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Editor: Patrick Bailey
Web Page: www.padrak.com/ine/
E-mail: halfox@qwest.net or ine@padrak.com

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ITEMS FOR NEN

If you find new-energy items that you believe others would like to read, send them by mail or email to us and we will give credit to the first person that sends in any particular item. Your help will make NEN a better source of new-energy information.

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ABSTRACTS

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Courtesy of Patrick Bailey
patrick.bailey@lmco.com

www.xogen.com (private company) has patented a device that splits water into H_2 & O_2 using pulsed and different waves shapes very efficiently (i.e., can run motor driving generator that recharges battery) covered in patent 6126794 at IBM's site at www.delphion.com/home Can use real player to view beta version in operation.

In xogen's links go to www.tathacus.com, which owns 20% interest. It is public and the stock is selling at about 6.75 per share as of January 24/01 with 5 month high at 14.25 and 3.80 (Cdn) low. The tathacus site has more information on the project itself.

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Courtesy of Hal Fox

The following extracted from DOE's
EREN NETWORK NEWS -- February 7, 2001

A More Detailed Look at the California Energy Situation

One source of information is DOE's Energy Information Administration (EIA), which has a page of statistics on energy use in the state. An interesting fact is that California actually ranks high in the United States in terms of energy efficiency -- the average residential user in California uses about 37 percent less electricity each month than the typical U.S. consumer. That has a direct impact on the pocketbook: even though Californians had the third-highest cost of electricity in 1999, their monthly bills were 17 percent below the national average. See the "California Electric Energy Crisis" page on the EIA Web site at:

www.eia.doe.gov/cneaf/electricity/california/california.html

Insurers: Climate Change to Cost $300 Billion Annually

A report by Munich RE, one of the world's largest reinsurance companies, is predicting that the worldwide cost of climate change will reach $300 billion annually by 2050. The report anticipates losses due to more frequent tropical cyclones, loss of land as a result of rising sea levels, and damage to fishing stocks, agriculture, and water supplies. The report was announced on Saturday by the United Nations Environment Programme (UNEP). See the UNEP press release at:

www.unep.org/Documents/Default.asp?DocumentID=192

Reinsurance, by the way, can be thought of as "insurance for insurance companies," a way for a primary insurer to protect against unforeseen or extraordinary losses. According to the Reinsurance Association of America (RAA), reinsurance plays a critical role in the financial management of natural disaster losses. See the RAA Web site at:

http://www.reinsurance.org/abouttheraa/raa_quick_facts.html

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THE DOE FAILED TO IMPLEMENT
A COMPREHENSIVE ENERGY STRATEGY

Courtesy of Thomas Valone
Reference: Integrity Research Institute,
1220 L St. NW #100-232, Washington, DC 20005,
800-295-7674 **www.integrity-research.org**

Integrity Research Institute (IRI) released a 176-page report, "Energy Crisis: The Failure of the Comprehensive National Energy Strategy" (CNES) that finds only 35% of the 1998 DOE's CNES* had any chance of fulfillment. "This is unacceptable," states IRI President and "Energy Crisis" author, Thomas Valone, "especially when the rest of the world is looking to the U. S. as a leader in technology and economy." Spanning the reign of DOE Secretaries Pena and Richardson, the strategies of the CNES were found to be most successful where the DOE had the authority to implement change. Examples of these include the development of more efficient energy technologies for the transportation sector and Federal buildings energy use. However, a wide variety of the 1998 DOE strategies were vague intentions for improvement such as, "cooperate with foreign governments" and "maintain a viable nuclear option," where no progress could be measured or decline was unavoidable. The worst strategy of the DOE 1998 publication, in IRI opinion, is under Goal III, Objective 2, intending to "promote international joint efforts to reduce greenhouse gas emissions" while at the same time, the technology-bereft State Department defeated such efforts.

Some of the "Energy Crisis" key findings are: (1) The CNES does not address where an increasing amount of energy can come from to meet future U.S. energy demands which will exceed energy production by 40 quads (quadrillion Btu) in 2020; (2) The CNES does not address the expected 2010 peak of world oil production and the projected decline; (3) The CNES promotes increasing carbon emissions through 2010 to 44% higher than 1990 levels or 51% higher than the Kyoto Protocol; (4) The CNES fails to indicate the advantages of reducing carbon emissions and the cost-effective benefits of doing so, even when a 1997 five-laboratory DOE report (ORNL/CON-444) showed the pay backs that will meet or exceed the investment in three out of four sectors.

Though the 1998 CNES also stressed the promotion of stability in the nation's energy supplies, IRI finds that the DOE efforts primarily created a short-term, false sense of security, while depriving the nation of viable future energy choices. Specific energy alternatives, a protocol for stabilizing atmospheric CO2 at safe levels, and many charts and graphs are included in this detailed analysis of the previous administration's attempt at energy management. More information is available at the Integrity Research Institute web site:
www.integrity-research.org
or by calling 800-295-7674 or local number, 202-452-7674.

The 1998 Comprehensive National Energy Strategy is online at http://www.hr.doe.gov/nesp/cnes.html

REACTIONS TO A PARADIGM SHIFT

Courtesy of Hal Fox

Almost every major advance in science has come with major objections to the demonstrated or suggested new discovery. For example, when T. Henry Moray submitted his patent for the first transistor (about 1930) the application was return with the comment, "This will obviously not work because it has no filament." For you younger generation types, up to that time all electronic amplifying devices were vacuum tubes and were heated by filaments.

