

Basic facts about GLOBAL WARMING

We live on a planet warmed by the Sun, which is an average star. It gives off heat due to its enormous mass and the resulting nuclear reactions. But this heat is not as great as you might suppose, if there were no greenhouse gasses we would be about 32 degrees colder than we are.

We know this because we have sensors on the moon and on many satellites, neither have any gasses and their average temperature is about 32 degrees colder.

So what keeps us warm ? Why does it change ? The heat output from the Sun is very constant, but sunspots may cause greater heat to reach us, the earth's tilt causes the seasonal variation, the planet's orbit is not circular so we get a little less heat the further away we are, but none of these causes are adequate to explain a difference of 32 degrees.

The 32 degrees difference is due to the effect of greenhouse gasses.

A greenhouse gas allows high frequency sun rays to pass through the atmosphere but resists the passage of lower frequency light reflected from the earth thereby trapping heat close to the earth's surface. The most important is water vapor, including clouds responsible for about two thirds of the warming. Scientists are not unduly worried about this because water falls out of the sky within two weeks of being formed. However most of the rain usually falls in the same areas and hardly any in desert areas. So if the temperature goes up more water evaporates from the oceans and falls in the same places causing floods. In desert areas there may be a little increase in rainfall but the increased temperature will evaporate this away so the desert area continues to increase.

I hope this is obvious to us all, but I have to say it because there are too many people prepared to give misleading arguments so they can continue to

use coal and oil. It should be realized that the world's climate throughout its 4.5 Billion years history is largely dependent on the density of greenhouse gasses.

THE ICE CORES

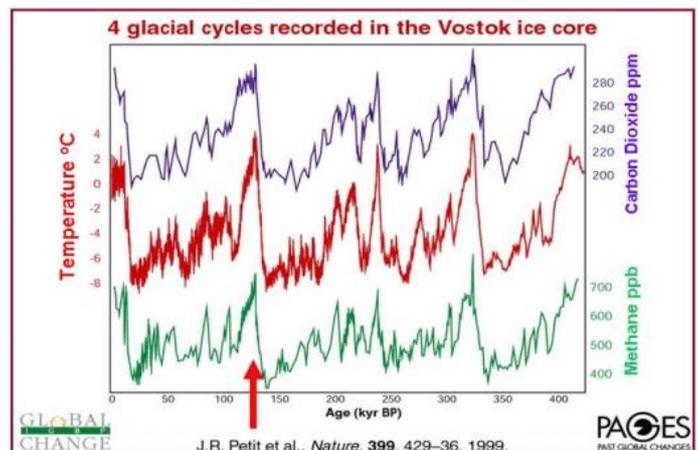
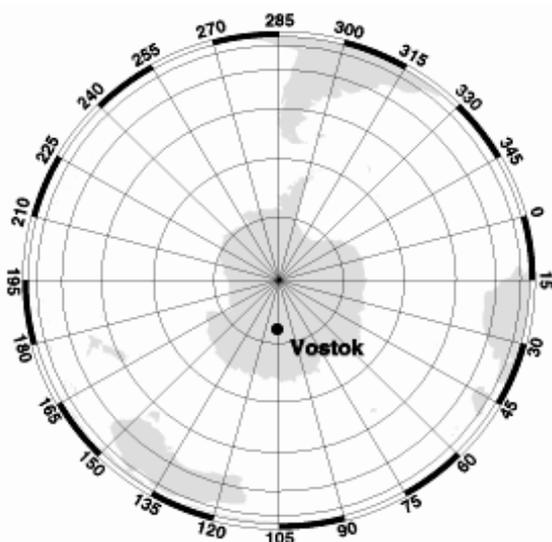
The Vostok Graphs, which gives the results of the ice core drilled at Vladivostok In January 1998. Russia, the United States, and France collaborated drilling the ice core to a depth of 3,623 metres. One of the greatest achievements that man has made.

Every year a very light covering of snow falls in arctic areas trapping small bubbles of air and dust as it falls. The cores are cut into thin slices, the outer parts removed to prevent contamination. The ice is crushed and the gasses extracted and measured directly. The temperature is measured from the oxygen and hydrogen isotopes.

The four peaks of the ice ages are shown about 100,000 years apart. Looking at the left of the temperature (red) curve you will see a fudgy level area, this is the 11,000 years of the current period. The temperatures shown are average arctic covering the whole of the arctic and spread their effects into Mediterranean areas. Tropical areas will still be hot allowing the development of life.

The graph shows that all three track together so there has to be a close relationship between temperature and CO₂.

Methane has a small effect but this will increase if the clathrates melt (frozen methane and ice under the Russian tundra and arctic seas). When we put more CO₂ into the atmosphere the temperature must go up, this may be offset by melting ice or warming the



ocean but warm it must, it has no other option, it is the nature of the beast. The more fossil fuels we burn the higher the temperature will rise. The ice cores have been subjected to many tests and examinations and no fault has been found with the process. Analysis has taken place at different labs, examining ice from different locations, extracted with different methods, these all give very similar answers, indicating that what they are measuring is real and accurate.

