morgan Stanley.⁴¹

Another expression of solidarity for the Paris Agreement has flourished at state and city levels in the USA with many state governors and city mayors pledging to meet their Climate Change goals. For example, the 'We Are Still In' campaign response to President Trump's decision to remove the US from the Paris Agreement includes not only businesses

³⁸ The initiative "Caring for Climate" was convened by the UN Global Compact, the Secretariat of the UN Convention on Climate Change (UNFCCC) and the UN Environment Programme (UNEP). See <http://caringforclimate.org/about/list-of-signatories/>

³⁹ Ibid.

⁴⁰ See "Paris climate agreement: World reacts as Trump pulls out of accord – as it happened" *The Guardian* newspaper 1 June 2017.

⁴¹ The advertisements were sponsored by C2ES in co-operation with Ceres, the sustainability not-for-profit organisation. See "Business Support for the Paris Agreement" at <https://www.c2es.org>

dedicated to the US remaining a global leader in reducing emissions, but also US cities, counties, states, universities, and others, such as the philanthropist Michael Bloomberg.⁴²

It is hoped that the solidarity shown so far by businesses in support of Climate Change actions will remain sincere and implemented.

3.2.3. The ethical principle of the Rights of, and Concerns for, Future Generations

Man-made Climate Change is not only global but also intergenerational. If earlier generations exploit the future by taking modest benefits for themselves now, they are likely to pass on potentially catastrophic costs later for future generations.⁴³ Take, for example, the greenhouse gas, carbon dioxide (CO₂). It is difficult to extract CO₂ from the atmosphere once it is deposited there, and current CO₂ emissions will have effect only at some future time – in other words, their effects are time-delayed.

To discuss the ethical principle of the rights of, and concerns for, future generations, two issues need to be examined: those of reciprocity and discounting.

In the case of reciprocity, different generations do not share the same time horizon and thus cannot influence one another reciprocally. Reciprocity is a central presumption of well-established deontological, utilitarian and contractual frameworks for moral decision-making.⁴⁴ However, a distant generation that does not overlap with ours cannot hold us accountable and claim compensation from us, nor exercise any rights with reference to us because, when they do so, we will not exist any more. To address this problem of reciprocal rights, we need to look at how far ahead we should be considering in regard to our Climate Change actions today – that is, how many future generations are involved for us? If we think about an infinite number of future generations, we pose ourselves problems. The COMEST report, mentioned earlier, suggests that it is easier for us to envisage future impacts in a shorter time frame of, say, 100 years,

⁴² “Trump can’t stop US leading on climate action”, article by Diana Rojas, US briefing in Ethical Corporation, July 2017. See also wearestillin.com.

⁴³ Stephen Gardiner “Why climate change is an ethical problem”, The Washington Post, 9 January 2016.

⁴⁴ The COMEST report op. cit. p. 31.

as it enables us to imagine future people without difficulty and to respond realistically. Furthermore, it enables us to view them as bearers of rights and agents who can make claims that we can support, negotiate, and even plan for in the present and – as such – we enter into a position of “reciprocating in advance”.⁴⁵

In the case of discounting, it is at the interface of economics and ethics. In economic terms the discount rate corresponds to the cost of capital and it captures the notion of “rate of return” that connects the past to the future.⁴⁶ Governments and businesses, when making investments, normally consider rates of return and if an investment looks likely to deliver a decent return, it is worth making.⁴⁷

Concerning Climate Change, the UK Prime Minister Tony Blair, M.P., when in office, asked the economist Lord Stern, to examine the economics of Climate Change and Stern’s Review was published in 2006.⁴⁸ He used cost-benefit analysis based on long-term economic modelling, and concluded that there was an overwhelming case for urgent, immediate, and rapid reductions in greenhouse gas emissions on the grounds that prevention is cheaper than inaction.⁴⁹ Stern adopted the annual discount rate at which future costs and benefits are discounted –known as the social discount rate– of close to zero. However, some economists argued that the welfare of people living in the future should be discounted at a higher rate, nearer real marketplace interest rates of, say, 3% (the higher the rate the lower the value of future benefits and vice versa).⁵⁰ In other

⁴⁵ The COMEST report op. cit. p. 31.

⁴⁶ The COMEST report op. cit. p. 32.

⁴⁷ “Is it worth it?: What economists have to say about mitigating climate change”, *The Economist*, 3 December 2009.