When Pons and Fleischmann's patent was rejected (and later over 200 of cold fusion inventions) the inventors were sent a copy of a paper by 16 MIT Ph.D. and a copy of an article in the New York Times showing that cold fusion didn't work. That type of mentality is not limited to the Office of Patents and Trademarks. The currently-accepted and taught model of physical reality that is in the text books and taught in the Universities and colleges is the current belief structure (religion) for the academic community. Therefore, that which is contrary to the current model is going to receive the treatment given to all paradigm shifts (model changes).

Here is a list of topics for which patent applications are being prepared or for which it is expected that patent applications will soon be prepared:

1.Methods and devices to nullify or shield the effects of gravity.

2.Methods by which a flying saucer can be propelled in a manner superior to ordinary aircraft.

3.New methods for making greatly improved proton accelerators.

4.Communication devices that can transmit information at many times the speed of light.

5.Devices to communicate with departed personalities.

6.Devices for tapping the energy of the vacuum continuum (space energy, zero-point energy, etc.) However, the first patent to make such a claim has already issued (5,018,180).

Sir Arthur C. Clarke can probably suggests a few more.

Here is a proposal:
We should ask for specific legislation that would permit an inventor to have a hearing before the patent examiner and his/her classification supervisor. Such hearing would allow the inventor to marshal scientific

evidence from one or more scientific authorities to define a scientific fact. (The following definition of a scientific fact is proposed: "The close agreement of a series of observations of the same phenomena by independent investigators.") The law should include the requirement that when such a scientific fact has been established by qualified scientists, that the Office of Patents and Trademarks cannot adapt a policy by which inventions are denied because of the supposed impossibility of such a scientific discovery.

Your comments for this proposed action are welcomed. There are now-pending many inventions based on new discoveries that will challenge the less-informed examiners of the patent office.

Hal Fox, editor, Journal of New Energy

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WHERE U.S. ENERGY COMES FROM

Courtesy of Hal Fox

Reference: Gordon B. Moody's *Global Energy Outlook*, January 2001, p 2.

Total U.S. Energy Consumption by Primary Energy Source, 1998
[In order of percent.]

SOURCE	PERCENT OF TOTAL
Petroleum	40.7
Natural Gas	24.1
Coal	23.3
Nuclear	7.9
Hydro-electric	3.8
Other	0.2

Since 1998 it is expected that other (solar, wind, etc.) will have increased. Natural gas will have increased and nuclear sources probably declined.

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U.S. ENERGY DEMANDS TO GROW BY 32 PERCENT DURING THE NEXT TWO DECADES

Courtesy of Hal Fox
Reference: Article in *Global Energy Outlook*, January 2001, page 9.

A report in the January 15th issue of the Oil and Gas Journal says that U.S. energy demand will grow by nearly one-third during the next two

decades. In its annual Energy Outlook report, the Energy Information Administration says Americans will consume 127 quadrillion BTU (quads) of energy in year 2020, assuming no changes in federal laws or regulations. A faster or slower economy or wide use of energy-efficient and renewable energy sources could change this forecast. The Energy Information Administration (EIA) says that the 32 percent increase in energy demand assumes that the economy will grow at normal rates during the 30-year period. The carbon dioxide emissions are expected to increase by 116 million tons of carbon equivalent by the year 2020.

Same source, page 10: President of Simmons & Co. International of Houston, has long warned of an impending natural-gas crisis. He says, get ready for "a decade-long problem." In addition to heating 53 percent of American homes, natural gas is being used to generate 16 percent of America's electricity. ... Come spring there will be gasoline shortages for the lack of refinery capacity. The Clinton legacy of the lack of an energy policy to keep America energy secure will be one of the greatest problems faced by the Bush administration.

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BOOK REVIEW
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NEW TESLA BOOK

Courtesy of Remy Chevalier

This book is quite a departure for New Society publishers which in the past has focused mostly on left leaning environmental commentary. It has since taken on the task of also distributing Wales's Centre for Alternative Technology titles in North America and I'm guessing the process widened their horizon. This book draws a lot from the work and thought of Nikola Tesla where he is quoted often. Like the Coming Energy Revolution by Jeane Manning, it attempts to bridge the gap between old thinking and new thinking as it applies to environmental solutions and transformation. I highly recommend this book as an encouragement to New Society Publishers to continue in this direction.

From:
http://www.newsociety.com/ntc.html

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NAVIGATING THE TIDES OF CHANGE
With Stories from Science, the Sacred, and a Wise Planet
David La Chapelle

This evocative work addresses the challenge of navigating the accelerating pace of change effectively so that we can live more sustainably, through the medium of stories told from modern science, esoteric and spiritual traditions, and Earth wisdom. By integrating these often-strange bedfellows, as well as by emulating great thinkers and doers from history, Navigating the Tides of Change presents a compelling case that humankind can create a future in harmony with the Earth.

Believing that that the solutions to external problems are often to be found in our own inner lives, the author explores the relationship between ecology, visionary experience, inspiration, creative and scientific inquiries, and the gifts of indigenous peoples. Navigating the Tides of Change puts forward two propositions: first, that our problems can be solved by synthesizing the best wisdom from a variety of disparate traditions; and, second, that individuals have the power to tap into realms of insight and understanding that can help re-pattern our world in a more harmonious way.

Interludes highlight the contributions of great thinkers and doers from history to the overall 'navigation' process; "Navigator's Toolbox" sections recapitulate key lessons from the book's stories; and detailed resource lists include a wide range of books and web sites. A book of stories that tell a larger story, Navigating the Tides of Change will appeal to a broad audience of educators, environmentalists, and all concerned to integrate the spiritual with the scientific.

