Czech University of Life Sciences

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Diploma Thesis

FREE MARKET ENVIRONMENTALISM

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Declaration

I hereby certify that the Diploma Thesis “Free Market Environmentalism” was written independently and that all literature and other sources I used to compile the Thesis are listed in the Bibliography and properly cited in the text.

Date: ……. *Signed: …….*

Acknowledgement

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FREE MARKET ENVIRONMENTALISM

SOUHRN

Ačkoliv v současnosti dochází ke klimatickým změnám, dokážeme, že mnohá dogmata o globálním oteplování nejsou zakládána na faktech a neshodují se s výsledky vědeckých výzkumů. Namísto nepodložených malthusiánských tvrzení o katastrofálním růstu teplot, bezprecedentním tání ledovců či vlivu oxidu uhličitého na globální teploty, bude tato práce racionálně přistupovat ke stanovenému problému a analyzovat skutečnost.

Stejně jako naše poznatky o klimatickém systému nejsou zdaleka kompletní, ani debata o globálním otepolováním nemůže být smysluplně uzavřena. Tato práce je kritickým rozborem různých pohledů a přístupů vůči klimatickým změnám. Výsledky budou interpretovány na základě logických argumentů.

Diplomová práce se rovněž zaměřuje na možná řešení a jejich kritiku. Předkládá důkazy toho, že státní intervence i v oblasti životního prostředí, jenž je už z hlediska svého charakteru krátkodobá, účelová a politicky (ne vědecky) motivovaná, má spíše negativní účinek a její dopady jsou mnohdy tragické.

SUMMARY

Although the state of climate is currently changing, the Diploma Thesis proves many dogmas about global warming are neither based on facts, nor in accordance with results of scientific research. Instead of unproven Malthusian declarations of catastrophic temperature rise, unprecedented ice sheet melting and carbon dioxide impact on global temperatures, this work will rationally analyze the problem and today's reality.

The debate about global warming cannot be over yet, since overall knowledge of climate system is not complete and satisfactory. This work is to critically observe different views and approaches towards climate change. Results will be based on logical arguments.

Diploma Thesis also focuses on possible solutions and their critique. Evidence will show that state intervention into environment is politically (rather than scientifically) motivated, purpose-built and short-term. Therefore, its results are rather negative with almost tragic impacts.

Klíčová slova:

Globální oteplování, životní prostředí, klimatické změny, státní intervence, biopaliva, antropogenní oteplování, přírodní vlivy

Keywords:

Global warming, environment, climate change, state intervention, biofuels, anthropogenic warming, natural forcing

CONTENTS

1. INTRODUCTION

Subject of presented work is the state of nature in the early 21st century in respect of global climate change. During the current period of so called 'global warming' I feel strong obligation to explore as many facts and opinions as possible in order to understand the nature of the problem. My sense of commitment not only comes from the desire to learn but also because of my interest as a citizen, a taxpayer and a student of economy.

Very often the public can hear of scientific consensus on global warming. Some politicians, scientists and activists warn of dangerous levels of CO_2 in the atmosphere causing unprecedented warming of the Earth due to human activity. Similar voices worry about increased sea level rise, ice core melting and overall climate damage. However, climate is not stable. It has no ideal state which everyone could or even should consider as right, since meteorological factors on the planet Earth have always been changing. The world has gone through times of relative higher temperatures, such as so called Holocene maximum but also suffered from several ice ages. Long before men drove cars, burned oil, or even walked, the climate had been changing. Still, nowadays there is much concern about climate change. Some predictions even emphasize heavy temperature rise in the near future as a cause of human activities. The work deals with mentioned concerns and seeks the answers within scientific community. At the same time its purpose is to analyze current situation of the environmental legislation, its motive, outcome and reason mainly on international level.

The work will investigate whether proactive governmental approach towards environmental protection, coined mainly by environmental movements and ecological alarmists, is the most effective way of preserving the nature on our planet. Throughout my diploma thesis I'll put stress on preservation of individual liberties and keep in mind words of president Vaclav Klaus:

„The largest threat to freedom, democracy, the market economy, and prosperity at the end of the 20th and at the beginning of the 21st century is no longer socialism or

communism. It is, instead, the ambitious, arrogant, unscrupulous ideology of environmentalism. This ideological stream has recently become a dominant alternative to those ideologies that are consistently and primarily oriented toward freedom. It is a movement that intends to change the world radically regardless of the consequences (at the cost of human lives and severe restrictions on individual freedom). It intends to change humankind, human behavior, the structure of society, the system of values – simply everything.“ (Klaus, 2008)

2. OBJECTIVES OF THESIS AND METHODOLOGY

Scarce resources are being spent in order to combat carbon dioxide emissions, to subsidize biofuels and to preserve the climate as we know it today. Whether governmental actions are necessary and effective will be one of the goals of the work. In this sense the methodology used to explore the subject will be based on critical thinking.

An elementary aim of this diploma thesis is to critically observe current state of climate change research and related group interests and political powers. Due to increasing arrogance and intolerance among those favoring the approach of proactive environmental legislation, procedures and results of such approach will be analyzed. Since main effort is often made to impugn the credibility of those engaged in the debate, this paper rather focuses on finding matter-of-fact, reliable answers instead of populistic proclamations. Much disagreement and controversy can still be found within the society therefore, the work will analyze a role of humans in respect of the climate change, its true scale and variations over time. Traits of descriptive analysis are used as the methodology since the project is seeking knowledge about a firmly defined question.

The key meteorological terms are mentioned and explained. Since the climate is a very complex system, possible factors such as greenhouse-effect, solar irradiance, volcanic activity, urban heat island effect and ocean multi-decadal changes will be under focus. Human activities and natural forcing which affect climate change are named and their impact on the environment is analyzed. By using logical deduction, mentioned factors will be researched and their effect on the climate will be emphasized. The work is to focus on various approaches towards climate change.

Diploma Thesis is based on extensive literature review as a part of theoretical input. Practical results are based on data collected from various organizations or individuals of scientific community as well as from personal correspondence. Both theoretical and practical parts are strongly connected therefore the Thesis is not regularly separated and is rather compound into follow-up chapters. Methodological individualism is the main technique of work.

Main hypothesis of the work: “Nature can be preserved without massive intervention of state, therefore without harming human liberties.”

3. CLIMATE AND ITS CHANGE

In order to start this chapter, let's define some related terms. This is crucial for clear understanding of the problem and serious debate. As the work becomes more in-depth, more terms will be explained.

The term '*weather*' refers to current activity of meteorological factors mentioned. It is understood as „a short-term variations of the atmosphere state." [1] NASA defines weather as "the state of the atmosphere at some place and time." [2]

The term '*climate*' often refers to numerous meteorological factors concerning the status of the entire Earth system such as humidity, rainfall, temperature etc. over long-term period. It is the accumulation of daily and seasonal weather events over long period of time at given territory, affected by land's terrain, latitude, altitude, persistent ice or snow cover and nearby oceans.

What is meant by ‚long period of time'? Some authors and scientists acknowledge decades, some even longer segment of time. Even though there is no exact time definition, let's define the climate as an aggregate of weather conditions over several decades.

3.1 What is the climate change?

According to Palutikof: "Climate change refers to a change in the state of the climate that can be identified (e.g., using statistical tests) by changes in the mean and/or the

[1] NSIDC – National Snow and Ice Data Center: *Arctic Data* [online], Last update 21st December 2006 [cit. 2008-11-23]. <http://nsidc.org/arcticmet/basics/weather_vs_climate.html>

[2] Brian Dunbar, *NASA worldbook* [online]. Last update 29th November 2007 [cit. 2009-2-18]. <http://www.nasa.gov/worldbook/weather_worldbook.html>

variability of its properties, and that persists for an extended period, typically decades or longer.“ [3]

Climate is generally defined as an average weather, and as such, climate change and weather are intertwined. “Observations can show that there have been changes in weather, and it is the statistics of changes in weather over time that identifies climate change.” [4]

Climate is not stable. It has no ideal state which everyone could or even should consider as right. As shown in the following chapters, meteorological factors on the planet Earth have always been changing. The world has gone through times of relative higher temperatures, such as so called Holocene maximum, but also suffered from several ice ages. Long before men drove cars, burned oil, or even walked, the climate had been changing. So why is there so much concern about climate change nowadays?

As Scott explains, the climate change may be due to natural forcing and also due to human endeavor. „Some external influences, such as changes in solar radiation and volcanism, occur naturally and contribute to the total natural variability of the climate system. Other external changes, such as the change in composition of the atmosphere that began with the industrial revolution, are the result of human activity.“ [5] The answer lies in his words. In the following chapters all known influences of climate will be investigated and such forcing will be analyzed. The work will try to find out if and how can be climate possibly changed by humans. It is one of the very goals of this diploma thesis to examine the evidence for, or against it and to come up with appropriate results, based on facts and logical deduction. This cannot be done without considering various opinions, research of data but sometimes (unfortunately) even

[3] Palutikof, J. P.: 2008: *Climate Change and Water*. *Technical Paper of the Intergovernmental Panel on Climate Change*. IPCC Secretariat, Geneva, p. 169, ISBN: 978-92-9169-123-4

[4] Solomon, S.: *Climate Change 2007 - The Physical Science Basis*, Contribution of Working Group I to the Fourth Assessment Report of the IPCC, Cambridge University Press, 2007, ISBN 978-0521-70596-7

[5] Scott, P.: *Understanding and Attributing Climate Change, IPCC - Working Group I Report "The Physical Science Basis" 2007*, Cambridge University Press, ISBN 978-0-521-88009-1

beliefs. Firstly, processes in the atmosphere as well as some basic facts will be explained. Even thought I consider myself being rather a student of economy, my research has to deal with other fields of study. Still, my assumptions at the end will consider economic point of view at mentioned topics.

3.2 Global alarm

Al Gore in his movie and book equally called "An Inconvenient Truth" points out that there is no doubt that the Earth's climate is changing. He also stresses that this is a scientifically proven fact and that global warming is caused by humans. Furthermore, Mr. Gore unambiguously claims that anthropogenic warming [6] is behind such things as hurricane Katrina and many other storms. He is so sure of the current state of climate being wrong, that he even points out following: "In pre-industrial world, just the right amount of the sun's energy was soaked up by greenhouse gases in the atmosphere. It was a wonderfully balanced system." [7]

Message of Mr. Gore is clear: There is a huge problem we need to solve. But it's not only him who calls for immediate action before it's too late. European Commission in its brochure "EU Action against climate change" [8] seeks a comprehensive global agreement to combat the climate change after 2012 as the international community's last chance to prevent the climate change from reaching dangerous levels.

Yet, journalists and environmental activists as e.g. Mark Lynas comes up with even more disastrous scenarios: "… (if we let temperature rise by more than 2 °C) The planet would be in the throes of a mass extinction of natural life approaching in magnitude that at the end of the Cretaceous period, 65m years ago, when more than half of global

[6] Anthropogenic warming = warming of the Earth caused by human activities

[7] Gore A.: *An Inconvenient Truth*. London, Bloomsbury Publishing, 2007, ISBN 978-0-7475-9096-5

[8] European Commission: *EU Action Agains Climate Change*. Luxembourg, Office for Official Publications of the European Communities, 2008, ISBN 978-92-79-08725-7

biodiversity was wiped out." [9] And similar theories find a strong back up in temperature predictions e.g. the one from Michael E. Mann, author of the '*hockey stick*' graph of 1998, predicting heavy temperature rise in the near future as a cause of human activities.

Such views are not rare. There are many scientists, politicians, statesmen, activists and others who share very similar point of view. However, is there truly a problem which humankind needs to solve otherwise we face apocalyptic consequences? Or, are we just meant to belive it? Why is there so much fear? Shall anything be changed to prevent any disaster? And, what do other scientists say? Let's move step-by-step to understand the background of this problem.

[9] Lynas M.: *High Tide*. London, Harper Perennial, 2005, ISBN: 0-00-713940-3

3.3 Greenhouse effect

The main cause of the fear related to the anthropogenic global warming lies in so called '*greenhouse effect*'. It is the process which preserves the Earth warm. Simply said, greenhouse gases such as CO2, N2O, CH4, freons, ozone and water vapour effectively trap heat in the lower atmosphere and re-radiate downward some of that heat. Greenhouse gases are essential to maintaining the current temperature of the Earth, since without them, the temperature might drop down by 33 °C [10] and most probably would make the life as we know impossible. Therefore, the core principle of the effect is actually important and vital to our way of life on this planet.

"Earth's atmosphere is composed of about 78% nitrogen, 21% oxygen, and 0.93% argon. The remainder, less than 0.1%, contains many small but important trace gases, including all greenhouse gases (water vapor, carbon dioxide, and ozone)". [11]

Greenhouse gases such mentioned above represent maximum of 0,1% of the Earth's atmosphere. Water vapor (H_2O) is the most abundant greenhouse gas, followed by carbon dioxide (CO_2) and other direct greenhouse gases including, methane (CH_4), nitrous oxide (N_2O), perfluorocarbons (PFCs), Hydrofluorocarbons (HFCs), sulphur hexafluoride (SF_6) as well as the indrect greenhouse gases such as SO_2, NOx and CO, according to UNFCCC. [12]

The most important greenhouse gases are water vapour and carbon dioxide as shown in the figure 1.

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[10] Decline by 33 °C according to Lomborg B.: *Skepticky ekolog*. Decline by more than 34 °C according to *National Climatic Data Center* FAQ [online]. Last update 20th August 2008 [cit. 2009-02-12]. <http://www.ncdc.noaa.gov/oa/climate/globalwarming.html>.

[11] Science Encyclopedia. *Atmospheric Composition* [online]. c2009, [cit. 2009-01-05]. <http://science.jrank.org/pages/590/Atmosphere-Composition-Structure.html>; The term „Trace gas" refers to a gas or gases which make up less than 1% by volume of the earth's atmosphere.

[12] United Nations Framework Convention on Climate Change. *GHG data* [online]. Last update 12th January 2009 [cit. 2009-01-12]. <http://unfccc.int/ghg_data/ghg_data_unfccc/items/4146.php>.