⁴⁸ “Stern Review: The Economics of Climate Change” published by HM Treasury/ Cabinet Office, 30 October 2006. The report was archived in 2010. However, it has been published in paperback by Cambridge University Press, January 2007 (ISBN 9780521700801).

⁴⁹ “Human Development Report 2007/2008 Fighting Climate Change: Human solidarity in a divided world”, published for the UN Development Programme (UNDP) p. 62.

⁵⁰ William Nordhaus, an Economics Professor at Yale University, was one critic of Stern’s near zero discount rate, see *The Economist* op. cit. Later, however, Professor Nordhaus moved closer in general to the conclusions in the Stern Review, see “Growth and Sustainability: 10 years on from the Stern Review”, public lecture by Lord Stern given at the London School of Economics and Political Science, 27 October 2016 (pdf version).

words, the welfare of those residing in the future should receive less weight than allowed for in the Stern Review compared to the costs incurred in the present. Accordingly, Stern's critics advocated only a modest rate of emission reductions in the near future, followed by greater reductions in the longer term, in the belief that the world economy will probably grow richer and technological capacities develop over time.⁵¹

Today businesses need to reflect deeply on how they value future generations and how much cost they are willing to incur in the present for the benefit of earth's future inhabitants.

3.3. ETHICAL VALUES RELEVANT TO BUSINESS COMPANIES IN REGARD TO CLIMATE CHANGE

Moving now to ethical values, time permits this presentation to address only two ethical values – those of openness and trust when discussing businesses and their Climate Change actions.

3.3.1. Openness as a necessary Ethical Value for businesses in regard to Climate Change

Openness for businesses in respect of Climate Change means transparency and disclosure of their climate-related financial risks. In June 2017 an industry-led Task Force on Climate-related Financial Disclosures (TCFD),⁵² set up by The Financial Stability Board (FSB),⁵³ published its final⁵⁴ recommendations. These voluntary recommendations are intended for use by companies in providing information about their cli-

⁵¹ “Human Development Report 2007/2008” op. cit. p. 62.

⁵² The international Task Force on Climate-related Financial Disclosures was established by the FSB in December 2015, chaired by Michael Bloomberg. The 32 industry members of the Task Force are drawn from a wide range of industries and countries. See FSB Press Release 29 June 2017 at the FSB website www.fsb.org

⁵³ The Financial Stability Board (FSB) is chaired by Mark Carney, Governor of the Bank of England. Its Secretariat is located in Basel, Switzerland, and hosted by the Bank for International Settlements. The FSB was created by the G20 in the aftermath of the 2007-08 financial crisis to co-ordinate at international level the work of the national financial authorities. Ibid.

⁵⁴ A draft of the Task Forces' recommendations was put out for public consultation in December 2016. FSB Press release 29 June 2017 op. cit.

mate-related financial risks to investors, lenders, and insurance underwriters.⁵⁵

More than 100 companies globally signed a statement affirming their support for the Task Forces' voluntary recommendations. Their letter acknowledged that business leaders have an important role to play in ensuring transparency around climate-related risks and opportunities to enable market forces to drive efficient allocation of capital and to facilitate more informed business and investment decision-making. The signatories urged other business leaders to join in this united effort – another example of solidarity – to improve disclosure across sectors and regions.⁵⁶

Shortly after publication of the Task Force recommendations, the UK fund house, Aviva Investors, which oversees USD\$437 billion of assets, alerted more than 1,000 business companies globally that they will face shareholder backlash at their Annual General Meetings in 2018 if they fail to disclose the risks posed to their business models by Climate Change. Indeed, Aviva Investors declared that it would vote against the Annual Reports and Accounts of companies that fail to embrace the Task Forces' recommendations, and Aviva is the first asset manager to state so publicly. Aviva Investors' stance is perceived as the latest sign that investors are increasingly concerned about the impact of Climate Change on returns. Indeed, some investors have begun already to reduce their investments in companies likely to suffer from attempts to tackle Climate Change, particularly those that generate revenues from oil, gas, and coal.⁵⁷

Banks, too, are called upon by the Task Force to disclose their lending to companies having risks associated with direct and indirect greenhouse gas emissions (that is, carbon-related risks). Some 11

⁵⁵ The Task Force recommendations are structured around 4 thematic areas: 1) Governance (the organisation's governance around climate-related risks and opportunities); 2) Strategy (the actual and potential impacts of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning); 3) Risk Management (the processes used by the organisation to identify, assess, and manage climate-related risks), and 4) Metrics and Targets (the metrics and targets used to assess and manage relevant climate-related risks and opportunities). FSB Press Release 29 June 2017 op. cit.