David La Chapelle is an environmental writer and a regular contributor to the Institute of Noetic Sciences Magazine. He has been a Healer for 25 years, taught at the Naropa Institute, and has led countless training, retreat, and Wilderness Quest groups.
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e-mail: info@newsociety.com

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CLIMATE CHANGE 2001: THE SCIENTIFIC BASIS

Courtesy of Toby Grotz

Concentrations of atmospheric greenhouse gases and their radiate forcing have continued to increase as a result of human activities. The atmospheric concentration of carbon dioxide (CO_2) has increased by 31% since 1750. The present CO_2 concentration has not been exceeded during the past 420,000 years and likely not during the past 20 million years. The current rate of increase is unprecedented during at least the past 20,000 years.

About three-quarters of the anthropogenic emissions of CO_2 to the atmosphere during the past 20 years is due to fossil fuel burning. The rest is predominantly due to land-use change, especially deforestation.

Shanghai Draft 21-01-2001 20:00 IPCC WGI THIRD ASSESSMENT REPORT 1 NOT FINAL CHECKING AND EDITING STILL REQUIRED

Summary for Policymakers

The Third Assessment Report of Working Group I of the Intergovern-mental Panel on Climate Change (IPCC) builds upon past assessments and incorporates new results from the past five years of research on climate change. Many hundreds of scientists from many countries participated in its preparation and review.

This Summary for Policymakers (SPM), which was approved by IPCC member governments in Shanghai in January 2001 describes the current state of understanding of the climate system and provides estimates of its projected future evolution and their uncertainties. Further details can be found in the underlying report (Source Notes will provide cross references to the report's chapters).

Climate change in IPCC usage refers to any change in climate over time, whether due to natural variability or as a result of human activity. This usage differs from that in the Framework Convention on Climate Change, where climate change refers to a change of climate that is attributed

directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparable time periods.

In total 123 Coordinating Lead Authors and Lead Authors, 516 Contributing Authors, 21 Review Editors and 300 Expert Reviewers.

Delegations of 100 (exact number to be inserted) IPCC member countries participated in the Eighth Session of Working Group I in Shanghai on 17-20 January 2001.

An increasing body of observations gives a collective picture of a warming world and other changes in the climate system. Since the release of the Second Assessment Report, additional data from new studies of current and paleo-climates, improved analysis of data sets, more rigorous evaluation of their quality, and comparisons among data from different sources have led to greater understanding of climate change.

The global-average surface temperature has increased over the 20th century by about 0.6C.

The global-average surface temperature (the average of near surface air temperature over land, and sea surface temperature) has increased since 1861. Over the 20th century the increase has been 0.6 ± 0.2 C. This value is about 0.15 C larger than that estimated by the SAR for the period up to 1994, owing to the relatively high temperatures of the additional years (1995 to 2000) and improved methods of processing the data. These numbers take into account various adjustments, including urban heat island effects.

The record shows a great deal of variability: For example, most of the warming occurred during the 20th century, during two periods: 1910 to 1945 and 1976 to 2000. Generally temperature trends are rounded to the nearest 0.05C per unit time, the periods often being limited by data availability. In general, a 5% statistical significance level is used, and a 95% confidence level. The IPCC Second Assessment Report is referred to in this Summary for Policymakers as the SAR. Globally, it is very likely that the 1990s was the warmest decade and 1998 the warmest year in the instrumental record, since 1861 .

New analyses of proxy data for the Northern Hemisphere indicate that the increase in temperature in the 20th century is likely to have been the largest of any century during the past 1000 years. It is also likely that, in the Northern Hemisphere, the 1990s was the warmest decade and 1998 the warmest year .

Because less data are available, less is known about annual averages prior to 1000 years before present and for conditions prevailing in most of the Southern Hemisphere prior to 1861.

In this Summary for Policymakers and in the Technical Summary, the following words have been used where appropriate to indicate judgmental estimates of confidence: virtually certain (greater than 99% chance that a result is true); very likely (90-99% chance); likely (66-90% chance); medium likelihood (33-66 % chance); unlikely (10-33% chance); very unlikely (1-10% chance); exceptionally unlikely (less than 1% chance). The reader is referred to individual chapters for more details. (Call out footnote at each usage of any of the terms) On average, between 1950 and 1993, night-time daily minimum air temperatures over land increased by about 0.2 C per decade. This is about twice the rate of increase in day-time daily maximum air temperatures (0.1 C per decade). This has lengthened the freeze-free season in many mid- and high-latitude regions. The increase in sea surface temperature over this period is about half that of the mean land surface air temperature. Temperatures have risen during the past four decades in the lowest 8 kilometers of the atmosphere. Since the late 1950s (the period of adequate observations from weather balloons), the overall global temperature increases in the lowest 8 kilometers of the atmosphere and in surface temperature have been similar at 0.1 C per decade.

Since the start of the satellite record in 1979, both satellite and weather balloon measurements show that the global average temperature of the lowest 8 kilometers of the atmosphere has changed by $+0.05 \pm 0.101$C per decade but the global average surface temperature has increased significantly by $+0.15 \pm 0.05$ 1C per decade.

The difference in the warming rates is statistically significant. This difference occurs primarily over the tropical and sub-tropical regions. The lowest 8 kilometers of the atmosphere and the surface are influenced differently by factors such as stratospheric ozone depletion, atmospheric aerosols, and the El Niño phenomenon. Hence, it is physically plausible to expect that over a short time period (e.g. 20 years) there may be differences in temperature trends.

In addition, spatial sampling techniques can also explain some of the differences in trends, but these differences are not fully resolved. Snow cover and ice extent have decreased. Satellite data show that there are very likely to have been decreases of about 10% in the extent of snow cove since the late 1960s, and ground-based observations show that there is very likely to have been a reduction of about two weeks in the annual duration of lake- and river-ice cover in the mid- and high-latitudes of the Northern Hemisphere, over the 20th century.