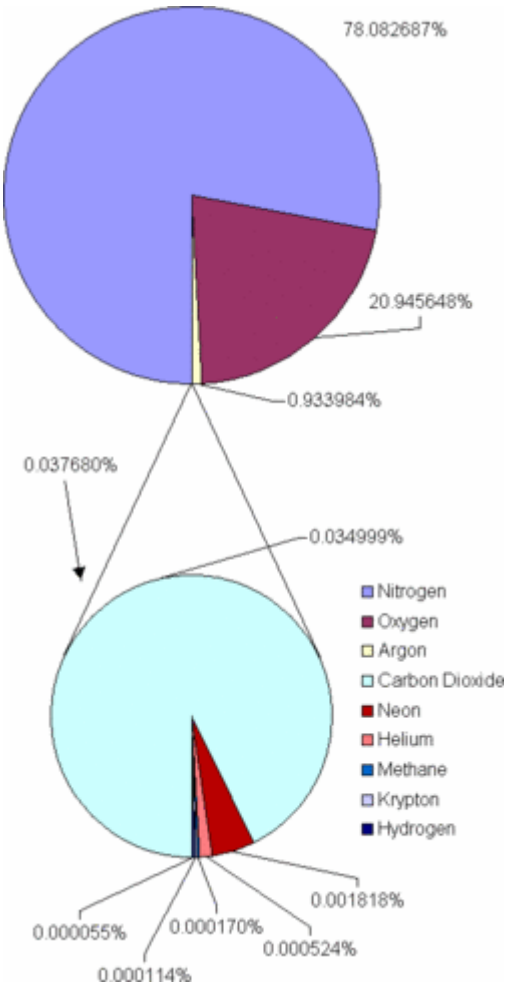

Figure 1. Composition of Earth's atmosphere. The lower pie represents the least common gases that compose 0.038% of the atmosphere. Values normalized for illustration.

Source: CampusNotes: Composition of Earth's Atmosphere [online]. Last Update 31st January 2006 [cit. 2008-11-13]. <http://www.temp.campusnotes.net/images/thumb/6/68/Atmosphere_gas_proportions.gif/250px-Atmosphere_gas_proportions.gif>.

Increase of the amount of greenhouse gases in the atmosphere may, according to many people, lead to the global warming, therefore to the global climate change. Since the early 90's more pressure is put every year to find the effect of human behavior on the nature, especially on the climate. Development, expansion of technologies, increase in world population… The world is changing in many ways, very fast for many of us. Such a fast progress makes people ask questions. One of the most relevant questions, given the topic of this work, is following: "Is the climate changing? Is men responsible for such change? Is there a global warming? Is men responsible for such warming?"

There are many views on this topic even among scientists, therefore finding the truth might be very complicated. Forthcoming pages present various opinions, works and pieces of evidence.

3.4 The problem of men?

There are two main opinion groups which do not share similar point of view at global warming issue. One side (let's call this group „*supporters*") might be well represented by following statement. „We really can't claim anymore that it's natural variations that are driving these very large (climatic) changes." These words of Peter Stott [13] can serve us as an example of a group of people, trying to convince the others that we are responsible for a great danger to the Earth. There is a strong backup from several environmental agencies such as International Panel on Climate Change (IPCC) or United States Environmental Protection Agency (USEPA): „ Scientists are certain that human activities are changing the composition of the atmosphere, and that increasing the concentration of greenhouse gases will change the planet's climate." [14]

USEPA further explains on its web page under the heading of ‚science': „For over the past 200 years, the burning of fossil fuels, such as coal and oil, and deforestation have caused the concentrations of heat-trapping greenhouse gases to increase significantly in our atmosphere. These gases prevent heat from escaping to space, somewhat like the glass panels of a greenhouse." While USEPA's explanation might seem a bit vague, IPCC [see chapter below] presents following: "While many factors continue to influence climate, scientists have determined that human activities have become a dominant force, and are responsible for most of the warming observed over the past 50

[13] Stott, Peter. *Polar warming caused by humans* [online]. c2009, last update 30th October 2008 [cit. 2008-12-26]. <http://news.bbc.co.uk/2/hi/science/nature/7700387.stm>.

[14] United States Environmental Protection Agency, *Basic information* [online]. Last update 18th February 2009 [cit. 2009-02-19]. <http://www.epa.gov/climatechange/basicinfo.html>.

years. Human-caused climate change has resulted primarily from changes in the amounts of greenhouse gases in the atmosphere.“ [15]

Since two major greenhouse gases are CO_2 and water vapor, while the second is not mentioned by IPCC, the problem lies in increased production of carbon dioxide and its increased proportion in the atmosphere. Also United Nations Framework Convention on Climate Change (UNFCCC) identifies the problem of global warming as increased emissions of greenhouse gases into the atmosphere, which affects global temperature rise.

Second group of authors and scientists (let’s call them „*skeptics*“) do not share the opinion on disastrous consequences without dramatic change in human behavior, take imperfect computer models less seriously, argue that CO_2 is not a primary cause of global warming (CO_2 has the representation of 0,035% in the atmosphere - in weight percent) [16], warn of costly governmental arrangements with little environmental effect, focus on natural forcing such as solar irradiance, volcanic activity, or ocean multi-decadal changes. More important, *skeptics* do not acknowledge the correlation between CO_2 and temperature as presented by the *supporters*, and point out that Earth’s climate is too complicated to blame just greenhouse effect responsible for global climate change.

Many skeptics oppose the modern environmental legislation, put stress on the preservation of individual liberties, call for less ‘green propaganda’ and careful analysis of scientific evidence, promote correct calculations of climate change costs and earnings, and request open dialog among scientists, economists, environmentalists and politicians to better understand all aspects of climate change.

These groups of people (*skeptics* and *supporters*) are in the direct contrast with each other. This work takes both groups seriously and is going to analyze the problem from broad overview. Still, this paper is to retain its critical character.

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[15] Solomon, S.: *Climate Change 2007 - The Physical Science Basis*, Contribution of Working Group I to the Fourth Assessment Report of the IPCC, Cambridge University Press, 2007, ISBN 978-0521-70596-7

[16] Wojtal, S.: *Chemical Composition of the Atmosphere* [online]. Last update 26th February 2003 [cit. 2009-03-15]. <http://www.oberlin.edu/faculty/swojtal/SFWpage/161Stuff/161Lect10/sld008.htm>.

4. IS THE WORLD GETTING WARMER?

4.1 Data

"When dealing with the latest hysterical claims about global warming, it's essential to keep in mind a fundamental principle of science: Theories must be testable. A scientific theory describes a predicted outcome and one or more means by which the theory can be tested." [17] In other words, we must be able to test our hypotheses and bring the evidence as James M. Taylor points out. In this chapter, current temperature trend will be observed and also long term temperature reconstruction will be analyzed.

According to the data from IPCC Climate Change 2007: Synthesis Report, [18] there certainly is an evidence of surface temperature rise. Figure 2 shows increase in the surface temperature and global average sea level over last 150 years. The report points out following: "Eleven of the last twelve years (1995-2006) rank among the twelve warmest years in the instrumental record of global surface temperature, since 1850."

[17] Taylor, J. M.: *Facts Leave Global Warming Proponents Out In The Cold* [online]. Last update 29th January 2009 [cit. 2009-03-11]. <http://www.heartland.org/policybot/results.html?articleid=24630>.

[18] Intergovernmental Panel on Climate Change: *Climate Change 2007: Synthesis Report. Summary for Policymakers*. Valencia, IPCC, 2007

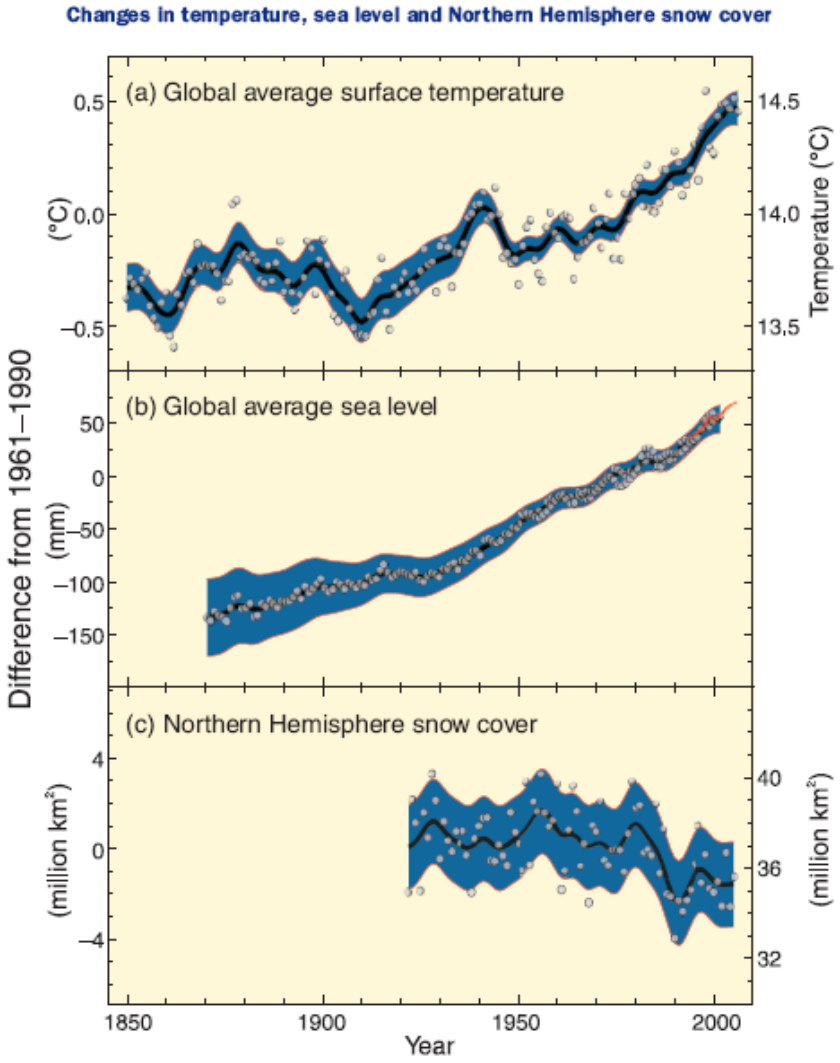

figure 2. Changes in teperature, sea level and Northern hemisphere snow cover.

Source: Intergovernmental Panel on Climate Change. *Understanding and Attributing Climate Change, IPCC - Working Group I Report "The Physical Science Basis"* 2007, Cambridge University Press, ISBN 978-0-521-88009-1

„The world has warmed by an average of 0.76° Celsius since pre-industrial times and the temperature rise is accelerating“, according to the 2007 Fourth Assessment Report from the Intergovernmental Panel on Climate Change (IPCC). [19] Similar quotes may, however, lead to misunderstandings. First of all, as said previously, the climate is

[19] Intergovernmental Panel on Climate Change: *Climate Change 2007: Synthesis Report. Summary for Policymakers.* Valencia, IPCC, 2007

always changing and because temperature is a part of the climate, consequently it will also change. In order to blame human activities for rising temperatures, increased warming trend should be found. But there is no such evidence. Surprisingly, the current rate has actually slowed down. Figure 3 represents global temperature measurements for the last 8 years according to the Science and Public Policy Institute. Although the record is too short to represent long-term trend, it contradicts with predictions made by IPCC.

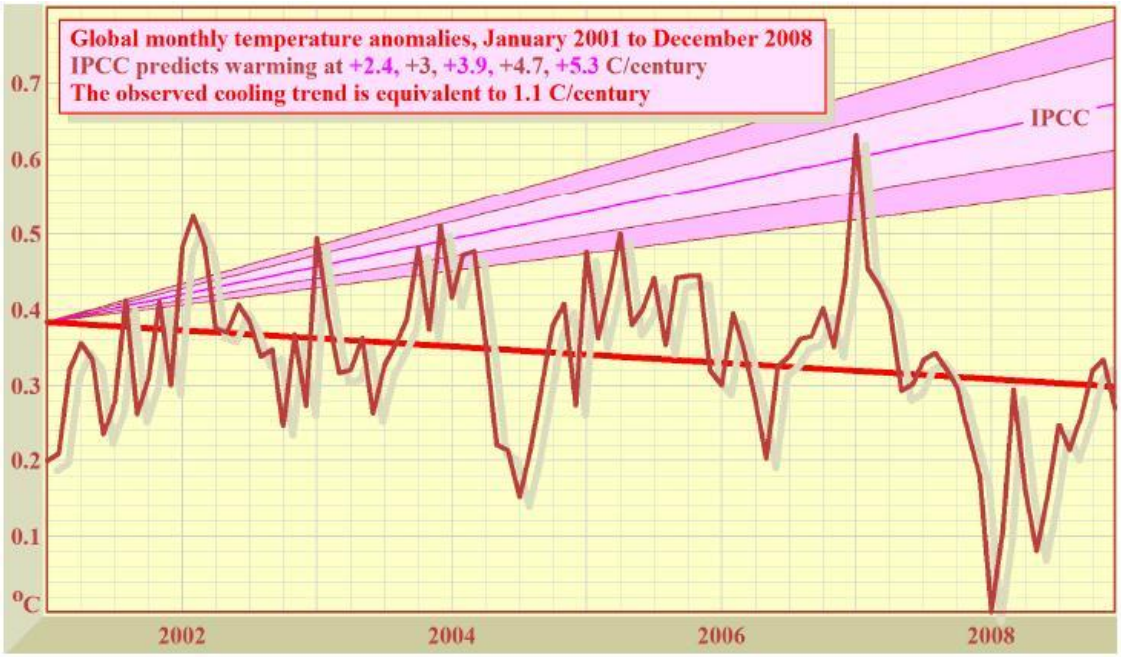

figure 3. Global montly temperature anomalies from 2001 to 2008. Data in respect of the average from 1961-1990.

