

Climate change and global warming

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Climate change and its directly significant effect, i.e., global warming, have recently become more and more remarkable global problems. Global atmospheric concentrations of CO₂, CH₄ and N₂O have increased markedly as a result of human activities since 1750, thus the Earth's climate must change somehow to restore the balance between incoming and outgoing radiation. Under the effect of global warming, sea level will rise, which will cause potential impacts on human life. People must find new styles to develop the economy by using clean energy, making new emission standards, increase producer responsibility for pollution, etc. Natural events and human activities are believed to be contributing to an increase in average global temperatures. In this issue, some important websites were concentrated on to provide the readers with more convenient, comprehensive and informative resources related to climate change and global warming.

1 UCS: leadership for a healthy planet and a safety world

The Union of Concerned Scientists (UCS) website (<http://www.ucsusa.org/>) is the leading science-based nonprofit organization working for a healthy environment and a safer world. UCS combines independent scientific research and citizen action to develop innovative, practical solutions and to secure responsible changes in government policy, corporate practices, and consumer choices. UCS stands out among nonprofit organizations as the reliable source for independent scientific analysis. In an increasingly complex and technical world, rigorous and objective research and analysis is essential to devise innovative and effective solutions for cleaner air, energy and transportation, to ensure food is produced in a safe and sustainable manner, and to build a future free from the threats of global warming and nuclear war.

In the website of UCS, many key challenges, such as globe warming, clean vehicles, clean energy and nuclear power, were all included. Global warming is one of the most serious challenges facing us today. To protect the health and economic well-being of current and future generations, people must reduce their emissions of heat-trapping gases, such as CO₂ and CH₄, by using the technology, know-how, and practical solutions already at disposal. The website (http://www.ucsusa.org/global_warming/) supplies readers with lots of information such as globe warming science and impact, globe warming solutions and

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regional information, etc. For example, energy solutions in the “global warming solutions” section were discussed in basic and in depth analysed. Readers from different levels can obtain the related information and decide which way is better for global warming in energy aspect.

The Catalyst magazine, Earthwise newspaper, Latest report, and Greentips e-newsletter are the four main magazines on the website. Many publications are downloadable from the website (<http://www.ucsusa.org/publications/>). For example, readers can download a new series of reports entitled “The Confronting Climate Change in the US Midwest”. Edited by UCS and leading climate scientists, the series provides an in-depth look at the potential consequences of climate change in the US Midwest. The series also shows that without strong action to reduce heat-trapping emissions, midwestern states could face dramatic changes including increases in the number of extreme heat days, heavier rains in the spring causing delays in agricultural planting, and an expansion of the range for crop-damaging pests.

2 CORE: carbon offset research & education

Carbon Offset Research & Education (CORE) (<http://www.co2offsetresearch.org>) is an initiative of the Stockholm Environment Institute (SEI), which is an independent, international research institute bridging science and policy for sustainable development. CORE’s mission is to foster offset programs and policies that maximize their potential benefits, while minimizing their potential risks. The CORE team conducts cutting-edge research to inform policy makers and the general public. The content of the website is based on research conducted separately for US EPA, WWF and others.

This website (<http://www.co2offsetresearch.org/index.html>) provides an up-to-date analysis and synthesis of the most influential offset programs and activities. It reflects on lessons learned, and aims to inform consumers as well as participants and designers of current and future offset programs. The website is divided into three sections which are interlinked: Policy Information, Consumer Information and Consumer Information.

The Policy Information section (<http://www.co2offsetresearch.org/policy/index.html>) of the CORE

website provides in-depth analysis and up-to-date information about offset design and policies. It aims to foster offset programs and policies that maximize their potential benefits, while minimizing their potential risks. This section provides a systematic and comprehensive review of existing offset programs. It looks what offsets are, how offset mechanisms function, and the successes and pitfalls they have encountered.

Consumer Information (<http://www.co2offsetresearch.org/consumer/index.html>) provides a non-technical overview and introduction to carbon offsets, their pros and cons, how they work and how to choose the right ones. One may get started by reading the sections “What Makes Good Offsets?” and “Are Offset a Scam?” and “the Introduction to Offset Markets”. One can also find a list of “Studies that Rate Offset Providers” and “a Comprehensive List of Offset Providers”.

Aviation Information (<http://www.co2offsetresearch.org/aviation/index.html>) highlights the key factors that have to be taken into account when calculating air travel emissions for the purpose of climate footprint and offset calculations.