There has been a widespread retreat of mountain glaciers in non-polar regions during the 20th century. Northern Hemisphere spring and summer sea-ice extent has decreased by about 10 to 15% since the 1950s. It is likely that there has been about a 40% decline in Arctic sea-

ice thickness during late summer to early autumn in recent decades and a considerably slower decline in winter sea-ice thickness. Global average sea level has risen and ocean heat content has increased. Tide-gauge data show that global-average sea level rose between 0.1 and 0.2 meters during the 20th century. Global-ocean heat content has increased since the late 1950s, the period for which adequate observations of sub-surface ocean temperatures have been available.

Changes have also occurred in other important aspects of climate. It is very likely that precipitation has increased by 0.5 to 1% per decade in the 20th century over most mid- and high-latitudes of the Northern Hemisphere continents, and it is likely that rainfall has increased by 0.2 to 0.3% per decade over the tropical (10 N to 10 S) land areas. Increases in the tropics are not evident over the past few decades. It is also likely that rainfall has decreased over much of the Northern Hemisphere sub-tropical (10 N. Shanghai Draft 21-01-2001 20:00 PCC WGI THIRD ASSESSMENT REPORT 3 to 30 N) land areas during the 20th century by about 0.3% per decade. In contrast to the Northern Hemisphere, no comparable systematic changes have been detected in broad latitudinal averages over the Southern Hemisphere. There are insufficient data to establish trends in precipitation over the oceans.

In the mid- and high-latitudes of the Northern Hemisphere over the latter half of the 20th century, it is likely that there has been a 2 to 4% increase in the frequency of heavy precipitation events. Increases in heavy precipitation events can arise from a number of causes, e.g., changes in atmospheric moisture, thunderstorm activity and large-scale storm activity.

It is likely that there has been a 2% increase in cloud cover over mid-to high-latitude land areas during the 20th century. In most areas the trends relate well to the observed decrease in daily temperature range. Since 1950 it is very likely that there has been a reduction in the frequency of extreme low temperatures, with a smaller increase in the frequency of extreme high temperatures. Warm episodes of the El Niño-Southern Oscillation (ENSO) phenomenon (which consistently affects regional variations of precipitation and temperature over much of the tropics, sub-tropics and some mid-latitude areas) have been more frequent, persistent and intense since the mid 1970s, compared with the previous 100 years.

Over the 20th century (1900-1995), there were relatively small increases in global land areas experiencing severe drought or severe wetness. In many regions, these changes are dominated by interdecadal and multidecadal climate variability, such as the shift in ENSO towards more warm events.

In some regions, such as parts of Asia and Africa, the frequency and intensity of droughts have been observed to increase in recent decades. Some important aspects of climate appear not to have changed. A few areas of the globe have not warmed in recent decades, mainly over some

parts of the Southern Hemisphere oceans and parts of Antarctica. No significant trends of Antarctic sea-ice extent are apparent since 1978, the period of reliable satellite measurements.

Changes globally in tropical and extra-tropical storm intensity and frequency are dominated by interdecadal to multidecadal variations, with no significant trends evident over the 20th century. Conflicting analyses make it difficult to draw definitive conclusions about changes in storm activity, especially in the extratropics. No systematic changes in the frequency of tornadoes, thunder days, or hail events are evident in the limited areas analyzed.

Emissions of greenhouse gases and aerosols due to human activities continue to alter the atmosphere in ways that are expected to affect the climate.

Changes in climate occur as a result of both internal variability within the climate system and external factors (both natural and anthropogenic). The influence of external factors on climate can be broadly compared using the concept of radiative forcing. A positive radiative forcing, such as that produced by increasing concentrations of greenhouse gases, tends to warm the surface. A negative radiative forcing, which can arise from an increase in some types of aerosols (microscopic airborne particles) tends to cool the surface. Natural factors, such as changes in solar output or explosive volcanic activity, can also cause radiative forcing. Characterization of these climate forcing agents and their changes over time, is required to understand past climate changes in the context of natural variations and to project what climate changes could lie ahead.

Radiative forcing is a measure of the influence a factor has in altering the balance of incoming and outgoing energy in the Earth-atmosphere system, and is an index of the importance of the factor as a potential climate change mechanism. It is expressed in Watts per square meter (Wm -2).

Shanghai Draft 21-01-2001 20:00 IPCC WGI THIRD ASSESSMENT REPORT

Concentrations of atmospheric greenhouse gases and their radiative forcing have continued to increase as a result of human activities. The atmospheric concentration of carbon dioxide (CO_2) has increased by 31% since 1750. The present CO_2 concentration has not been exceeded during the past 420,000 years and likely not during the past 20 million years. The current rate of increase is unprecedented during at least the past 20,000 years.

About three-quarters of the anthropogenic emissions of CO_2 to the atmosphere during the past 20 years is due to fossil fuel burning. The rest is predominantly due to land-use change, especially deforestation. Currently the ocean and the land together are taking up about half of

the anthropogenic CO_2 emissions. On land, the uptake of anthropogenic CO_2 very likely exceeded the release of CO_2 by deforestation during the 1990s.

The rate of increase of atmospheric CO_2 concentration has been about 1.5 ppm (0.4%) per year over the past two decades. During the 1990s the year to year increase varied from 0.9 ppm (0.2%) to 2.8 ppm (0.8%). A large part of this variability is due to the effect of climate variability (e.g. El Niño events) on CO_2 uptake and release by land and oceans.

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CLIMATE CHANGE OUTSTRIPS FORECASTS

Courtesy of Alex Kirby

Reference: BBC
http://news.bbc.co.uk/hi/english/sci/tech/newsid_1126000/1126669.stm

The world's leading climatologists say global warming is happening faster than previously predicted.