Source: D'Aleo, J.: *SPPI Monthly CO_2 Report* [online]. c2007, last update 3rd February 2009 [cit. 2009-03-21]. <http://scienceandpublicpolicy.org/images/stories/papers/originals/jan_co2_report.pdf>.

As confirmed by IPCC, the temperature rise in the last 100 years accounts for about 0,7 °C but according to given data, there is no acceleration. There is certainly no acceleration as IPCC models expected, in fact, none of the models expected any cooling trend.

The data used to monitor global temperatures today can be usually count as reliable. However, modern thermometers were accurately measuring temperatures since 1856, but not before. We have relatively short record that we can rely on. It doesn't mean that there is no information of previous state, however. Historical temperature reconstruction can be evaluated while using the *proxy data* - data that paleo-climatologists gather from natural recorders of climate variability, e.g., tree rings, ice cores, fossil pollen, ocean sediments, coral and historical data. [20]

Based on the data from the Vostok ice core [21] proxy data, SEED [22] was able to reconstruct a global temperature time serie for the past 425,000 years. „This temperature record was computed from analysis of ice cores taken at Vostok, a Russian research base in Antarctica, starting in 1970. The deepest core reached 3,623 m into the ice sheet. The ice at the bottom has been undisturbed for about half a million years. During this time there have been four ice ages."

[20] National Climatic Data Center. *A Paleo Perspective on Global Warming*. Proxy Data [online]. Last update 20th August 2008 [cit. 2009-02-24]. <http://www.ncdc.noaa.gov/paleo/globalwarming/proxydata.html>.

[21] National Climatic Data Center. *Ice Core Gateway*. Vostok Ice Core Data [online]. Last update 20th August 2008 [cit. 2009-03-14]. <http://www.ncdc.noaa.gov/paleo/icecore/antarctica/vostok/vostok_data.html>.

[22] Schlumberger Excellence in Educational Development. *Proxy Date Provides Clues* [online]. c2009, last update 28th February 2009 [cit. 2009-03-02]. <http://www.seed.slb.com/subcontent.aspx?id=2316&terms=vostok>

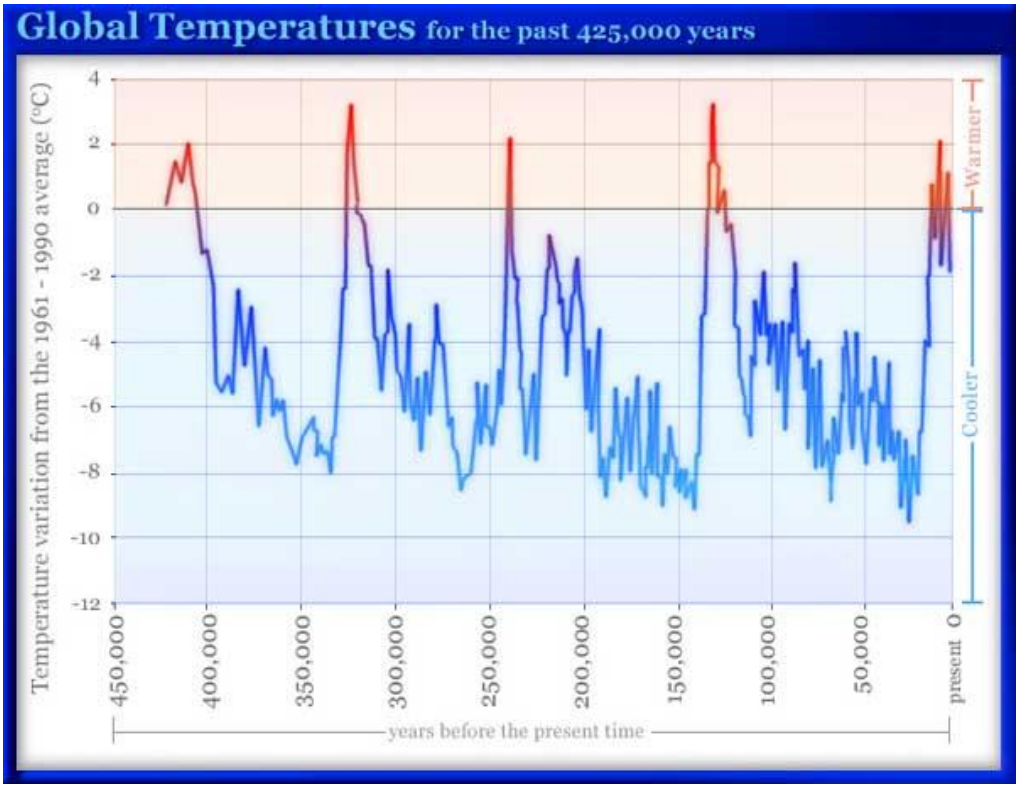

figure 4. Global temperature variation for the past 425,000 years. The present is at the right. The horizontal 0 line represents the 1961–990 average global temperature. The numbers on the left show the variation from that baseline in °C. The data were derived from an analysis of ice cores taken at the Vostok station in Antarctica.

Source: Schlumberger Excellence in Educational Development. Global Temperatures [online]. c2009, last update 28th February 2009 [cit. 2009-03-02]. <http://www.seed.slb.com/subcontent.aspx?id=2316&terms=vostok>

Present day temperatures may be, by many, seen as extremely high and even unprecedented in the Earth's history. The opposite is the truth, however. Vostok ice core measurements illustrate at least 4 periods warmer than today, obviously due to natural forcing. In fact, even IPCC acknowledges following: "Much warmer times have also occurred in climate history - during most of the past 500 million years, Earth was probably completely free of ice sheets (geologists can tell from the marks ice leaves on rock), unlike today, when Greenland and Antarctica are ice-covered. Data on greenhouse gas abundances going back beyond a million years, that is, beyond the reach of Antarctic ice cores, are still rather uncertain, but analysis of geological samples suggests that the warm ice-free periods coincide with high atmospheric CO_2 levels. On

million-year time scales, CO_2 levels change due to tectonic activity, which affects the rates of CO_2 exchange of ocean and atmosphere with the solid Earth." [23] We may experience the highest temperatures in the last 1300 years, but we are certainly not part of the warmest period in the Earth's history.

4.2 Causes of change

Most disputes are held over the emissions of carbon dioxide into the atmosphere, mainly because of human activities such as burning of fossil fuels. It is certain that CO_2 concentrations have risen over the last century and it is obvious that man is responsible for some of the increase. IPCC says: "Global GHG emissions due to human activities have grown since pre-industrial times, with an increase of 70% between 1970 and 2004," [24] as shown in figure 5.

Some authors strongly believe that increased amount of CO_2 is causing the temperature rise. Al Gore, during his lectures about global warming, presents convincing long-term graph as an evidence of CO_2 affecting the temperature. Both CO_2 and temperature records perfectly match each other in the time line of hundreds of thousands years of the Earths history. Nevertheless, is it that simple?

Among many, who criticize Gore's easy-to-understand enterprise, physicist Lubos Motl summarizes observed: „It is not just CO_2 but other gases such as methane that follow the temperature. The hypothesis of CO_2 as the primary reason wouldn't explain why these other gases are correlated, too. Also, we understand how oceans react to temperature changes by releasing gases. Finally, the gas concentrations lag behind

[23] Solomon, S.: *Climate Change 2007 - The Physical Science Basis*, Contribution of Working Group I to the Fourth Assessment Report of the IPCC, Cambridge University Press, 2007, ISBN 978-0521-70596-7

[24] Intergovernmental Panel on Climate Change: *Climate Change 2007: Synthesis Report. Summary for Policymakers*. Valencia, IPCC, 2007

the temperature by 800 years.“ [25] Therefore, Al Gore’s theory of CO_2 driving global warming might have some serious flaws.

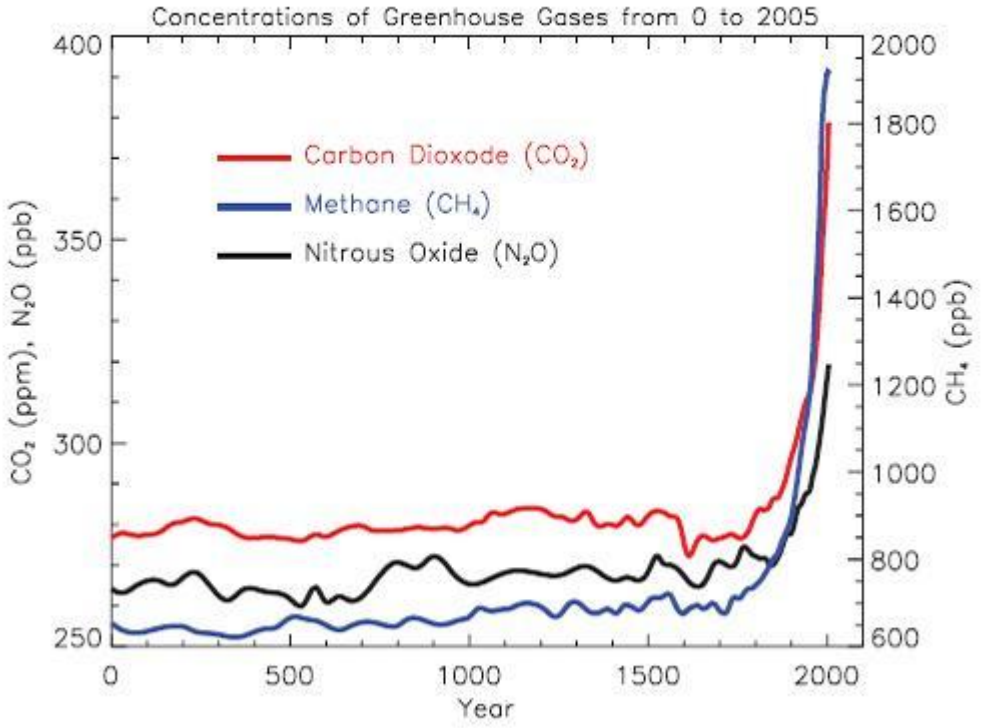

figure 5. Concentrations of Greenhouse Gases from the year 0 to 2005.

Source: IPCC, 2007: Climate change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Solomon, S.; Qin, D.; Manning, M.; Chen, Z.; Marquis, M.; Averyt, K. B.; Tignor, M.; Miller, H. L.). Cambridge University Press, Cambridge, United Kingdom and New York, NY, U. S. A.

Nonetheless, IPCC and UNFCCC also recognize carbon dioxide as a major driver of global warming. Withouth such ‚consensus‘ Kyoto protocol could not exist. IPCC report stresses following: „The largest known contribution comes from the burning of fossil fuels, which releases carbon dioxide gas to the atmosphere. Greenhouse gases and aerosols affect climate by altering incoming solar radiation and outgoing infrared

[25] Motl, L.: *CO_2 vs temperature: ice core correlation & lag* [online]. Last update 6th July 2006 [cit. 2009-03-21]. <http://motls.blogspot.com/2006/07/carbon-dioxide-and-temperatures-ice.html>.

(thermal) radiation that are part of Earth's energy balance." [26] So does increase of CO_2 in the atmosphere lead to the global climate change? Could current carbon dioxide levels be dangerous to the climate? The problem lies within the dispute over the consequences of increased CO_2 levels.

In Previous chapter was shown that temperature levels have been slightly increasing for the last 150 years. Carbon dioxide levels, however, are increasing by much higher rate and unlike the temperature, which repeatedly fluctuates, CO_2 rise is constant. *Skeptics* point out that carbon dioxide cannot explain the lack of warming in the eighties and nineties, nor any of the abrupt warming that followed, nor the stasis of the twenty first century high, nor the temperature downturn that followed in 2007 and bottomed out in 2008. Kurc adds: "Increase of carbon dioxide concentration in the atmosphere is marginal from the global warming point of view."[27] But also many other scientists are very skeptical. Lansner [28] in his independent study confirms findings of Motl about gas concentrations lag behind the temperature. Moreover, he proves CO_2 is neither the only, nor major climate change factor. Monckton adds: „Even if carbon dioxide were chiefly responsible for the warming that ceased in 1998 and may not resume until 2015, the distinctive, projected fingerprint of anthropogenic ‚*greenhouse-gas*' warming is entirely absent from the observed record." [29]

Measurements of Hadley and MSU satellite as shown in the figure 6 do not correlate with a record of CO_2 for the same period. Annual increase in amount in the atmosphere is on the rise while temperature anomalies are not supporting the main thesis of the global warming.

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26 IPCC, *2007: Climate change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Solomon, S.; Qin, D.; Manning, M.; Chen, Z.; Marquis, M.; Averyt, K. B.; Tignor, M.; Miller, H. L.). Cambridge University Press, Cambridge, United Kingdom and New York, NY, U. S. A., ISBN 978-0-521-88009-1

27 Kurc, L.: *Skleníkový efekt – nepříjemné pravdy.* Praha, Centrum pro Ekonomiku a Politiku, newsletter July 2007, p. 6-7

28 Lansner, F.: CO_2, *Temperatures and Ice Ages* [online], c2007 [cit. 2009-03-22]. <http://icecap.us/index.php/go/in-the-news/co2_temperatures_and_ice_ages/>

29 Monckton, Ch.: *Climate Sensitivity Recosidered*. Detroit, Physics and Society, Vol. 37, No. 3, July 2008, p. 6-18

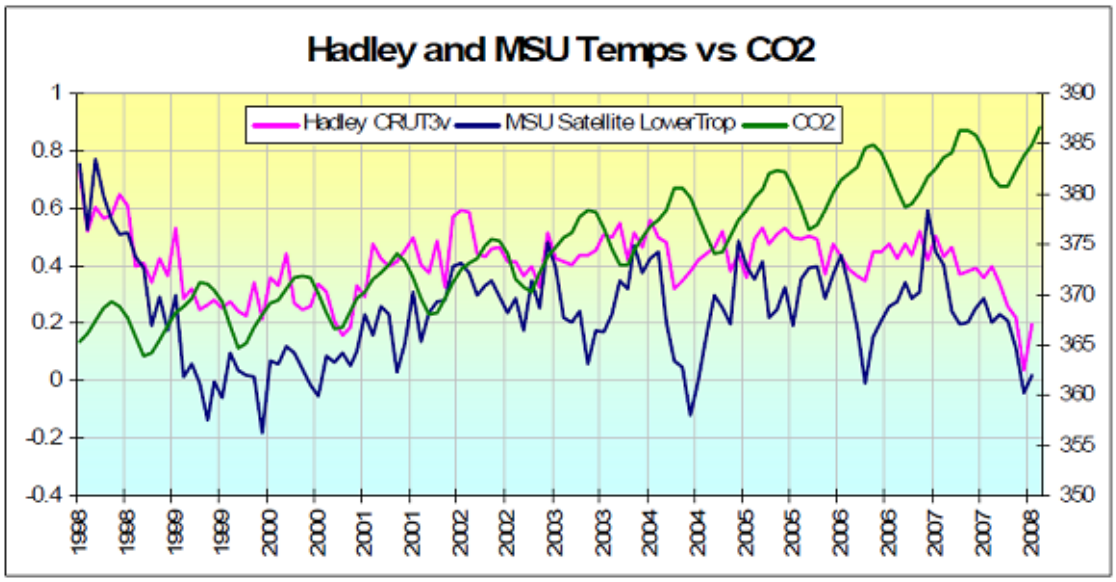

figure 6. Temperatures anomalies in °C adjusted to 1961-1990 global average and CO_2 values in ppb. Measurements by Hadley and MSU satellite and Mauna Loa station.