⁵⁶ See Statement by companies committing to the Task Force on Climate-related Financial Disclosures at <https://www.fsb-tcfd.org/wp-content/uploads/2016/12/Statements-of-Support-All>

⁵⁷ "Aviva Investors demands greater climate change disclosure", Financial Times 20 July 2017 at <https://www.ft.com>. Other sectors likely to be most affected by Climate Change are transportation; construction; agriculture; food and forestry.

global banks, including ANZ, Barclays, Royal Bank of Canada, Santander, and UBS,⁵⁸ have joined forces with the UN⁵⁹ to promote climate transparency in financial markets and they are committed to developing analytical tools and indicators to strengthen assessments and disclosures of climate-related risks and opportunities.⁶⁰

Also, in the case of insurers, like AXA, they are concerned as well about Climate Change risks. AXA has pointed out that we are seeing the frequency and intensity of natural disasters linked to Climate Change increasing every year. AXA warned that “We consider a world of plus two degrees may still be insurable but a world of plus four degrees might not be”.⁶¹

Openness –or disclosure– by businesses about their Climate Change risks, then, is not only an ethical value but also a financial necessity.

However, openness by businesses is not only about their Climate Change risks. Openness also embraces ‘sustainable reporting’ by companies in their annual Sustainability or Corporate Social Responsibility reports by which they communicate with their stakeholders and investors. Sustainability reporting in general has been developing over the years, with bodies like the Global Reporting Initiative (GRI)⁶² and the International Integrated Reporting Council (IIRC)⁶³ encouraging companies to improve their reporting.

⁵⁸ The other 6 global banks are Bradesco; Citi; Itau; National Australian Bank; Standard Chartered; and TD Bank Group, see “Eleven global banks partner with UN to make financial markets more climate transparent” at <http://www.un.org/sustainabledevelopment/blog/2017/07>

⁵⁹ The initiative is between 11 financial institutions and the UN Environment Programme (UNEP) and is a collective effort led by UN Environment to enable banks to follow the recommendations of the Task Force. See “Eleven of the world's leading banks to work with United Nations to promote climate transparency in financial markets”, Press Release 11 July 2017, see <http://www.unep.org/newscentre>

⁶⁰ *Ibid.*

⁶¹ “Banks should disclose lending to companies with carbon-related risks, says report” *The Guardian* newspaper 29 June 2017 at <https://theguardian.com/environment/2017/jun/29>

⁶² The Global Reporting Initiative (GRI) is an international independent organisation which inter alia has pioneered sustainable reporting for businesses and other organisations since the late 1990s, see <https://www.globalreporting.org>

⁶³ The International Integrated Reporting Council (IIRC) is a global coalition of regulators, investors, companies and others which promotes communication about value creation in regard to corporate reporting, see <https://integratedreporting.org>

Regarding the UN SDGs, including Goal 13 on Tackling Climate Change, reporting by companies is at a relatively early stage, but evidence exists of companies integrating their work on the Goals into their mainstream reporting processes. The SDGs are seen as an excellent basis for corporate reporting frameworks because all the UN member states have agreed to move towards these Goals and it is important for the private sector to contribute to making the Goals a reality. Indeed, in order to help companies connect their achievements of the SDGs, the GRI has partnered with the UN Global Compact⁶⁴ to set up in 2016 the “Reporting on the SDGs Action Platform”. One aim is to establish best practices for corporate reporting on the SDGs, and the first outcome publication of this Action Platform was launched in New York in September 2017.⁶⁵

3.3.2. Trust as a necessary Ethical Value for businesses in regard to Climate Change

‘Trust’ is important to businesses as an ethical value to incorporate into their Code of Ethics/Conduct or similar framework for good corporate behaviour. Trust in practice involves a relationship between two parties – the one who places his/her trust in another who holds it. A

⁶⁴ The UN Global Compact is a voluntary framework for businesses based on 10 Principles in the areas of human rights, labour, the environment and anti-corruption. It was launched officially at UN Headquarters in New York in July 2000. There are now nearly 13,000 corporate participants and other stakeholders globally in over 170 countries (9,000 of the participants being from companies). See <https://www.un-globalcompact.org/what-is-the-gc/participants>