3 GCRIO: global change research information office

The Global Change Research Information Office (GCRIO) (<http://www.gcrio.org/index.php>) provides access to data and information on climate change research, adaptation/mitigation strategies and technologies, and global change-related educational resources on behalf of the various US Federal Agencies that are involved in the US Global Change Research Program (USGCRP; <http://www.globalchange.gov/>).

GCRIO offers the following products and services to its users: GCRIO acts as a clearinghouse for selected key documents and reports that are either generated or sponsored by the US Government or by specific Federal Agencies. It provides high-level User Services for the interagency Global Change Data and Information System (GCDIS). Also, GCRIO performs outreach services to both domestic (Federal, state, and local) and international target audiences (including governments, institutions, researchers, educators, students, and the general public) in an effort to showcase relevant activities and results of the US Global Change

Research Program and to help increase the awareness of the availability of data and information resources of the participating Federal Agencies.

GCRIO operates “Dr. Global Change” (<http://www.gcrio.org/doctorgc/index.php>), a reference service designed to assist researchers, students, educators, decision makers and the general public to find information and data relevant to global environmental change.

The quickest and easiest way to order a document that GCRIO distributes is to use the “Online Catalog” (<http://www.gcrio.org/orders/index.php>), in which one can download PDFs of the latest reports by the US Climate Change Science Program or order all products in this catalog free of charge. For example, one can order a 244 pages report “Our Changing Planet. The US Climate Change Science Program for Fiscal Year 2010”, which is a report by the Climate Change Science Program and the Subcommittee on Global Change Research and also a supplement to the President’s Budget for Fiscal Year 2010.

GCRIO provides selected key documents on-line in full-text (<http://www.gcrio.org/library/index.htm>). The selection for on-line placement is usually made on the basis of importance to the USGCRP (e.g., the annual production of Our Changing Planet). GCRIO also provides access to bibliographic databases that enable a user to identify documents and publications from title, abstract and keyword searches (<http://www.gcrio.org/biblio.html>).

4 IPCC: intergovernmental panel on climate change

The Intergovernmental Panel on Climate Change (<http://www.ipcc.ch/index.htm>) is the leading body for the assessment of climate change, established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) to provide the world with a clear scientific view on the current state of climate change and its potential environmental and socio-economic consequences.

The IPCC reviews and assesses the most recent scientific, technical and socio-economic information produced worldwide relevant to the understanding of climate change. It does not conduct any research nor does it monitor climate related data or parameters. Thousands of scientists from all over the world

contribute to the work of the IPCC on a voluntary basis. Review is an essential part of the IPCC process, to ensure an objective and complete assessment of current information. Differing viewpoints existing within the scientific community are reflected in the IPCC reports.

The main activity of the IPCC is to provide at regular intervals Assessment Reports of the state of knowledge on climate change (http://www.ipcc.ch/publications_and_data/publications_and_data.htm). The latest one is “Climate Change 2007”, the IPCC Fourth Assessment Report. The IPCC produces also Special Reports; Methodology Reports; Technical Papers; and Supporting Material, often in response to requests from the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC), or from other environmental Conventions. Some full reports and the summaries of many reports are translated into the official UN languages. Most IPCC Reports published since 1997, including non-English versions, are available online on this web site and on CD-ROMs. Translations into some non UN languages are also made available on this website.

The IPCC Data Distribution Centre (DDC) (<http://www.ipcc-data.org/>) provides climate, socio-economic and environmental data, both from the past and also in scenarios projected into the future. Technical guidelines on the selection and use of different types of data and scenarios in research and assessment are also provided. The DDC web site has the following areas: Climate observations, Climate model projections and simulations, Monthly means and climatologies, Socio-economic data, Environmental data and Scenarios, Guidelines and other supporting material.

5 Climate strategies: assisting governments in solving the collective action problem of climate change

Mission of “Climate Strategies” (<http://www.climatestrategies.org/>) is to assist governments in solving the collective action problem of climate change by convening international groups of experts to provide rigorous, fact-based and independent assessments on international climate change policy. “Climate Strategies” aims to connect leading applied research on international climate change issues to the policy

process and public debate, raising the quality and coherence of advice provided on policy formation. To effectively communicate insights into climate change policy, “Climate Strategies” works with decision-makers in governments and business, particularly, but not restricted to, the countries of the European Union and EU institutions.

“Climate Strategies” is also a bridge between the research sector and applied policy analysis. Climate

Strategies acts in ways that can help governments to manage the complexities both of assessing the options, and of securing a degree of international and stakeholder/public consensus around them. The core capacity of “Climate Strategies” is, therefore, to convene projects and give them impact in the international and business communities.