Source: ICECAP [online]. c2007 [cit. 2009-02-12]. <www.icecap.us>

Even though overall trend would be hard to find on 10 years time scale, presented graph opposes two major arguments of global warming *supporters*. First of all, the temperature on the Earth (lower troposphere and surface) is changing, but no evidence of recent dramatic warming, rather the opposite. Secondly, CO_2 record in recent decades does not match with the temperature record and many studies consider the mutual correlation unlike.

If one looks at the temperature reconstruction data for the last 150 years, there truly is a slight trend in the warming of the Earth, however only in it's lower part – near to the surface. As shown in the Appendix II., the average temperature in the troposphere has been decreasing in the last 50 years.

5. NATURAL FORCING

Supporters of global warming often blame CO_2 as a major factor causing temperatures rise. IPCC points out: "Since the start of the industrial era (about 1750), the overall effect of human activities on climate has been a warming influence. The human impact on climate during this era greatly exceeds that due to known changes in natural processes, such as solar changes and volcanic eruptions." [30] However, many scientists do not agree with this statement, claiming climatic system being far more complex than currently presented. Many believe the global changes are rather driven by natural factors such as solar irradiation, volcanic activity, ocean multi-decadal changes and urban heat island effect.

5.1 The Sun

The sun is one of the most important sources of energy for the Earth. It also plays a role in our climate, since direct solar irradiance may have far reaching effect on the temperatures on the Earth. "The sun changes in its activity on time scales that vary from 27 days to 11, 22, 80, 180 years and more," according to Joseph D'Aleo. [31] Taking to account sun's eruptional activity and irradiance, some studies demonstrate correlation between these solar activities and the Earth's temperature. The figure 7 is based on the World Data Center for Paleoclimatology and measures the total solar irradiance in the past 400 years. Some scientists estimated that changes in solar luminosity can account for 52% of the change in the temperatures from 1910 to 1960 (Lockwood and Stamper), others as Pierrs Corbyn even predict weather changes according to the sun.

[30] Intergovernmental Panel on Climate Change: *Climate Change 2007: Synthesis Report. Summary for Policymakers*. Valencia, IPCC, 2007

[31] D'Aleo, J.: *Temperature Cycles in North America, Greenland and the Arctic, Relationship to Multidecadal Ocean Cycles and Solar Trends* [online]. [cit. 2009-02-25]. Available at <http://icecap.us/images/uploads/Supplement_Oceans_and_Sun_and_temps_US,_Greenland,_arctic.pdf>.

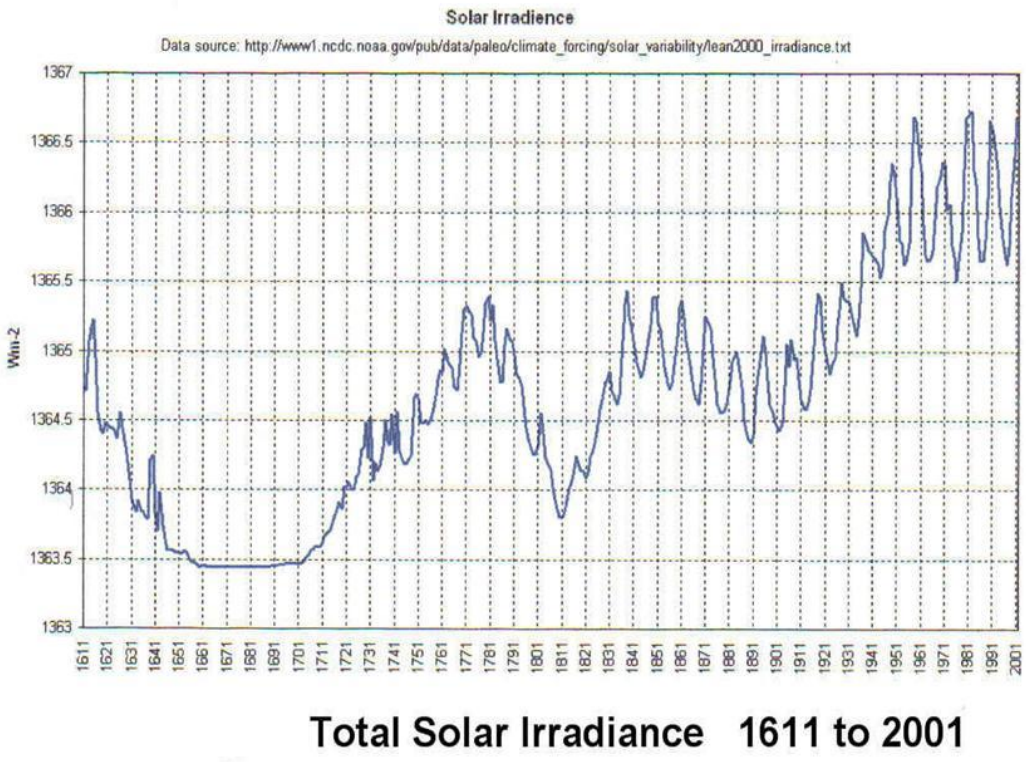

figure 7. Global Solar Irradiance Reconstrucion by Lean, J. 2004. World Data Center for Paleoclimatology

Source: Lean J.: *Global Solar Irradiance Reconstrucion* [online]. Last update 1st July 2004 [cit. 2009-01-12]. <http://www1.ncdc.noaa.gov/pub/data/paleo/climate_forcing/solar_variability/lean2000_irradiance.txt>.

The figure 8 represents implied temperature record data and total sun irradiance graph in the Arctic region. Strong correlation is shown and stressed by many scientists. Although it's believed the sun is not the only factor, according to the studies it might be more important than anthropogenic CO_2.

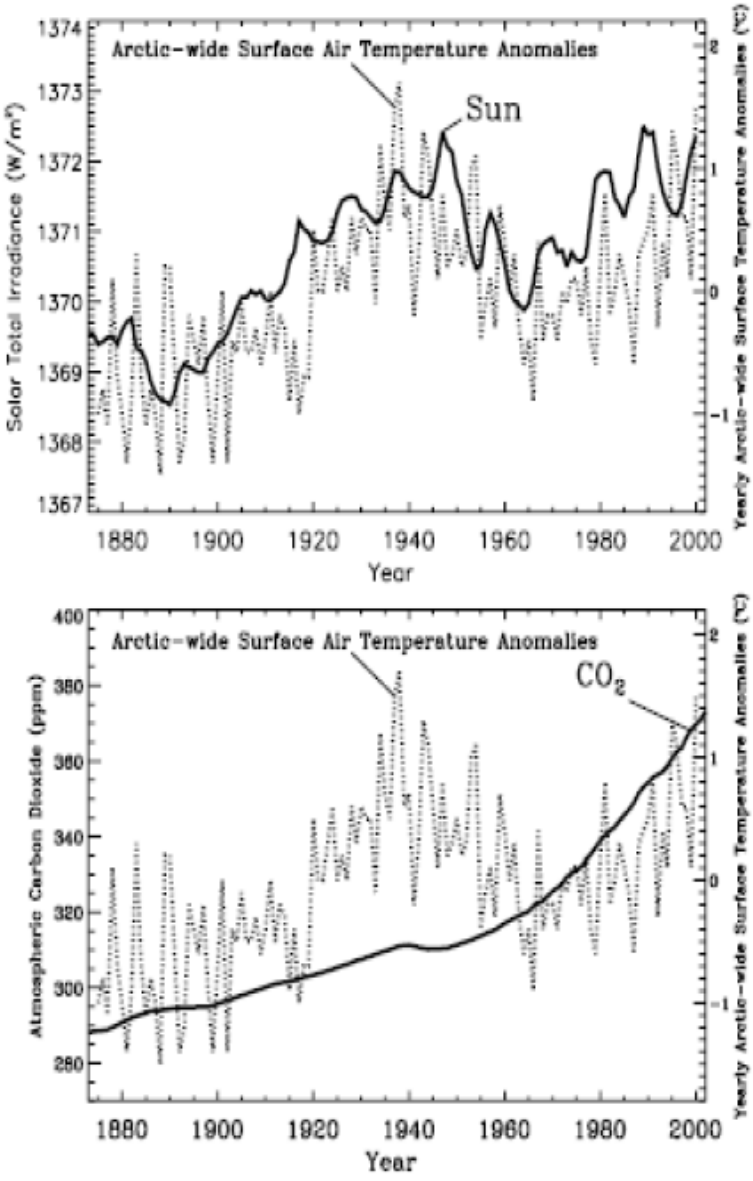

figure 8. Total solar irradiance in comparison with yearly Arctic-wide surface temperature anomalies and antrophogenic CO_2 levels.

Source: Taylor, G.: *Temperature Cycles in North America, Greenland and the Arctic, Relationship to Multidecadal Ocean Cycles and Solar Trends* [online]. c2007 [cit. 2009-03-14]. <http://icecap.us/images/uploads/Supplement_Oceans_and_Sun_and_temps_US,_Greenland,_arctic.pdf>

"Though the sun's brightness or irradiance changes only slightly with the solar cycles, the indirect effects of enhanced solar activity including warming of the atmosphere in low and mid latitudes by ozone reactions due to increased ultraviolet radiation, in higher latitudes by geomagnetic activity and generally by increased radiative forcing due to less clouds caused by cosmic ray reduction may greatly magnify the total solar effect on temperatures." [32]

5.2 Volcanoes

Volcanic activity may also be an important player while talking about climate change. With a half-dozen and more volcanoes being active at any given moment around the globe, some studies are in favor of interesting correlation between the temperature and volcanic activity.

Sulfur dioxide quickly gets converted to sulfate aerosols which can reside for two or more years in the stable high atmosphere. These then block some of the incoming solar radiation. This leads to a global cooling, therefore increased volcanic activity may actually decrease temperatures.

Matthew Collins of Centre for Global Atmospheric Modeling points out: "Because of their cooling effect on global temperatures, volcanic eruptions have the potential to temporarily halt the global warming signal coming (principally) from the continuing increase in greenhouse gases from anthropogenic sources." [33]

[32] D'Aleo, J.: *Temperature Cycles in North America, Greenland and the Arctic, Relationship to Multidecadal Ocean Cycles and Solar Trends* [online]. [cit. 2009-02-25]. Available at <http://icecap.us/images/uploads/Supplement_Oceans_and_Sun_and_temps_US,_Greenland,_arctic.pdf>

[33] Collins, M.: *Predictions of Climate following Volcanic Eruptions* [online]. [cit. 2009-03-02]. Available at <http://www.met.rdg.ac.uk/~mat/vol.pdf>.

5.3 Ocean Multi-Decadal Changes

Oceanography and internal oceanic processes are very complex and difficult subjects to study. In this part of the work certain important factors will be mentioned.

One of such factors is the circulation which can be defined and better understood by short term and decadal scale oscillations of the oceans (Pacific and Atlantic). In the IPCC chapter 3, as noted by Joseph D'Aleo [34], Pacific Decadal Oscillation (PDO) is recognized as likely to be due to oceanic processes. Annual Atlantic Multi-decadal oscillation is presented by figure 9.

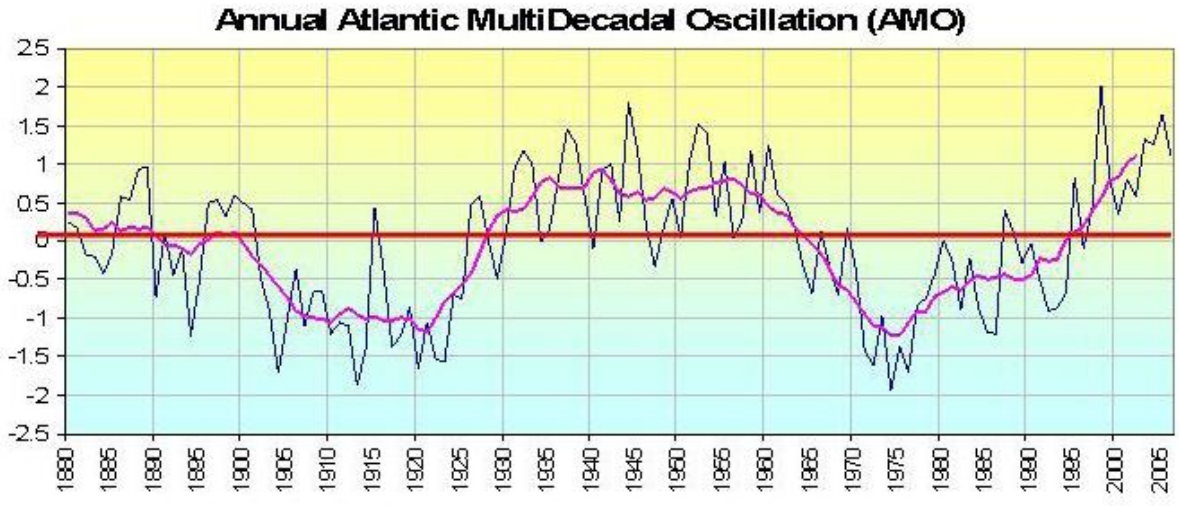

figure 9. Annual Atlantic Multi-Decadal Oscillation. Axis X represents temperature variations, axis Y represents observed timescale.