⁶⁵ The first Action Platform outcome publication was launched on 21 September 2017 at the UN Global Compact Leaders Summit in New York entitled “Business Reporting on the SDGs: An Analysis of the Goals and Targets”, see <http://www.sustainability-reports.com>. Other developments by GRI, the UN Global Compact and the World Business Council include an ‘SDG Compass’ which provides 5 steps to guide companies on how to align their strategies to the SDGs and to measure and manage their contribution to the Goals. The fifth step covers reporting and communicating and it is believed that, since the SDGs have common indicators and a shared set of priorities, they can enable companies to report information on their sustainable development performance. See Ethical Corporation White Paper “SDGs and Sustainable Reporting”, July 2017 at www.ethicalcorp.com

betrayal of trust damages the relationship which cannot easily, or should not necessarily, be restored, so loss or punishment ensues.⁶⁶

With regret, the relationship of trust between the German company Volkswagen AG (VW), and consumers, Governments, and others, has suffered by the emissions scandal which has led to a fall in the company's share price, the heavy cost of recalling cars, legal cases against VW and certain of its employees, and damage to the company's global reputation.

As early as 2006, while helping to develop a new diesel engine for the US market, VW engineers⁶⁷ realised that customer demand for performance and fuel economy would make it difficult to comply with the new US limits for Nitrogen Oxides (NO_x), hazardous by-products of diesel fuel combustion. To solve this dilemma, the VW engineers inserted in the diesel engines of their new cars a switch function (the 'defeat device' being computer software) that would engage fully the engine's pollution controls only when the car was in the laboratory being tested. Once on the road, the engines switched out of this test mode, to emit Nitrogen Oxide pollutants way above the US limits.⁶⁸ Moreover, VW undertook a major sales campaign to sell diesel cars in the United States, heralding their cars' low emissions.⁶⁹

By 2015 the US Environmental Protection Agency (EPA) discovered that many VW cars being sold in America were fitted with the so-called 'defeat device' and the US Government demanded VW to recall thousands of VW and Audi cars produced since 2009.⁷⁰ What began in the US has spread to other countries where regulators and environmental groups

⁶⁶ Ed. "Corporate Social Responsibility: The Governance of the 21st Century" Ch. II: Business Ethics by Rosamund Thomas, Kluwer Law International, 3rd ed. forthcoming 2020.

⁶⁷ One of the VW engineers, James Liang, a German national who helped to develop the software, pleaded guilty and was sentenced in August 2017 by Judge Sean Cox in the US District Court for the East District of Michigan, USA, to 40 months in prison and a USD 200,000 fine for his role in the corporate fraud and violation of the US Clean Air Act. He was the first VW employee to be sent to prison, see "Volkswagen Engineer gets Prison in Diesel Cheating Case". The New York Times, 25 August 2017 at <https://www.nytimes.com/2017/08/25/business>

⁶⁸ "3-year sentence recommended for engineer in Volkswagen emissions scandal", Detroit Free Press, 18 August 2017 at <http://www.freep.com>

⁶⁹ "Volkswagen: The scandal explained", BBC News, 10 December 2015 at <http://bbc.co.uk/news/business-34324772>

⁷⁰ "German minister tells Volkswagen to clear up emissions scandal" The Guardian newspaper, 21 September 2015.

have questioned the legitimacy of VW's emissions testing, with cars being recalled by VW, for example, in Europe as well as the US, including petrol vehicles.⁷¹ During 2015 VW's then Chief Executive Officer, Martin Winterkorn (since resigned)⁷² apologised for the scandal, stating that:

“...we have broken the trust of our customers and the public”.⁷³

It has been found subsequently that VW is not alone in the global auto industry to have had its diesel vehicles emitting far more NO_x emissions in real-world driving than in government-designed testing scenarios. Many other manufacturers and their brands have been named, including General Motors German brand, Opel; Daimler; Mitsubishi; Renault; PSA; Honda; and Mazda, although not all of them installed an actual 'defeat device'.⁷⁴

The unethical and illegal⁷⁵ behaviour of some automobile companies, including breaches of trust, have caused not only damage to company reputations, but also to the wider global car industry. And, of course, the environment has been afflicted by more hazardous pollutants being emitted into the atmosphere than is desirable.