Dr. Robert Watson, IPCC They say world temperatures this century could rise by between 1.4 and 5.8 degrees Celsius. Sea levels could also rise by tens of centimeters, threatening millions of people living in low-lying countries.

The Intergovernmental Panel on Climate Change (IPCC), which has been meeting in Shanghai, China, says an increasing body of observations gives a collective picture of a warming world. And it says the evidence is stronger than before for a human influence on the climate.

The head of the United Nations Environment Programme, Dr. Klaus Toepfer, said: "The scientific consensus presented in this comprehensive report about human-induced climate change should sound alarm bells in every national capital and in every local community"

Dr Robert Watson, who heads the panel of scientists advising the United Nations, said there could be massive implications in terms of water shortages, drought, damage to agriculture and the increased spread of disease, with developing countries worst hit.

Hottest decade

He said: "There's no doubt the Earth's climate is changing. The decade of the 1990s was the hottest decade of the last century and the warming in this century is warmer than anything in the last 1,000 years in the Northern Hemisphere.

"We see changes in climate, we believe we humans are involved and

we're projecting future climate changes much more significant over the next 100 years than the last 100 years."

In this third assessment report of its Working Group One on the science of climate change, the IPCC updates its 1995 Second Assessment Report (Sar). It says its confidence in the ability of models to project future climates has increased, with the greatest uncertainty still arising from the effects on climate of clouds.

The report notes: "The observed changes in climate over time have been documented extensively by a variety of techniques. Many of these trends are now established with high confidence; others are far less certain."

It gives details of several trends, for example:

- The global-average surface air temperature has increased since the mid-19th century

- In the last four decades, temperatures have risen in the lowest few kilometers of the atmosphere

- Snow cover and ice extent have decreased

- Global average sea level has risen, and ocean heat content has increased

- Some important aspects of the global climate appear unchanged. No significant trends of Antarctic sea-ice extent are apparent over the last 30 years, and there are no clear long-term trends discernible in the intensity and frequency of tropical storms.

Under a variety of scenarios it has prepared, the IPCC says temperature and sea level are projected to rise.

The range for globally-averaged surface air temperature increase by 2100 ranges from about 1.4 degrees Celsius to 5.8 degrees, an increase the report notes "would be without precedent during the last 10,000 years". The projected sea level rise by 2100 is between 0.09 and 0.88 meters.

But the report does say that there are still many gaps in information and understanding. One priority, it says, is to "arrest the decline of observational networks in many parts of the world".

The report says that emissions of greenhouse gases continue to warm the Earth's surface, and that emissions of some types of aerosols help to cool it. It is clear that both are caused by human activities, although the report notes that natural factors, such as changes in solar output or volcanic eruptions, can also have an effect.

Carbon build-up

It estimates the warming caused by changes in solar energy since 1950 at about one-fifth of that attributable to carbon dioxide (CO_2), and concludes that "natural agents have contributed small amounts" to warming over the last century.

The report quantifies the build-up of CO_2 in the atmosphere. The concentration now is one-third more than in 1750, it says.

"The present CO_2 concentration has not been exceeded during the past 420,000 years and likely not during the past 20 million years. The rate of increase is unprecedented during at least the past 20,000 years.

"Over two-thirds of the increase in atmospheric CO_2 during the past 20 years is due to fossil fuel burning. The rest is due to land-use change, especially deforestation, and, to a lesser extent, cement production."

Methane concentrations have increased by a factor of 2.5 since 1750, and those of nitrous oxide by 16%.

The Sar concluded in 1995: "The balance of evidence suggests a discernible Human influence on global climate."

This report says there is now stronger evidence for a human influence on global climate. It concludes: "It is likely that increasing concentrations of anthropogenic greenhouse gases have contributed substantially to the observed warming over the last 50 years."

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DEAD SEAS

Courtesy of Peter Hadfield

Reference: New Scientist magazine

http://www.newscientist.com/news/news.jsp?id=ns227333

GLOBAL warming may be creating a "dead zone" in the Sea of Japan. Rising temperatures are shutting down a circulation process that is crucial to life there, say researchers in Japan, and the same problem could affect oceans across the planet.

In winter, oxygen-rich surface water in the Sea of Japan becomes colder than the water below and sinks, taking oxygen with it. The oxygen encourages the growth of bacteria that break down organic matter falling to the seabed. At the same time, the current brings inorganic matter up from the depths, which plant plankton feed on.

When this convection current was first measured in the 1930s, its effects

were felt more than 2500 meters below the surface. But Yoon Jong-Hwan, a South Korean marine physicist at the Research Institute for Applied Mechanics on the Japanese Island of Kyushu, says the current is now so weak that it doesn't reach down beyond a few hundred meters.

Meanwhile, the oxygen level at 2500 meters is falling at a rate that would reduce it to zero within 350 years. This would choke off life at the bottom of the food chain and extinguish species higher up.

Yoon believes the culprit is global warming. During the past 50 years the average temperature around the northern Sea of Japan has increased by between 1.5 and 3 °C. The surface water stays warmer in winter, which weakens convection currents. Oceans might be affected too, says Yoon. "I suspect the same problem is happening in the open ocean, but we can't find evidence [elsewhere] of convection currents being stopped at the bottom," he says.

Yoon warns that if ocean waters start to circulate less efficiently, the problem will rapidly get worse. As the convection system weakens, fewer inorganic nutrients are brought up from the bottom, cutting off a key food supply for plankton. Not only do plankton form the base of the food chain for the entire ocean, they are also a major carbon dioxide sink. Without them, global warming would accelerate, winding down circulation systems even further.