Source: D'Aleo, J.: *Ocean Multi-Decadal Changes and Temperatures*, ICECAP [online]. c2007 [cit. 2009-02-27]. <http://icecap.us/docs/change/OceanMultidecadalCyclesTemps.pdf>

[34] D'Aleo, J.: *Ocean Multi-Decadal Changes and Temperatures*, ICECAP [online]. c2007 [cit. 2009-02-27]. <http://icecap.us/docs/change/OceanMultidecadalCyclesTemps.pdf>

In fact, some studies as the one by Andrew C. Revkin [[35]], are trying to warn of Arctic ice retreat due to increased warming of waters. In forthcoming chapters Arctic region will be studied and analyzed. Yet, partial correlation between ocean oscillation and ice cover can be observed.

Studies divide the Pacific Decadal Oscillation into cold and warm period, or PDO cold mode and PDO warm mode. Wolter [[36]] comes up with an evidence that PDO is connected with El Niño, La Niña phenomenon, which is linked to ground warming and cooling, respectively. In the figure 10 mentioned phenomenon is shown, red waves represent El Niño's warming effect while blue stand for La Niña cooling.

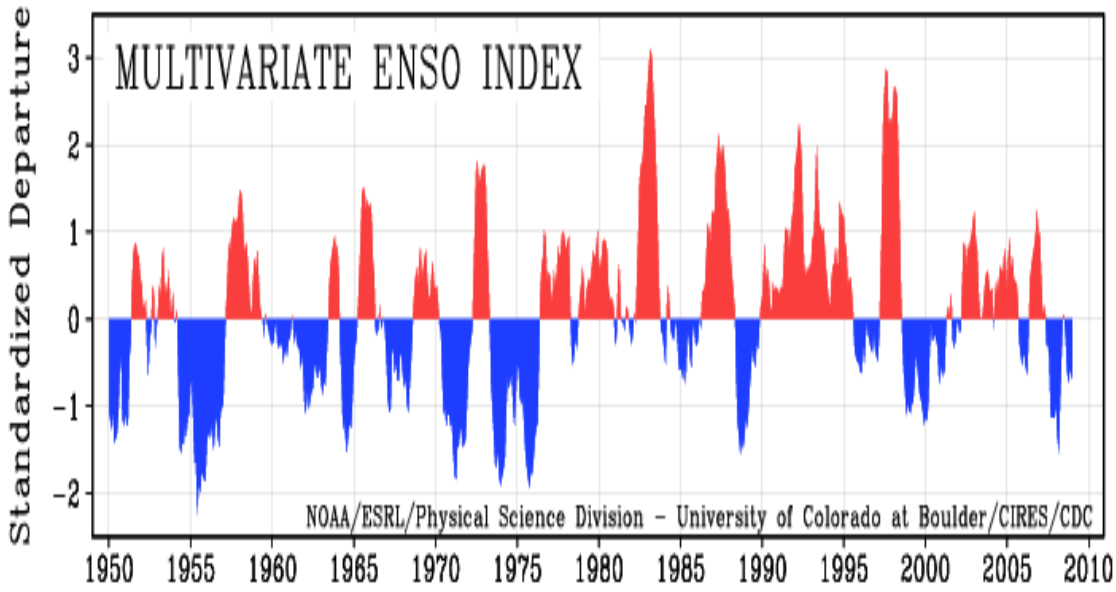

figure 10. El Niño, La Niña phenomenon

Source: D'Aleo, J.: *SPPI Monthly CO_2 Report* [online]. c2007, last update 3rd February 2009 [cit. 2009-03-21]. <http://scienceandpublicpolicy.org/images/stories/papers/originals/jan_co2_report.pdf>.

[35] Revkin, A. C.: *Warming Waters Driving Arctic Ice Retreat*. New York Times [online]. c2009, last update 6th September 2008 [cit. 2008-12-21]. <http://dotearth.blogs.nytimes.com/2008/09/06/warming-waters-driving-arctic-ice-retreat/?scp=1&sq=ice%20cover%20melting&st=cse>

[36] Wolter, K.: *Multivariate ENSO Index*, NOAA [online]. Last update 3rd March 2009 [cit. 2009-03-11]. <http://www.cdc.noaa.gov/people/klaus.wolter/MEI/>

El Niños are nothing new and exceptional, in fact there are not a result of anthropogenic warming either. "Clear evidence exists from a variety of sources that El Niños have been present for thousands, and some indicators suggest maybe millions, of years." [37] This is to contradict with Al Gore's findings, according which recent anthropogenic warming is behind increased extreme weather events as hurricanes and heavy storms driven by El Niño/La Niña.

5.4 Urban Heat Island

Some would say that urban development and its influence on the temperature rise should not be considered as a 'natural forcing'. But let's accept humans are part of the nature instead of qualify them as an artificial pollutant. People may influence the climate partly by greenhouse gases emissions, partly by the depletion of ozone layer, but one of the reasons why temperatures in the last 150 years were rather increasing is very simple. There are many of us. Since 1900's the world's population has more than quadrupled which has undoubtedly led to certain impacts on the climate. Some of the impacts were already mentioned in previous chapters, namely CO_2. Increased emissions are often explained by fossil fuel burning, but every person is actually a potent creator of this so called 'pollutant'. Our lungs create about 240 kg of CO_2 yearly per 70 kg person. This number is still incomparable to industrial emissions but adding methane and CO_2 produced by stock and other animals (necessary to feed people) certainly play an advanced role.

More importantly, increased population in the cities is a significant indicator of warming. This is due to so-called *'urban heat island'* (UHI) effect which is not considered by many major forecasts, nor studies. The principle lies in increased warmth in the urban areas where vertical walls, steel and concrete absorb the sun's heat and are slow to cool at night. As more of the world is urbanized, the effect becomes more

[37] National Environmental Satellite, Data, and Information Services: *Global Warming*. FAQ [online]. Last update 20th August 2008 [cit. 2008-11-17]. <http://www.ncdc.noaa.gov/oa/climate/globalwarming.html#q4>

significant. Temperature measurements often ignore adjustments due to UHI, making the data less reliable.

Another problem connected with the temperature measurement is '*siting*' [38] of measuring stations. All around the world thousands of machines are installed in order to provide accurate data. As cities grow around the stations, more heat is produced, which affects gathered data. Accordingly, studies show higher rate of temperature increase in urban areas over rural. Project called '*Surface Stations*' [39] examined over 800 thermometers in the United States and found only 11% meeting the requirements of error within 1 °C. The rest is far likely to bring corrupted measurements due to the artificial heating sources near installed thermometers. More importantly, mentioned data is collected by the National Climatic Data Center and NASA Goddard Institute of Space Flight and used for further modeling.

[38] Placement

[39] Watts, A.: *Surveyed Site Quality Rating*. [online]. c2007, last update 8th February 2009 [cit. 2009-03-25]. <http://surfacestations.org/>.

6. FORECASTING

In the era of extensive media power, great news sells and bad one even more… Every once in a while a message of the catastrophic warning rolls in major media channels predicting future collapse. Often we are warn of water or food shortage, oil reserves reaching dangerous limits, rising sea levels, deadly global warming etc. But forecasting and prophecies are something that fascinates mankind since our first steps on the Earth.

There are many reasons why majority of predictions are incorrect, one is the lack of information. But even well informed and well educated may overestimate their abilities. "In the 1972 publication *The Limits to Growth*, the Club of Rome told us the world was running out of resources and predicted catastrophe within decades. In an era of excessive consumption this imagined drought of raw materials gripped the public imagination, even though no one knew with any degree of certainty what volume of resources lay hidden in the earth. Subsequent geological exploration has revealed just how wide of the mark our estimates of mineral resources were back then, and even today no one can accurately predict the volume of oil, gold and other materials beneath our feet." [40]

In early 80's people were afraid of forthcoming ice age because of the temperature decline. Today, fear just shifted from cold to warmth. But even some environmental organizations use the tactic of terrifying predictions especially to gather media attention. Avery points out: "Since the 1980s Greenpeace has predicted the world would lose a million or so species because of global warming, yet the warming has caused no wild species extinctions." [41] Another example of poor judgment is Mr. Mann's hockey stick graph, which was used by IPCC in their third assessment report of 2001. This action has

[40] Flannery T.: The *Weather Makers*. London, Penguin Books Ltd, 2005, ISBN 978-0-141-02627-5

[41] Avery, T. D.: *Greenpeace: A Long History of Poor Judgment*. Heartland Institute [online]. Last update 3rd January 2008 [cit. 2009-02-08].
<http://www.heartland.org/policybot/results/22794/Greenpeace_A_Long_History_of_Poor_Judgment.html>

lately been viewed as a fatal error not only because IPCC simply accepted Mann's theory without any doubt, but also because temperature record of following years (up until now) did not show any sign of the catastrophic heat. In other words, Mr. Mann was completely wrong in his predictions. It doesn't mean we should completely ignore all forecasts and stop thinking ahead, but maybe we should take the futuretelling works as they are, uncertain. We should also critically observe such predictions, especially if connected to global issues.

IPCC in its Summary for policymakers warns us of impacts associated with global warming. According to their computing, six scenarios of global surface temperature rise are available. All of the six possibilities are so called non-mitigation scenarios, which means they are forecasting the future with unchanged variables over time. In other words, if nothing is done to prevent it. Scenarios forecast the temperature by 2090-2099 and calculate warming relative to 1980-1999. The worst scenario counts with warming of 4° C in average, while the most moderate estimates increase by 1.8° C.

Their prediction is based on very complex computer models which should ensure increased accuracy. There are voices, however, calling the IPCC forecasts overestimating and rather pessimistic. Some critics, as Dr. Theon, former senior NASA atmospheric scientist, describes his view as following: "Models do not realistically simulate the climate system because there are many very important sub-grid scale processes that the models either replicate poorly or completely omit." [42] Some studies even accuse the forecasts of lacking a scientific basis and the models useless.

One of the problems of mentioned model is that calculation is based on today's technology, does not count with further human development, not even with ability to adapt. Therefore computer models and other forms of forecast should be taken as an advisement, not a doctrine. As shown in the chapter 4, even predictions of IPCC are imperfect.

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[42] Theon, S. J. *United States Senate Committee on Environment & Public Works*. Blog [online]. Last update 27th January 2009 [cit. 2009-03-24]. <http://epw.senate.gov/public/index.cfm?FuseAction=Minority.Blogs&ContentRecord_id=1a5e6e32-802a-23ad-40ed-ecd53cd3d320>

7. ICE COVER AND THE CLIMATE CHANGE

7.1 Southern hemisphere

Tim Flannery in his book „The Weather Makers“, stresses out following: „It’s Antarctica that provides the most alarming news of melting ice.“ [43] In order to present a catastrophic situation in Earth’s southern hemisphere, he’s chosen an event known as Larsen B ice-shelf disintegration. A very similar point is made by Al Gore in his book „An Inconvenient Truth“, blaming water warming for the ice loss and using it as an evidence for anthropogenic climate change.

The problem of the view represented by Mr. Gore, Mr. Flannery and others is in their narrow focus and maybe even in their alarming efforts. It is true that area of nearly the size of the Luxemburg fell apart from the Antarctic ice sheet in February 2002. Many scientists were shocked by this event, because it came accidentally, happened fast and without any previous signs. Environmental activists and green NGOs were on high alert, many blaming governments for doing too little to stop the climate change, such as Dr Lara Hansen climate scientist for World Wildlife Fund: “This is consistent with the effects and predictions of global warming. The visibility and sheer scale of what is happening in Antarctica should provide a wake-up call to policymakers worldwide." [44] But in order to blame global warming, closer look is necessary.

Larsen B ice-shelf disintegration might have been a media blockbuster as well as another support for governmental pro-active legislation, but argument of water warming was only partly true. Flannery explains that since 1972 the average temperature in Weddell’s sea had warmed by 0,32°C, and this change was enough to initiate the melting, causing dramatic loss of ice cover. This may be true in respect of Larsen B

[43] Flannery T.: The *Weather Makers*. London, Penguin Books Ltd, 2005, ISBN: 978-0-141-02627-5

[44] World Wildlife Fund: *Antarctic Ice Shelf Loss Warns Against Inaction on Global Warming* [online]. c2009 [cit. 2009-02-05]. <http://www.worldwildlife.org/who/media/press/2002/WWFPresitem10737.html>

collapse, but is certainly not applicable to Antarctica as a whole. Figure 11 shows the evidence of increasing ice extent in southern hemisphere. The data was acquired from National Snow and Ice Data Center in early 2009. It is evident that while alarmists carefully select an event which supports their theory, overall trend might be exactly the opposite as in this case. Such approach has nothing to do with scientific research and at the end it's demoted to the level of simple information. Flannery deliberately informs only about warming in Weddell's see, which is a very small part around Antarctic while Hansen alarming with no true reason.