4. CONCLUSIONS

Lord Stern delivered a public lecture in London in October 2016 reviewing 10 years on from the earlier Stern Review. He asserted in his lecture about Climate Change that:

⁷¹ BBC news, 10 December 2015 op. cit.

⁷² Martin Winterkorn resigned as CEO of VW in September 2015. Herbert Diess is the current CEO of Volkswagen. Since 2019 Winterkorn faces prosecution for fraud in Germany and the USA for his role in the carmakers' manipulation of diesel emissions.

⁷³ The Guardian newspaper 21 September 2015, op. cit.

⁷⁴ “The Facts Behind Every Major Automaker Emissions Cheating Scandal since VW” 25 May 2016 at <http://www.roadandtrack.com/new-cars/car-technology> and “Four more carmakers join diesel emissions row”, The Guardian newspaper 9 October 2015 at <https://www.theguardian.com/environment/2015/oct/09/>

⁷⁵ In the case of VW, six other VW executives, including Oliver Schmidt, have been indicted in the US, see U.S. v. Volkswagen, 16-cr-20394 “Volkswagen Diesel Engine Vehicle Matters”, US District Court for the East District of Michigan. See also New York Times, 25 August 2017 op. cit.

...“The science is robust” and the “evidence grows ever stronger that risks are immense and still larger than previously thought...Many of the effects [are] coming through more rapidly than thought (loss of ice sheets, glaciers etc.)”...and “potential damage from Climate Change intensifies as the world gets warmer”.⁷⁶

Stern pointed to the increasing financial commitment of private sector firms and investors. Among his examples are the Swedish National Pension Fund, which up until 2016 had made the biggest low-carbon commitment of an institutional investor – USD\$ 3.2 billion in investment funds. And IKEA has pledged euros 1 billion on renewable energy and Climate Change efforts.⁷⁷

On the issue of future generations and social discounting, Stern voiced his rejection of market interest rates – or rates of return – arguing that “markets do not reflect ethical decisions”.⁷⁸

Despite his appeal for urgency, Stern optimistically acknowledged the several recent breakthroughs for global collaboration on Climate Change and development, including the Paris Agreement, supported by 175 Parties, which aims to limit the rise in global temperature to well below 2°C but with efforts to reach 1.5°C, and other initiatives, and also the UN SDGs.⁷⁹

Regarding concerns about investments in fossil fuels, it was announced on 4th October 2017 (on the anniversary of the death of St. Francis of Assisi), that 40 Catholic institutions will divest from fossil fuels – although the total amount of money involved has yet to be disclosed publicly. Also, Caritas, the German Catholic relief agency, reported to have assets worth US\$4.5 billion, has declared that it, too, would soon divest from any holdings tied to coal, tar sands, and petroleum. Indeed, other Catholic organisations and faith groups have made such changes to their portfolios since Pope Francis issued his encyclical on Climate Change in 2016.

⁷⁶ Professor Lord Stern “Growth and Sustainability: 10 years on from the Stern Review” *op. cit.* pp. 8-9.

⁷⁷ *Ibid.* p. 18.

⁷⁸ Professor Lord Stern “Growth and Sustainability” *op. cit.* p. 26.

⁷⁹ *Ibid.* pp. 28-31. When formalised, President Donald Trump’s withdrawal of the USA from the Paris Agreement will reduce the number of Parties which have signed the Agreement.

Business companies and investors, therefore, need to take account of these investments.⁸⁰

Another viewpoint on Climate Change is contained in a new study published in *The Lancet Planetary Health Journal* in August 2017 which documents the findings on “Increasing risk over time of weather-related hazards to the European population”. This data-driven prognostic study focussed on weather-related hazards having the greatest impacts – heat-waves and cold waves, wildfires, droughts, river and coastal floods and windstorms. The authors’ projected findings suggest that weather-related disasters could affect some two-thirds of the European population annually by the year 2100, with about 50 times the number of human fatalities occurring annually by 2100, dominated by global warming leading to a rise in the frequency of heatwaves. The authors warn that Climate Change is one of the biggest global threats to human health in the Twenty First century and its perils will be connected increasingly to weather-driven hazards.⁸¹

And, of course, weather-related disasters are not limited to Europe, as we have witnessed during 2017 with the spate of catastrophic hurricanes creating severe flooding and structural damage in South Asia, the Caribbean, and the United States of America.