Other researchers say more work is needed to find out how ocean currents are affected by global warming. "We're now initiating a major program in Britain to study this," says Adrian New of the Southampton Oceanography Center. With his colleague Jochem Marotzke, he plans to investigate whether rising temperatures around the North Atlantic are affecting the ocean's circulation.

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WASHINGTON POST.COM ARTICLE FROM IRI ON WARMING

Reference: Washington Post http://www.washingtonpost.com

To view the entire article, go to
http://washingtonpost.com/wp-dyn/articles/A30706-2001Jan22.html

Scientists Issue Dire Prediction On Warming

BEIJING, Jan. 22 - In the most forceful warning yet on the threat of global warming, an international panel of hundreds of scientists issued a report today predicting brutal droughts, floods and violent storms across the planet over the next century because air pollution is causing surface temperatures to rise faster than anticipated. The report, approved unanimously at a U.N. conference in Shanghai and described as the most comprehensive study on the subject to date, says that Earth's average

temperature could rise by as much as 10.4 degrees over the next 100 years -- the most rapid change in 10 millennia and more than 60 percent higher than the same group predicted less than six years ago. If new scientific models are accurate, rising temperatures will melt polar ice caps and raise sea levels by as much as 34 inches, causing floods that could displace tens of millions of people in low-lying areas -- such as China's Pearl River Delta, much of Bangladesh and the most densely populated area of Egypt. Droughts will parch farmlands and aggravate world hunger.

Storms triggered by such climatic extremes as El Niño will become more frequent. Diseases such as malaria and dengue fever will spread. "The scientific consensus presented in this comprehensive report about human-induced climate change should sound alarm bells in every national capital and in every local community," said Klaus Topfler, head of the U.N. Environment Program. "We should start preparing ourselves."

The report was drafted by the Intergovernmental Panel on Climate Change, a group of hundreds of scientists established by the United Nations in 1988 to assess warming. The Shanghai survey relies on complex new computer simulations based on weather records from the last 150 years, as well as data collected from ice corings, coral and tree rings -- all of which can provide information on climate going back millions of years. The results of the new models persuaded the panel to declare unequivocally for the first time that mankind is responsible for global warming rather than changes brought by the sun or other natural factors.

"We see changes in climate, we believe we humans are involved, and we're projecting future climate changes much more significant over the next 100 years than the last 100 years," said Robert T. Watson, an American scientist who is chairman of the panel. The report cited "new and stronger evidence that most of the observed warming of the last 50 years is attributable to human activities," primarily the burning of oil, gasoline and coal, which produces carbon dioxide and other gases that trap heat in Earth's atmosphere.

Carbon dioxide levels have increased by 31 percent over the past 250 years, reaching a concentration unseen on the planet in 420,000 years and perhaps as far back as 20 million years, the report said. In 1995, by contrast, the panel reported only a "discernible human influence" on global warming. At that time, the group predicted a temperature rise of no more than 6.3 degrees by 2100. The panel raised that prediction by more than 4 degrees in part because successful efforts to reduce the air pollutant sulfur dioxide, a common element of smog, have had the unintended effect of reducing particles in the air that help deflect the sun's rays, the report said. The global warming issue has proved highly contentious among environmental scientists, with many respected figures arguing that Earth undergoes periodic climatic changes with or without contributions from mankind. Fred Singer, professor emeritus of environmental sciences at the University of Virginia and former director of the U.S. Weather Satellite Service, called the new report "a political

statement" based on theoretical models that does not conform to existing scientific data from thermometers at weather stations, Earth-circling satellites and high-altitude balloons.

Almost all instrumental data, he said, show no warming trend in the past 60 years, and he called data that do "suspect." But David Easterling, principal scientist at the Commerce Department's National Climate Data Center, noted that reductions in airborne sulfates, which act to cool temperatures, are expected this century because of such factors as the burning of cleaner coal. He called the "physics pretty well established."

The new calculations add urgency to international treaty talks on curbing greenhouse gas emissions that collapsed in November as participants disagreed over how to cut such emissions under a commitment made by industrialized countries in 1997. Negotiations have been complicated by a U.S.-led effort to soften the impact of required cuts by adjusting for the amount of carbon dioxide that is absorbed by each nation's forests and farmlands. New climate talks are scheduled in Germany in May. "Only a few countries, such as Britain and Germany, are on track to meet their targets," said Watson, who is the chief science adviser to the World Bank. "The United States is way off meeting its targets." The United States is the largest producer of greenhouse gases, accounting for a quarter of the world total. China ranks second, but its per capita amount is relatively low.

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U.N, U.S. TO HOST CLIMATE, OZONE PROTECTION CONFERENCE

Reference: News release from the United States Department of Defense

http://www.uneptie.org/ozat/military/home.htm

The Department of Defense announced today that it will co host, along with the United Nations Environment Program and the United States Environmental Protection Agency, a conference on Feb. 6-8, 2001, in Brussels, Belgium, that will focus on "The Importance of Military Organizations in Stratospheric Ozone and Climate Protection." More than 100 senior military and environmental officials, industry experts, and representatives of environmental organizations from more than 35 countries will participate.

Conference participants plan to increase their understanding of the importance of phasing out ozone-depleting substances (ODS) and protection of the climate, including the implications of environmental risk on national security. They also will exchange experiences of military environmental protection programs and promote commitment by military officials to implement internal ODS management and climate protection programs.

On Thursday, Feb. 8, a special breakout session will discuss methodologies and good inventory practices for separately reporting greenhouse gas (GHG) emissions from multilateral operations pursuant to the United Nations Charter, as required by Decision 2 of the Third Conference of the Parties of the United Nations Framework Convention on Climate Change.