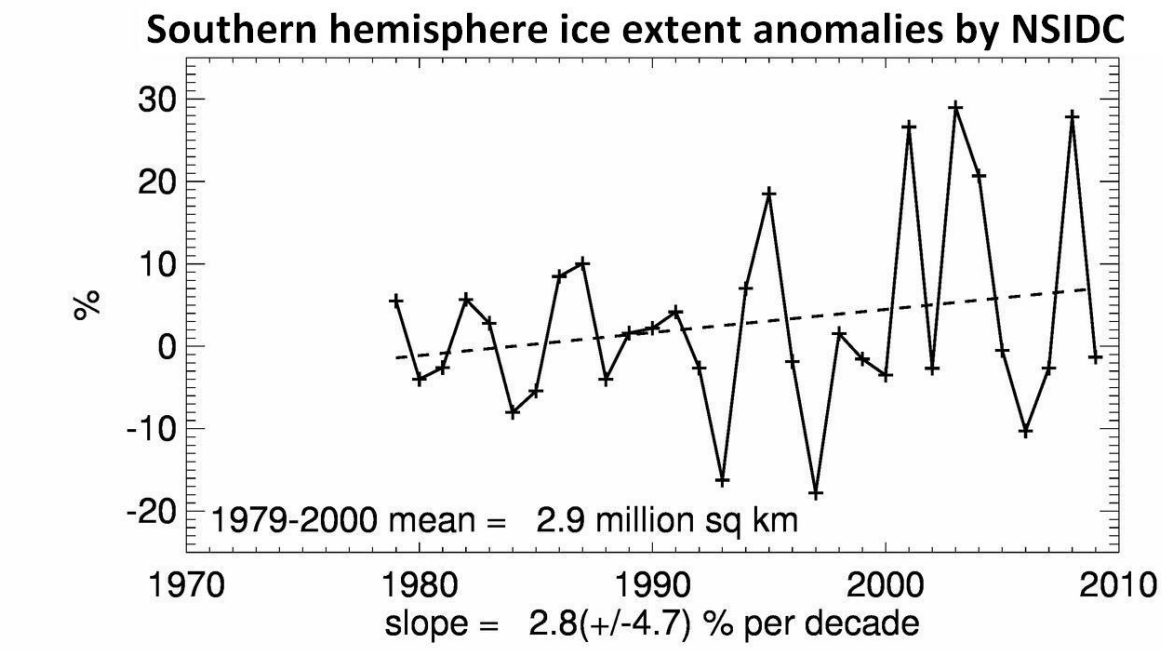

figure 11. Southern hemisphere ice extent anomalies from 1979 to 2009.

Source: NSIDC: Souther Hemisphere Ice Extent Anomalies [online]. Last update 21st December 2006 [cit. 2009-03-11]. <http://nsidc.org/data/seaice_index/images/s_plot_hires.png>.

While at certain parts of Antarctica [such as Weddell's sea] warming tendency can be measured, opposite is true for other areas of the continent. As Nigel Lawson points out: „This area [where warming can be measured] only represents 10% of Antarctic ice cover and has different climate then the rest of icy continent. The majority representing

90% of the territory indicates ice content increase.“ [45] Similar point was made by many scientists and also journalists as Christopher Booker: „...the Antarctic Peninsula - the only part that has been warming. The vast mass of Antarctica, all satellite evidence has shown, has been getting colder over the past 30 years. Last year's sea-ice cover was 30 per cent above average.“ [46]

7.2 Northern hemisphere

Unlike Antarctica, where the evidence of increased overall ice extent in last 30 years is clear and proven, area of Earth’s North Pole known as Arctic region is much controversial issue. First of all, we should look at the past in order to compare current data. Statement of National Snow and Ice Data Center can give us an idea of the history: „We know for sure that at least in the distant past, the Arctic was ice-free. Fossils from the age of the dinosaurs, 65 million years ago, indicate a temperate climate with ferns and other lush vegetation.“ [47]

The term Arctic stands for a vast area around the Earth’s North Pole including Arctic Ocean and parts of Canada, Finland, Greenland, Iceland, Norway, Russia, Sweden and the United States. This chapter, however, will focus mainly on Greenland – territory of Denmark with important data trends relevant to this research, and also part of Northern hemisphere which enjoys great interest by scientists and climatologists. Partly, it is due to the phenomena of global warming.

Al Gore’s evidence for human-made global warming includes remark of worsening situation there: „In Greenland, just as in the Antarctic Peninsula, scientists now know

[45] Lawson N.: *Vraťme se k rozumu*. Praha, Dokořán, 2009, ISBN 978-80-7363-242-7

[46] Booker, Ch.: *Despite the hot air, the Antarctic is not warming up*. Daily Telegraph [online]. c2009, last update 1st February 2009 [cit. 2009-02-29]. <http://www.telegraph.co.uk/comment/4332784/Despite-the-hot-air-the-Antarctic-is-not-warming-up.html>.

[47] NSIDC – National Snow and Ice Data Center. *Arctic Sea Ice News & Analysis* [online], Last update 21st December 2006 [cit. 2009-02-27]. <http://nsidc.org/arcticseaicenews/faq.html#antarctic>.

the meltwater is sinking to the bottom and cutting deep crevasses and tunnels, called moulins, which can make the ice mass much less stable and might cause it to slide more quickly toward the ocean. There has always been some seasonal melting in Greenland, and moulins have formed in the past, but in the recent years, the melting has been happening faster, and all year round.“ [48]

What Mr. Gore found was neither unusual, nor disturbing. His yet another presentation of a terrible disaster meets scientific evidence only partly. His efforts are to show people increased ice melting which will lead to sea level rise.

In 1998, Curt H. Davis and his team presented satellite measurements for Greenland ice sheet. [49] They found interesting variations in respect of Greenland ice cover. According to their research: ”…ice sheet (south of 72°N latitude) with surface elevations above 2000 meters actually increased at an average rate of 1 centimeter per year from 1978 to 1988.” On contrary, decrease in the ice cover was reported for lower elevation areas.

Very similar conclusion presented Krabill [50] few years later while using very different method of data reconstruction. While admitting that decrease of ice in coastal lower areas may contribute towards rising sea levels, he also finds that higher altitudes rather increase in size.

Dahl-Jensen compiled an extensive temperature reconstruction of Greenland over the last 8000 years (ka). [51] In the figure 12 there is a record of two measuring stations (boreholes), Greenland Ice Core Project (GRIP) located at the summit of the island’s ice sheet, and Dye 3 located 865 kilometers south.

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[48] Gore A.: *An Inconvenient Truth*. London, Bloomsbury Publishing, 2007, ISBN 978-0-7475-9096-5

[49] Davis H. C.: *Elevation Change of the Southern Greenland Ice Sheet*. Science, vol. 279, 1998, p. 2086-2088, ISSN 0036-8075

[50] Krabill W.: *Greenland Ice Sheet: High-Elevation Balance and Peripheral Thinning*, Science, vol. 289, 2000, p. 428-430, ISSN 0036-8075

[51] Dahl-Jensen D.: *Past Temperature Directly from the Greenland Ice Sheet*. Science, vol. 282, 1998, p. 268-271, ISSN 0036-8075

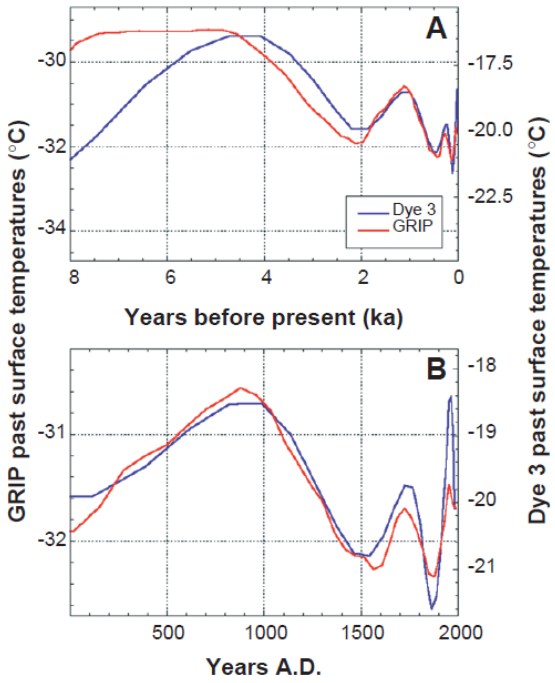

figure 12. Reconstructed temperature histories for two measuring projects GRIP and DYE3 over the last 8000 years on the territory of Greenland. Science, http://www.gfy.ku.dk/~klaus/papers/B7-Science1998.pdf, 3rd March 2009.

From the data received from the boreholes in the ice, Dahl-Jensen found following: "The Dye 3 record is nearly identical with the Greenland Ice Core Project (GRIP) record back to 7 ka, but the amplitudes are 50% higher. Thus, the resolved climate changes have taken place on a regional scale; many are seen throughout the Northern Hemisphere. Surface temperatures at the summit are influenced by maritime air coming in from the North Atlantic and air masses arriving from over northeastern Canada. Temperatures at Dye 3 will be influenced to a greater degree by the North Atlantic maritime air masses. Dye 3 is located closer to the center of the highest atmospheric variability, which is associated with large inter-seasonal, inter-annual, and decadal temperature changes. It is therefore believed that the observed difference in amplitudes

between the two sites is a result of their different geographic location in relation to the variability of atmospheric circulation, even on the time scale of a millennium." [52]

Although recent studies show the ice content decrease in Greenland and Arctic region, the overall trend may not be linked to the global warming. "A team of NASA and some university scientists has detected an ongoing reversal in Arctic Ocean circulation triggered by atmospheric circulation changes that vary on decade-long time scales. The results suggest not all the large changes seen in Arctic climate in recent years are the result of long-term trends associated with global warming." [53]

In fact, the pattern of circulation can be found in the most recent Greenland temperature reconstruction by NASA. Temperatures in Greenland have been rather increasing during couple of last years, still figure 13 by Science and Public Policy shows „cooling from the 1940s to the late 1990s even as greenhouse gases rose steadily, a negative correlation over almost 5 decades."

[52] Dahl-Jensen D.: *Past Temperature Directly from the Greenland Ice Sheet*. Science, vol. 282, 1998, p. 268-271, ISSN 0036-8075

[53] NASA: *NASA Sees Arctic Ocean Circulation Do an About-Face* [online]. [cit. 2008-12-27]. <http://www.jpl.nasa.gov/news/news.cfm?release=2007-131>

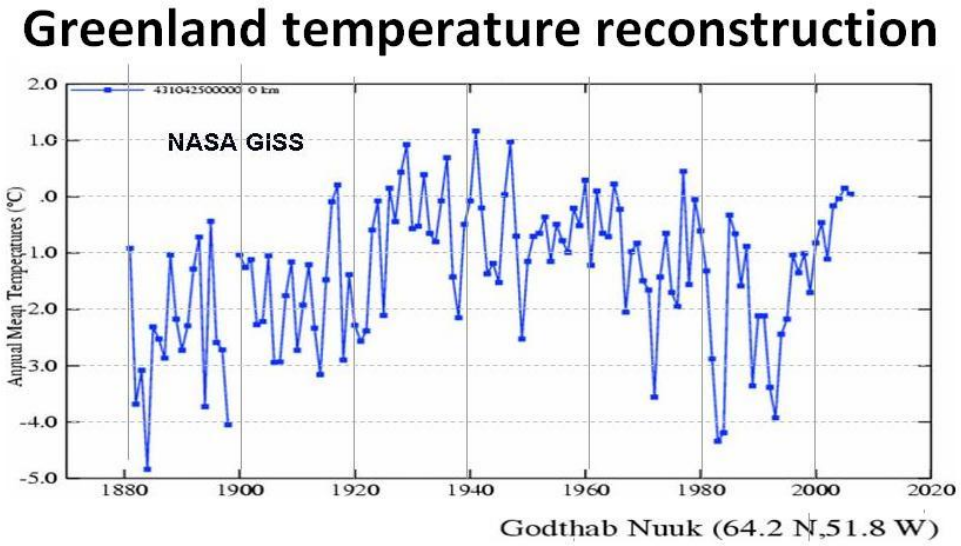

figure 13. The temperature plot for Godthab Nuuk in southwest Greenland. The rise after the middle 1990s was due to the flip of the annual multidecadal oscilation into its warm phase. They have not reached the level of the 1930s and 1940s. 1941 being the warmest year on record.

Source: Science and Public Policy: *Greenland temperature reconstruction* [online]. Last update 29th July 2008 [cit. 2009-03-03].
<http://scienceandpublicpolicy.org/images/stories/papers/scarewatch/scarewatch_nyt_sea_level_rise.pdf>

While some parts of the world are losing glaciers and ice caps, others are gaining, such as Alaskan glaciers in Glacier Bay National Park [[54]], where the growth of ice for the first time in 250 years was reported recently. In fact, Northern hemisphere hit snow cover record in 2001.

7.3 Green-land

Important point is that even if Greenland had no ice, it would be nothing new for the Earth. Analysis of the word *Greenland* itself would be a good start for some. As Evan Pugh, professor of geosciences, Penn State remarks: "Greenland (ice sheet) even

[54] Asher, M.: *Alaskan Glaciers Grow for First Time in 250 years*. Daily Tech, blog [online]. c2009, last update 16th October 2008 [cit. 2008-12-28].
<http://www.dailytech.com/Alaskan+Glaciers+Grow+for+First+Time+in+250+years/article13215.htm>

disappeared completely when the temperatures became warm enough." [55] As shown previously, there were times of higher temperatures on the Earth then today's record.

One of very convincing argument used by many *supporters* is a story of animal extinction of the North Pole due to the anthropogenic global warming. Especially moving is a message delivered by Danielle Murray of Earth Policy Institute: "Perhaps in the future, children will look back on the fabled polar bears of the icy North Pole the way we imagine woolly mammoths in the last Ice Age." [56]

Interestingly enough, polar bear (Ursus maritimus) as a specie has been inhabitant of the Earth for over 100.000 years. While the Ursinae subfamily originated approximately 4.2 million years ago. During this time, the Earth has gone through severe change of conditions, from higher to lower temperatures. This would be the proof of polar bear's great adaptability, making concerns of extinction due to the global climate change doubtful. Additionally, Bjorn Lomborg in his lecture informs that while climate change may possibly cause just several deaths of polar bear per year, ban on hunting would save about 200 a year.

[55] Pugh, E.: *Greenland and Antarctic ice sheet melting, rate unknown* [online]. c2009, last update 16th February 2009 [cit. 2009-03-18]. <http://www.eurekalert.org/pub_releases/2009-02/ps-gaa020409.php>.