Migration patterns, too, are likely to be exacerbated by climatic events. The loss of place of residence or economic disruption caused by extreme weather events results in population displacement – even if only temporary in some cases. In 2015, 14.7 million people were displaced due to disasters triggered by weather-related hazards (primarily flooding and storms). Although some of these ‘climate migrants’ remain within their own country, others may move across border to a neighbouring country. Climate Change over the Twenty First century is projected to increase the displacement of people.⁸²

⁸⁰ See “Catholic Church Accelerates Divestment in Fossil Fuels” by Leon Kaye at <http://www.triplepundit.com/2017/10/catholic-church-accelerates-...> St. Francis of Assisi died at Portiuncula, Italy, on 4th October 1226.

⁸¹ Dr Giovanni Forzieri et al. : “Increasing risk over time of weather-related hazards to the European population: a data-driven prognostic study”. *The Lancet Planetary Health Journal* Vol. I No. 5, August 2017.

⁸² Soumyadeep Banerjee and Arabinda Misha: “Migration and Environmental Change in the Sustainable Development Goals”, Ch. in *Migration in the 2030 Agenda* published in 2017 by the International Organization for Migration (IOM), Geneva, Switzerland (an intergovernmental organization).

However, in Africa, Governments can now pool their drought and harvest failure risks with other African nations through a new insurance scheme – the African Risk Capacity (ARC) – which has been established. ARC is seen as a fresh way of managing climate impacts through adaptation by enabling African countries to prepare for, and protect against, negative human and financial impacts of Climate Change. This insurance scheme may help in the future to reduce migration from Africa caused by negative climate events.⁸³

Migration, like Climate Change, is contained within several of the UN Sustainable Development Goals (for example Goal 10)⁸⁴ with the aim of attainment by 2030 – another challenge of a business and ethical kind for companies in the global context.

Finally, the current electric car revolution is helping to restore the damaged reputation of automobile manufacturers following the emissions scandal associated with diesel and petrol vehicles. Different car manufacturers globally are now bringing out attractive electric cars – among them is Germany’s BMW’s purely electric-powered Mini; Chinese-owned Swedish car manufacturer, Volvo’s, pledge for every new car in the range to be partially or completely battery-powered by 2019; and American carmaker Tesla, announcing production of a budget version of their Model 3 electric car.⁸⁵ The Frankfurt Motor Show in September 2017 showcased many of the latest pure electric and hybrid versions.⁸⁶ The UK Government, moreover, has vowed from 2040 as part of its air quality plan to scrap diesel and petrol cars, with drivers being allowed to buy only electrically-powered cars.⁸⁷

⁸³ For further details, see “African Risk Capacity (ARC)” at www.africanriskcapacity.org

⁸⁴ Target 10.7 within SDG10 aims to “Facilitate orderly, safe, regular and responsible migration of people, including through the implementation of planned and well-managed migration policies”. See earlier Note 7 for SDG details.

⁸⁵ “Charging into battle”, Daily Express newspaper 27 July 2017. The BMW electric Mini will be assembled in Oxford, England.

⁸⁶ An electric vehicle has no internal combustion engine. Instead an electric motor powers the wheels by drawing energy stored in a battery which can only be topped up by plugging into a charging point. A hybrid vehicle has an electric motor that can run the car for zero-emission driving, but it also has a traditional engine as back-up. Thus, if the driver is stuck without any electricity, he/she can drive on petrol or diesel power instead. See “Your Guide to the Electric Car Revolution”, Daily Express newspaper, 16 September 2017.

⁸⁷ Ibid.

In the case of Volkswagen, the Group plans an electric option for all of its 300 models by 2030, recognising belatedly that people want clean air.⁸⁸ Thus, toxic pollutants emitted into the atmosphere from automobiles are likely to reduce substantially in the future, but electrically-powered vehicles are not without their own drawbacks.⁸⁹

To conclude, it is clear that companies have an important role to play in fulfilling their part in world attempts to protect our environment both for the present and for future generations – and this role needs ethics to be integrated into the business approach.

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⁸⁸ “Volkswagen plans electric option for all models by 2030”, BBC news, 11 September 2017 at <http://bbc.co.uk/news/business-41231766>

⁸⁹ Drawbacks of electric vehicles include a lack to date of charging points, limited battery range, and, as sales increase, a massive surge of electricity needed to power these vehicles. Daily Express newspaper, 16 September 2017 op. cit.