The Multilateral Fund for the Implementation of the Montreal Protocol is financially supporting the ozone component of the workshop. The conference is also supported by the Australian Department of Defense, the Center for International Environmental Law, the Climate Institute, Department of National Defense Canada, Environment Australia, Environment Canada, the Institute for Defense Analyses, the International Cooperative for Environmental Leadership, the United Kingdom Ministry of Defense, and the United Kingdom Department of Environment, Transport and the Regions.

For more information, see the conference Web site at:
http://www.uneptie.org/ozat/military/home.htm

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NATURAL DISASTERS REPORTED AT RECORD LEVEL IN 2000

Reference: NHNE [nhne@nhne.com]

The world was hit by a record number of natural disasters in 2000 and global warming and a rising population are likely to make future years even worse, the world's largest rein surer said Thursday.

Munich Re said the number of what it categorizes as natural disasters rose by more than 100 to 850 in 2000, although the number of deaths was much lower than in 1999 because less populated areas were affected. It said 10,000 people died as a result of natural disasters in 2000 compared to 75,000 in 1999. Material damage was put at more than $30 billion in 2000.

"Accounting for the growth in world population and the rise in the concentration of property values, the losses caused by natural disasters must be expected to continue to rise in the future," Munich Re said.

"Global warming has to be slowed down. Otherwise the risk situation for insurers in many of the world's regions will intensify," said Gerhard Berz, head of its geo-science research group. Munich Re said that since only $7.5 billion of the estimated damage caused by natural disasters in 2000 had been covered by insurance, it had actually been a relatively inexpensive year for policy underwriters.

Storms were clearly at the top of the list of disasters, accounting for 73 percent of all insured losses, while floods accounted for 23 percent of insured losses. Flooding which hit Mozambique in February making half

a million people homeless was the year's biggest catastrophe.

A series of devastating forest fires in the United States was the other major disaster, causing losses of more than $1 billion despite the fact that relatively few houses caught fire. Dry weather and drought in Europe caused losses of more than $300 million when a severe heat wave in May and June destroyed crops in southeast Europe, particularly in Romania.

The cyclone season in the Pacific and North Atlantic produced a typical number of hurricanes and typhoons and cyclones, it said. The countries affected came off relatively lightly.

http://www.egroups.com/messages/nhnenews

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BRITAIN 2101: 'HOT AND DISEASED'

Courtesy of Bailey, Patrick
patrick.bailey@lmco.com

Reference: London/Associated Newspapers
Monday, February 19, 2001

http://www.thisislondon.co.uk/dynamic/news/story.html?in_review
Parts of Europe will be lost to the sea and half of the continent's mountain glaciers and snowcaps will vanish in the next century as the effects of man-made global warming take hold, according to an authoritative report published today.

Northern Europe, including Britain, will become prone to increased flooding from heavier winter rainfall and higher sea levels while rising temperatures in southern Europe are likely to reduce agricultural productivity, a report by the United Nations Intergovernmental Panel on Climate Change said today.

England is likely to become Mediterranean, the Alps will lose half their glaciers and snow fields, probably killing much of the skiing trade, and the temperature in southern Europe will become too hot for holidays.

The Americas will not escape either. Florida and parts of the US Atlantic coast are likely to be lashed by storms and rising sea levels, with the number of destructive hurricanes likely to rise significantly and to become more extreme in both wind speed and torrential rainfall.

It is the second volume of the report, which talks of potentially enormous loss of life and economic costs. The panel is the most authoritative body of expertise on the subject, consisting of 700 expert scientists across the world.

The panel's reports are issued only after scrupulous examination and rigorous debate with government representatives and within the scientific community.

They report the arid conditions of northern Africa will probably cross the Mediterranean. Rising temperatures will bring increased risk of tropical diseases to Britain and the north of Europe with malaria returning after nearly 300 years. It would also increase agricultural productivity and reduce the number of cold-related deaths.

But changes farther south are likely to add to the pressures on Europe, bringing the possibility of human migration on a scale never seen before. The changing climate would put intolerable pressure on Africa, reducing rainfall still further, increasing coastal erosion and flooding – and possibly inundating the Nile Delta and the most productive parts of Egypt.

In Asia, tens of millions of people are likely to find their homes destroyed by rising sea levels, with potentially enormous loss of life.

Global economic losses from so-called natural catastrophes increased from about $4 billion per year in the Fifties to $40 billion in 1999. Total costs were in reality twice as high, taking into account smaller weather-related events. The report says that these already poorer countries would bear the brunt of devastating changes.

All this is likely to force mass migration of tens of millions of people.

Where those displaced from Asia and Africa will go is not made clear – but Europe appears the most likely destination. In the natural world, rates of extinction are likely to increase dramatically as habitat is wiped out.

Changing rainfall patterns coupled with population growth would lead to huge pressure on water supplies, the report predicted. At present 1.7 billion people live in areas where water resources are tight. This is likely to increase to around 5.4 billion in the next 25 years.

The report said that the change in temperature was most extreme and rapid in the Polar Regions and this would have potentially disastrous consequences. "Polar Regions contain important drivers of change. Once triggered, they may continue for centuries, long after greenhouse gas concentrations are stabilized, and cause irreversible impacts on ice sheets, global ocean circulation and sea-rise."

In the United States, a sea-level rise would result in increased coastal erosion, flooding and the risk of storm surges, particularly in Florida and much of the Atlantic coast.

This report follows one published last month in Shanghai which predicted that global temperatures could rise by as much as 5.8C over the next century. It said there was clear evidence that industrial pollution,

including emissions from cars, was to blame. The third volume, on solutions, will be released next month.

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LETTERS

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Friday, February 23
Dear everyone,

I just saw the following item in Bob Park's WHATSNEW column. His ears are quicker than the Mail!!