[56] Murray, D.: *Ice Melting Everywhere*. Earth Policy Institute [online]. c2005 [cit. 2009-03-11]. <http://www.earth-policy.org/Indicators/Ice/2005.htm>.

8. RISING SEA LEVELS DUE TO DEADLY WARMING?

„Increased ice melting will cause a huge sea levels rise, oceans would flood coasts, causing a terrible damage, cities like New York being submerged as well as tropical islands. All of this generally redraw the world's atlases." Such statements are presented by media on daily basis. Sometimes it seems that disaster is unavoidable if nothing is done quickly. Environmental activists, green parties, global warming alarmists, powered by international work of organizations as IPCC, are calling for more a more legislation regulating our development, in fact our freedom, using a simple argument. "We must change our behavior to stop a disaster." There way of "protecting" environment, however, does not imply respect to individual freedom, does not imply correct calculation of costs and revenues, and does not imply actions taken on basis of scientific evidence.

We've already mentioned ice melting in the previous chapters and found that besides carefully selected blockbuster stories by alarmists, global rate is very stable and in some parts ice extent is even increasing. Krabill already in 2000 wrote: "Consequently, if present day thinning is attributable to warmer temperatures, thinning must have been even higher earlier this century, with total near coastal thinning of 100 m or more along most of the coast." [57] Eight years later, we have found global temperatures rather decreasing. So how is it with the oceans? Should we be scared of extensive floods in coastal areas?

"Sea level has risen in the last 100 years by 10-25 centimeters and there it's presumed that in the next 100 years there will be rise of 31-49 centimeters. About ¾ of this rise will be due to warming of the water, therefore increasing in size, and only ¼ will be a consequence of ice melting." [58] This calculation of Lomborg is in contrast with IPCC projections. But historical overview doesn't even show increased sea level change in the

[57] Krabill W.: *Greenland Ice Sheet: High-Elevation Balance and Peripheral Thinning*, Science, vol. 289, 2000, p. 428-430, ISSN 0036-8075

[58] Lomborg, B.: *Skeptický ekolog*. Praha, Dokořán, 2006, ISBN: 80-7363-059-1

recent decades. Holgate says: “The rate of sea level change was found to be larger in the early part of last century (2.03 ± 0.35 mm/yr 1904–1953), in comparison with the latter part (1.45 ± 0.34 mm/yr 1954–2003).” [59] According to Bjorn Lomborgs lectures, over 150 years the sea level rose by 1 foot.

As seen, there are two major problems for global alarmists. Firstly, rising of sea levels is very moderate and has been rather declining in the recent decades. And secondly, there is no such a thing as an aggressive global warming as we are being told from media, IPCC and others. “The highest summer temperatures were measured in the 1930s, followed by a steady decline until the early 1970s and a slow increase since. The 1980s and early 1990s were about half a degree cooler than the 96-year mean.” [60]

[59] Holgate, S. J.: *On the decadal rates of sea level change during the twentieth century*. GRL [online]. c2009, last update 5th January 2007 [cit. 2009-03-02]. <http://www.agu.org/pubs/crossref/2007/2006GL028492.shtml>

[60] Krabill W.: *Greenland Ice Sheet: High-Elevation Balance and Peripheral Thinning*, Science, vol. 289, 2000, p. 428-430, ISSN 0036-8075

9. BIOFUELS: BURNING FOOD TO POWER AN ENGINE

In effort to protect the environment, governments of the most developed countries subsidize biofuels. But firstly, what biofuel really is? There are three major groups according to the composition and origin, based on information from Consumer Energy Council of America.

1. Ethanol can be made from any starch- or sugar-based feedstock. Corn is the most common feedstock used in the United States, whereas sugar cane is the preferred feedstock in Latin America. Corn-based ethanol production is energy intensive, and in some instances uses nearly as much energy to produce (including the energy needed for farming and making fertilizers) than it supplies.

2. Biodiesel is a combustible fuel that is physically similar to petroleum diesel but made from natural, renewable sources. It can be made from any vegetable oil or animal fat. In the U.S., roughly half of biodiesel production uses soybean oil, and most of the remaining half is recycled from restaurants' cooking oil. The fats and oils are combined with an alcohol

3. Biomass is generally made up of woody plant residue and complex starches. The largest percentage of biomass used to create energy is wood, but other bioproducts, such as fast-growing switchgrass, are being investigated as sources of energy.

"To encourage farmers to grow these crops (used to produce biofuels), the EU agreed six years ago to pay subsidies for up to 2 million hectares of European farmland or €45 (in 2007 prices) per hectare", according to Herald Tribune [61] in 2007 farmers already asked for 2.8 million hectares to subsidize. OECD estimates that in the US alone $7 billion is spent on biofuel subsidies.

[61] Herald Tribune: *EU says biofuel subsidies hit maximum, questions if they are still needed* [online]. c2009, last update 17th October 2007 [cit. 2009-01-23]. <http://www.iht.com/articles/ap/2007/10/17/business/EU-FIN-EU-Biofuel-Subsidies.php>.

There are several major problems with such governmental aid. First of all, according to studies some biofuels are not energy effective, meaning that production and distribution takes more energy than biofuels actually save. Secondly, due to increased production from otherwise '*eatable*' crops, food prices increase, which is already considerable mainly in Asia and Africa, but also in countries like Mexico. Thirdly, increased demand, partially driven by governmental subsidies and quotas, results in massive deforestation in producing countries, causing less natural habitat for animals and destruction of rainforests. Farmers will also tend to produce preferable biofuel crops, instead of dedicating their farmland to cheaper food crops.

"Government support of biofuel production in OECD countries is costly, has a limited impact on reducing greenhouse gases and improving energy security, and has a significant impact on world crop prices." [62] Mentioned statement can be found at OECD official web page.

So why is governmental support of '*green*' energy still on the rise? As Shioshansi points out: "Farmers who receive the generous subsidies love biofuels or agrofuels – and so do politicians who can count on their votes." [63] But the essential reason is far more idealistic. In order to decrease fossil fuel usage biofuels were introduced, however with much higher price of production, they were unable to compete on the market. Western governments (U.S. and E.U. mainly) decided to subsidize biofuels because they believe it's a way towards better environment.

Angel Gurría, OECD Secretary-General, warns: "The objectives pursued are unlikely to be delivered by current biofuels support policies." But while many politicians tend to be soft in their critique of subsidies, McInnes does not bother with political correctness: "Ethanol is a great way for actors in California to feel better about driving their cars, but it makes poor people starve and it increases global warming and it destroys forests and

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[62] OECD: *Growing biofuel demand underpinning higher agriculture prices, says joint OECD-FAO report* [online]. Last update 23rd September 2008 [cit. 2009-03-28]. <http://www.oecd.org/document/25/0,3343,en_2649_33785_39633881_1_1_1_1,00.html>.

[63] Shioshansi, F. P.: *OECD: Biofuels Subsidies not efficient* [online]. Last update 11th October 2008 [cit. 2009-03-12]. <http://www.energypolicyblog.com/?p=66>.

it inflates food prices globally. Only an elitist racist would tell the Third World the best way to power an engine is to burn food." [64] No matter how rough this statement might sound, the idea is unfortunately close to reality. Figure 14 shows how much income people relatively spend on food in certain countries, therefore how much they suffer from higher food prices.

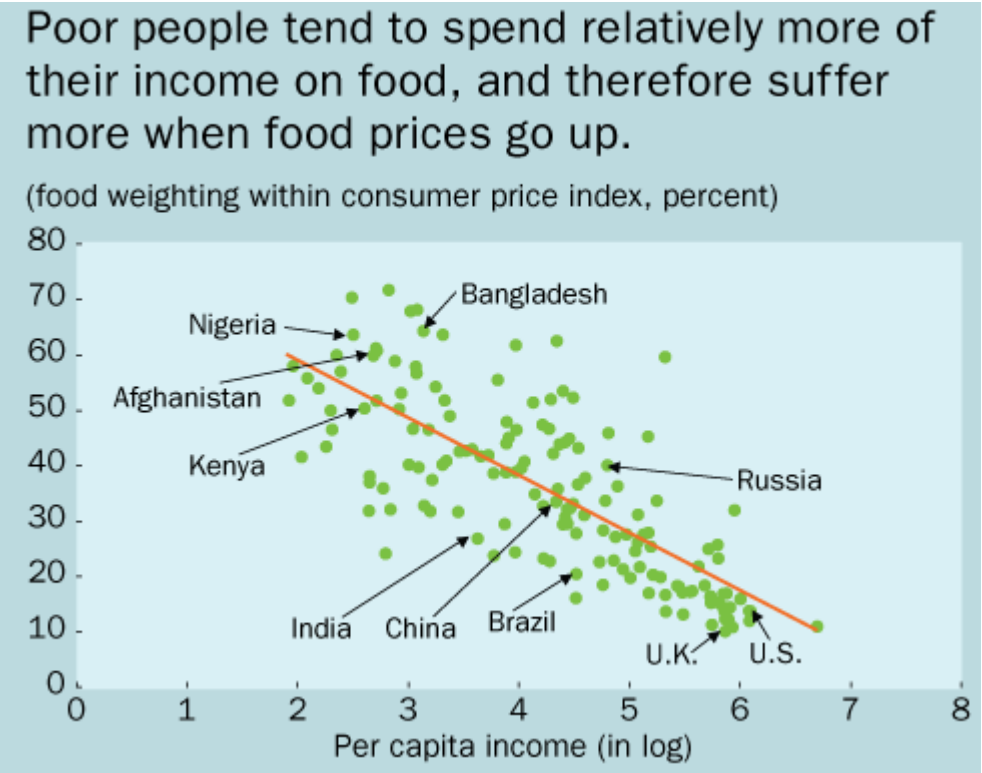

figure 14. Axis X express percentage of income spent for food. Axis Y shows per capita income.

Source: International Monetary Fund calculations (www.imf.org)

Shioshansi adds: "Under an optimistic scenario, biofuels may cut emissions in industrial countries by 3%, if that. But this small reduction comes at an alarming cost – as much as $500 for a tonne of CO2 in the US, according to OECD, and perhaps 10 times higher in Europe. It is money poorly spent, to put it mildly." [65] Current state of biofuel

[64] McInnes G.: *Green Is Murder* / *Death & Taxes Magazine*, November 2008, Liquid Publishing 2008, Miami, FL., ISSN: 1930-3424

[65] Shioshansi, F. P.: *OECD: Biofuels Subsidies not efficient* [online]. Last update 11th October 2008 [cit. 2009-03-12]. <http://www.energypolicyblog.com/?p=66>.

subsidy policy is, as shown, ineffective and causes more harm, rather than generating benefits. Efforts to expand the use of biofuels also create unsustainable tensions that disrupt markets. “Interestingly, while some environmental groups actively promote ethanol and biodiesel production and use, others—often those with an interest in protecting wildlife or its habitat, or who are concerned about food security—view the rapid growth of biofuels with great concern.” [66]

The end of fossil energy

‘’The Stone Age didn’t end for lack of stone, and the oil age will end long before the world runs out of oil.’’

Sheik Ahmed Zaki Yamani Saudi oil minister during the 1970's

[66] Koplow, D.: *Biofuels - At What Cost?* Winnipeg, International Institute for Sustainable Development, 2006, ISBN 1-895536-94-4

10. SCIENTIFIC CONSENSUS

10.1 Kyoto protocol

The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing greenhouse gas (GHG) emissions. These amounts are set to an average of 5% against 1990 levels over the five-year period 2008-2012. So far Kyoto has been signed by 181 countries, not ratified by U.S.A and Kazakhstan.

The main reason why governments signed the agreement was the argument of scientific consensus on CO_2 causing global warming. But it is the core statement which many scientist do not agree and which is not, until today, fully understood. Many claims that human influence on climate is very low and if so, CO_2 and other greenhouse gases are not a major driver. For this and other reasons a petition against Kyoto protocol emerged in the United States. 31,072 American scientists have signed this petition, including 9,021 with PhD degree as shown in the figure 15.

Petition

We urge the United States government to reject the global warming agreement that was written in Kyoto, Japan in December, 1997, and any other similar proposals. The proposed limits on greenhouse gases would harm the environment, hinder the advance of science and technology, and damage the health and welfare of mankind.

There is no convincing scientific evidence that human release of carbon dioxide, methane, or other greenhouse gases is causing or will, in the foreseeable future, cause catastrophic heating of the Earth's atmosphere and disruption of the Earth's climate. Moreover, there is substantial scientific evidence that increases in atmospheric carbon dioxide produce many beneficial effects upon the natural plant and animal environments of the Earth.

Edward Teller
Please sign here

☒ Please send more petition cards for me to distribute.

My academic degree is B.S. ☐ M.S. ☐ Ph.D. ☒ in the field of PHYSICS

figure 15. Source: Oregon Institute of Science and Medicine: *Global Warming Petition Project* [online]. c2008 [cit. 2009-02-23]. <http://www.petitionproject.org>

11. CONCLUSION

Environmental protection was never so important in the history of human kind than it is today. Global efforts towards cleaner environment are both important and noble and are a sign of advanced civilization. They are also a sign of care and willingness to help. Awareness and education play important role and will be even more important in the future.

In the last two centuries humankind made an enormous progress. Today we are wealthier then ever before, world's real GDP per capita is eight times higher than in 1800's [67], illiteracy levels are at the lowest historical rate [68], technological possibilities today are unimaginable by those lived several decades before us, and we also live much longer than our ancestors. [69] This is important to mention, because very often the opposite can be heard from our surroundings. Especially while talking about global environment. It is nothing new because fear is in one sense a driver of human kind, making us cautious, active and unhesitating. On the other hand, predictions based only on fear without proper justification may as well be harmful and can easily cause alarm, while actual evidence is missing. Thirty years ago people were afraid of forthcoming ice age, oil reserves reaching dangerous limits, skyrocketing increase of world's population which cannot be fed. Today we know such worries were underestimating human ability to adapt, to find alternative solutions and to take advantage of technologies. Still, in 2009 we are again being warned of water or food shortage, rising sea levels, unprecedented extreme weather events and most importantly deadly global warming.

Presented work showed some of the worries justified and valid. There certainly has been a global temperature rise over last century. It's also clear that CO_2 concentrations have risen over the last 150 years and it is obvious that man is responsible for some of the increase. On the other hand, there is no direct evidence of man-made global

[67] Lomborg B.: *Skeptický ekolog*. Praha, Dokořán, 2006, ISBN: 80-7363-059-1

[68] UNESCO: *Youth Development Report* [online]. c1995 [cit. 2009-03-19]. <http://unesdoc.unesco.org/images/0013/001346/134670e.pdf>

[69] WHO, *World's life expectancy* [online]. c2009 [cit. 2009-03-21]. <http://www.who.int/topics/ageing/en/>

warming, no evidence of increased rate of sea level rise, no evidence of Antarctic ice loss and most importantly, no increased rate of global warming. In fact, no global warming is currently happening. During the last 8 years of the record, temperatures were rather falling. Such evolvement was not predicted by any model and therefore, it is a sign of yet high degree of unreliability. Our knowledge of climate is obviously insufficient and far worse than presented.

The role of human influence on climate change is a task of scientific discussion, which is, however, far away from final conclusion, as many would appreciate. Solution of potential problems arising from global warming is a subject of economy, on the other hand. As well as solutions of other problems, either local or global, our decisions are limited by the amount of resources and it is a task of economic theory to find most effective allocation and distribution. Investments into the fight against global warming, particularly CO_2 emissions, is from economic point of view rather as ineffective waste.

If we are to fight global warming, we should prioritize importance of problems and choose action steps accordingly. If our actions only postpone what is going to happen anyway, maybe we should focus our scarce resources to a different battlefield. If Kyoto protocol postpones global warming, meaning that farmer in Bangladesh gets flooded 5 years later than without our massive investments to fight CO_2 emissions, we could have chosen a better use of our sources. It is an economic point of view that we need to take into account in order to prevent flawed decisions, driven by hysteria rather than correct calculation. Economic analysis is needed in order to find the best solution, or maybe the less harmful. Still our decision making should be driven by logic, not fear.

Current environmental legislation is in this sense rather contradictive. State intervention in the economy, even under the motto of ‘saving the planet’, leads to market deformations and its effect is costly. As seen on the example of biofuel subsidies, it can even lead to further destruction of the environment, making the essential idea an absurd phrase. The alternative solutions lie within free market approach which not only preserves personal liberties but also is the only assurance of the most effective allocation of resources based on free decisions of individuals. On contrary, current approach of proactive legislation forces each individual to pay high price for the

decisions strongly influenced by lobbying powers, decisions based on reinsurance of future successful election, decision based on unreserved confidence of ‘knowing better’ than everyone else and decision based on incomplete information about given problem. Such short-sight actions are dangerous, shallow and ruthless.

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APPENDIX I.

Václav Klaus

No Progress in the Climate Change Debate

When preparing my today's remarks, I took into my hands – looking for an inspiration – my last year's speech here, at the Heartland Institute's Conference. It did not help much. It is evident that the climate change debate has not made any detectable progress and that the much needed, long overdue exchange of views has not yet started. All we see and hear are uninspiring monologues.

It reminds me of the frustration people like me felt in the communist era. Whatever you said, any convincing and well prepared arguments you used, any relevant data you assembled, no reaction. It all fell into emptiness. Nobody listened, especially "they" did not listen. They didn't even try to argue back. They considered you a naive, uninformed and confused person, an eccentric, a complainer, someone not able to accept their only truth. It is very similar now.

A few weeks ago, at the World Economic Forum in Davos, I spent three hours at a closed session of about sixty people – heads of states and governments with several IPCC officials and "experts" like Al Gore, Tony Blair and Kofi Annan. The session was chaired by the Danish Prime Minister because its main topic was how to prepare the new Kyoto, the December 2009 UN-Copenhagen summit.

It was a discouraging experience. You looked around in vain to find at least one person who would share your views. There was no one. All the participants of the meeting took man-made global warming for granted, were convinced of its dangerous consequences and more or less competed in one special discipline – whether to suggest a 20, 30, 50 or 80% CO_2 emissions cut as an agreed-upon, world-wide project. It was difficult to say anything meaningful and constructive. Among other things I tried to turn their attention to was the argument that they made such radical proposals even though their own countries had not fulfilled even the relatively modest Kyoto Protocol obligations. There was no reaction to that. After the session, one friendly looking president of a relatively large non-European country told me that he had never heard anything like my views, but was interested and wanted to hear more. I gave him my book "Blue Planet in Green Shackles"

Nevertheless, we have to continue speaking to those people because they have a very strong voice in popularizing the global warming alarmism and in making decisions with far-reaching consequences. I try to do it permanently. The politicians are, however, not alone. They succeeded in creating incentives which led to the rise of a very powerful rent-seeking group. Very much like the politicians, these people are interested neither in temperature, CO_2, competing scientific hypotheses and their testing, nor in freedom or markets. They are interested

in their businesses and their profits – made with the help of politicians. These rent-seekers profit:

- from trading the licenses to emit carbon dioxide;

- from constructing unproductive wind, sun and other similar equipments able to make only highly subsidized electric energy;

- from growing non-food crops which produce non-carbon fuels at the expense of producing food (with well-known side effects);

- from doing research, writing and speaking about global warming.

It is always the same story with the same results. On the one hand, a highly concentrated and easily organized rent-seeking group and, on the other, widely dispersed, and therefore politically unorganizable individuals, the usual silent majority. I am frustrated that the economists and other social scientists do not try to enter the current debate. For us, in the former communist countries, the discovery of the works of the public-choice school scholars was a revealing experience. I somewhat naively assumed that their views belonged to the "conventional wisdom" in the Western world. This was not and is not true.

How to educate and enlighten those who make decisions? The politicians – hopefully – sometimes look at the very condensed versions of the IPCC's Summaries for Policymakers but these documents do not represent science, but politics and environmental activism. It is difficult to change their minds. They did fully subscribe to the idea that the IPCC publications represent "the" climate science. We know that is not true and that there is no scientific discipline of climate science. Climate is such a complex system that it has no "science" of its own. There are, of course, very respectable sciences that deal with some parts of it. And they tell us quite persuasively that:

1. there is no one unique, unprecedented climate change just now, but permanent climate changes. The climate system of our planet has a significant internal variability. The past data are in this respect quite convincing;

2. the current climate changes cannot be subsumed under the hypothesis of anthropogenic global warming. This claim is based exclusively on the results of experiments with the very imperfect computer models;

3. the Earth's climate sensitivity to carbon dioxide is lower than is assumed by the IPCC. For a doubling of carbon dioxide concentration the global average surface temperature will increase not more than by about 0,5 °C;

4. there is no fixed and stable relationship between measured temperature and CO_2emissions. The believers in this hypothesis are not able to explain why the global temperature increased from 1918 to 1940, decreased from 1940 to 1976, increased from 1976 to 1998 and decreased from 1998 to the present, irrespective of the fact that the people have been adding increasing amounts of $CO_2$to the atmosphere.

I would be able to continue presenting further arguments of that kind but this is not a field in which I do possess any comparative advantage. Perhaps in Davos, but not here. I am, therefore, looking forward to new ideas, arguments and data coming out of this conference.

Let me make a few short comments from "my" fields.

I am puzzled by the environmentalists' approach to technical progress. On the one hand, there is a huge difference between our technology optimism, based on our belief in secular improvements in technology on condition the free and unregulated, unconstrained, unmanipulated economic system makes them possible, and environmentalists' technology skepticism along traditional Malthusian lines. On the other hand, the environmentalists are, at the same time technology naivists who freely and irresponsibly operate with miraculous technologies which have only one defect: they have not yet been invented. This is an apparent schizophrenia on their side. They should tell us how it really is. I am afraid they are not so naive as they pretend to be. They, probably, "only" do not want to reveal their true plans and ambitions: to stop economic development and return mankind centuries back. In that case technologies are unimportant.

Their attack on today's technologies is an irrational practice with fatal consequences. As far as I know the existing and functioning technologies had never been abandoned before they were genuinely replaced by better ones. There arises – for the first time in history – a threat that the old technologies will be abandoned before new technologies become available. This should also be explained to the politicians in alternative "summaries for policymakers", but they should be written by economists. We should also tell them that there is no known and economically feasible method or technology by which industrial economies can survive on expensive, unreliable, clean, green, renewable energy.

Another issue which bothers me is the exceptional absence of rational thinking as regards intertemporal decision making, especially when time-horizons are so long as in this case. The despotically ruling, politically correct aprioristic moralism (based on the disagreement with the infamous Keynes' dictum "in the long run, we are all dead" or with the not less famous Madame De Pompadour's maxim – "après nousle déluge") is basically flawed. The questions which need to be answered are serious and non-trivial. Should we make radical decisions now? Should we tax today's generations to benefit future generations? Should we be generously altruistic? Should we give preference to future generations and not to the people living in undeveloped countries today? My answer is no. We could have made such far-reaching decisions only on the absolutely unrealisticassumption that we know all relevant parameters of the future economic system, including the level of wealth and technology, and that we know all the parameters in an adequately discounted form. The controversy about Nicolas Stern's and Ross Garnaut's irrationally low discount rates used in their very influential models suggests that such transfers are not justifiable.

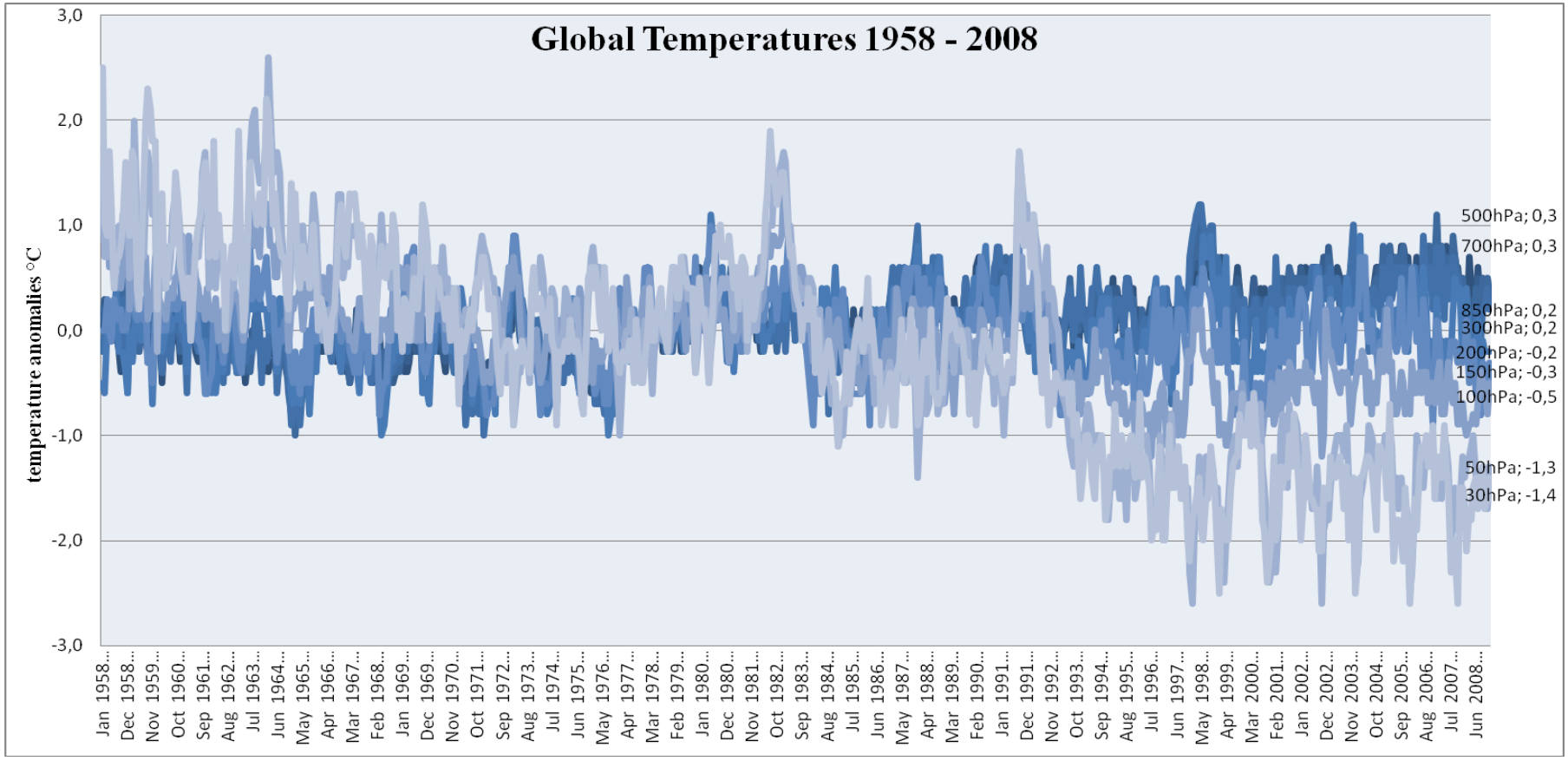
To conclude, it is evident that the environmentalists don't want to change the climate. They want to change us and our behavior. Their ambition is to control and manipulate us. Therefore, it should not be surprising that theyrecommend „preventive", not „adaptive" policies. Adaptation would be our voluntary behavior which is not what they aim at. They do not want to

recognize that – to quote Nigel Lawson – "the capacity to adapt is arguably the most fundamental characteristic of mankind" and that our "adaptive capacity is increasing all the time with the development of technology".

The environmentalists speak about "Saving the Planet". From what? And from whom? One thing I know for sure: we have to save it – and us – from them.

Václav Klaus, The 2009 Heartland Institute International Climate Change Conference, Marriott Marquis Hotel, New York, March 8, 2009

APPENDIX II.



ASCII data file created by Hadley Centre routine mkascii_file.pro on Tue Jan 20 16:01:48 2009. Graph shows global temperature progress over the last 50 years for different pressure values measured in hectopascal (hPa). Source: http://hadobs.metoffice.com