COLD FUSION? SUPREME COURT GIVES IT THE COLD SHOULDER.

Last fall, the US Patent Office denied a "cold-fusion" patent to Mitchell Swartz, on the grounds that it lacked "operability" (WN 10 Nov 00). Despite testimony by cold-fusion gurus, a federal appeals court upheld the Commissioner of Patents, ruling that the patent failed to convince sensible people that the idea could work. Undeterred, Swartz appealed to the US Supreme Court. The highest court in the land is unlikely to review the case, which has the effect of upholding the appeal court ruling. After twelve years, cold fusion still has trouble being taken seriously.

Scott Chubb

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MEETINGS
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Seminar listing

Courtecy of Matt Aldissi
fractals@infobridge.com

VIIIth International Seminar on
The Technology of Inherently Conductive Polymers
June 18-20, 2001

Queen's Landing Inn & Conference Resort,
Niagara-on-the-Lake, Ontario, Canada
Contact Information: Dr. M. Aldissi, Advanced Polymer Courses,
Tel: 813-854-4332, fax: 813-854-5596
email: fractals@infobridge.com,
web site: www.conductivepolymers.com

Thank you for your help.
Matt Aldissi

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SPACE PHYSICS CONFERENCE 2001

Thanks to Toby Grotz for sending us this information.
Conference On Space Physics
www.tewari.org

November 9 - 11, 2001
Karwar, Karnataka, INDIA

CALL FOR PAPERS AND INVITATION

Paramahamsa Tewari and the Scientific and Spiritual Research Council (SSRC) invite researchers, engineers, physicists, and lay persons to a conference devoted to the topic of Space Physics. Papers are invited to be presented at the conference facilities of the Nuclear Power Corporation of India. Space Physics is defined as the mathematics, physics and experimental evidence that demonstrates that matter is formed from the essence of space itself. Various experimental evidence

such as the Casmir Effect point to an understanding that the apparent emptiness of space is an illusion.

The term “zero point” energy which refers to the energy density of space, has been shown to be the root cause of inertia and gravitation. In order to bring about a further understanding of the nature of space, the conference seeks to examine the experiments of researchers who have explored the physics of the space and the vacuum. These include the conference host, Paramahamsa Tewari, former Director of the Nuclear Power Corporation of India, and former Project Manager of the Kaiga Project, Dr. Shuiji Inomata, Electrotechnical Laboratory, Ministry Of International Trade And Industry, Japan, Bruce dePalma, homopolar generator researcher and originator of the term "N-Machine", Dr. Stephan Marinov, Assistant Professor of Physics Sofia University, Physical Institute of the Bulgarian Academy of Science, and editor of Deutsche Physik, Dr. Harold Aspden, Professor of Physics, European Director of patents for IBM, and many others. Abstracts may be sent to the following address:

SPG CONFERENCE 2001
Scientific & Spiritual Research Council
Conference Organizing Committee
P.O. Gotegali - 581 317
Karwar, Karnataka, INDIA

Webmasters: Please copy this page and add to your web page with a link to www.tewari.org.

Transportation
Book flights from the departing destination to the city of Goa, India. Goa is located south of Mumbai on the west coast of India. Goa is a resort destination with many hotels and beaches. For those traveling long distances, especially from North and South America, it will be necessary to stay overnight in Mumbai before taking the next day flight to Goa. Staying a day in Mumbai is a good way to catch up with jet lag. (Mumbai is now the official name given to the area the English named Bombay.) From the airport in Goa, transportation will be provided to the conference site and hotel. Busses will leave on a periodic basis for the 1.5 hour ride to Karwar, and the ride up the Kali River to the lodging facilities. You must confirm your flight arrival and departures times with the conference organizing committee. Send details of arrival and departure times to the following address:

SPG CONFERENCE 2001
Scientific & Spiritual Research Council
Vinodini Nivas
P.O. Gotegali - 581 317
Karwar, Karnataka, INDIA

Lodging

Lodging and meals will be included with the Registration Fees. Donations to help cover other costs will of course be gladly accepted and should be made payable to the Scientific and Spiritual Research Council. Foreign registrants will be lodged in the Kaiga Guest House until full. Thereafter accommodations will be provided in local hotels.

Travel tips for India

Clean water is available in bottles in every location travelers will normally encounter. Danger from diseases such as malaria in this part of India is rare. Even during the monsoon season next to the river there are few mosquitoes. In the drier season there seem to be no more or less. Citronella oil in a spray bottle can be applied to uncovered areas especially at night if there is concern. There are also traditional medical malaria preventatives that should be obtained before departing for India.

Visas must be obtained for travel in India. Make sure to have your passports properly prepared well in advance. US Visa application forms can be downloaded and printed out from the Web.

Eating in India is a treat. Food is prepared in accordance with a Vedic Science that is over 10,000 years old. In India eating is part of Ayurvedic Medicine. In order to assure proper health while traveling, the use of digestive aids with each meal will prevent problem from those not accustomed to the local cuisine. A digestive aid with amylase, protease, and lipase will help with normal digestion. For those who eat meat an extra boost from a betatine HCL supplement may be in order. To promote and maintain intestinal health use a supplement that contains lactobacillus acidophilus and other organisms. Beware of constipation as that is the first sign that all is not in order. The addition of a mild herbal laxative to your travel kit is always recommended.

Suggested Travel agents
The best airfares are expected to be available by the 1st of March 2001

Royal Wings Travel
1-800-346-7898
www.royalwings.com

HK Travel
Riverdale, Georgia
1-770-907-3666

1211 Kirkwood Drive
Fort Collins, Colorado 80525
wireless@rmi.net
970-493-2429

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