The opponents of global warming do not dispute these graphs; they use them to ask questions. They point out that the temperature rises first and the CO₂ level may not rise until 800 years later, therefore they say mankind is not responsible for the rise. Scientists will say there are many causes for the initial rise such as the Malenkov cycles (distance from the Sun) but the CO₂ level will be the main cause responsible for the bulk of the warming.

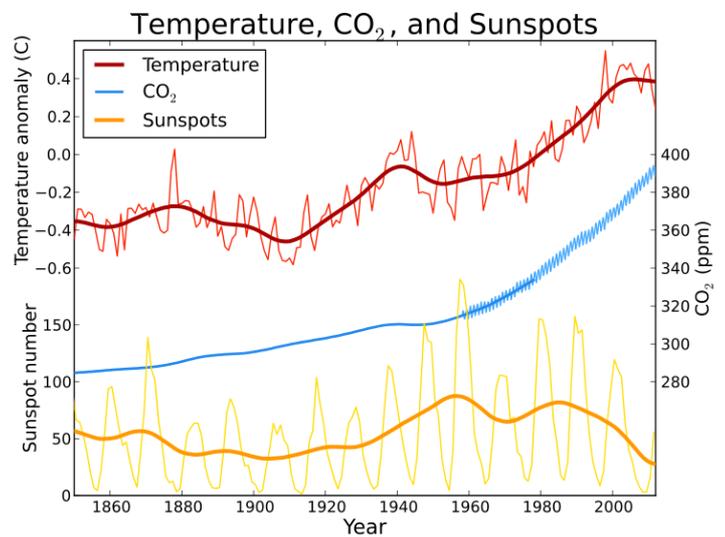
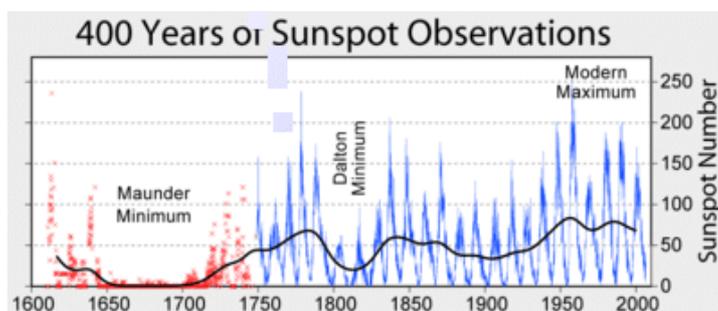
Another argument is that the sun shines on the land and germinates a forest. The mighty trees grow for 800 years sucking up CO₂, then they crash and decay giving up their carbon so it is natural that the temperature rise comes first. Mankind is reversing the system by putting up CO₂ first, this is still the cause of warming, man is still the cause and we are responsible.

Others have raised the claim that the most recent 10 years are colder. Looking at the graph above right there does seem to be a flattening of the curve during recent years with a droop in the final reading. But if you look to the left of the graph you will find other times when the temperature went down but following readings went up again.

Examination of sunspots show that there are fewer of them recently, some scientists predict that we are in for a Maunder minimum, (graph bottom of page) a period of 30 years when there were hardly any sunspots. The Thames froze over during winter, huts were erected and a faire held on the frozen surface. Iceland became ice bound. Some will argue that we should continue to burn fossil fuels to keep us warmer during the Maunder Minimum but this might be fatal when sunspots come back to normal. However many scientists find little correlation between sun spots and temperature and as yet there is insufficient evidence about the numerous small effects that could affect temperature to compare with the overriding effect of greenhouse gasses.

THE RESULTS OF NO ACTION

Hot weather kills off old people and young babies, global



warming will increase these numbers. The ice will melt and the sea levels will rise, up to 190 feet, flooding low level land where our towns are situated. It may take over 1000 years before this becomes apparent. Glaciers will recede further putting at risk areas in India and China dependent on the melt.

The oceans are showing an increase in temperature and level, confirming the predictions of the models. By 2100 the oceans can rise by one metre and would continue to rise even if emissions ceased.

Some fish species living off Queensland now live off Victoria, others will not be able to move fast enough. The barrier reef is under serious threat.

and animals tend to move higher up the mountain to find cooler weather and are under threat of extinction; as observed by Professor Tim Flannery.

The oceans absorbed 50% of the CO₂ we have emitted in the past 200 years, making the water more acidic. Surface waters are now 30% more acidic than at the beginning of the industrial revolution. We humans have acidified all the world's oceans, even if we stopped now it would take tens of thousands of years to restore normal levels. The oceans are approaching the limit of acidity because the ocean is now taking up 25% of the emissions a fall of 5%.

Agriculture will suffer from droughts and floods. The alleged plant growth due to more CO₂ cannot happen without water and research shows that vegetables grown in high concentrations of CO₂ become leathery.

Storms, floods, droughts and fires will increase in severity causing much property damage. As the frequency of the storms increase so we will be less able to repair the damage before the next storm takes place, insurance will fail and the whole financial system currently unstable, because of high debt and unemployment, will collapse.

Many have reported the intensity of the fires. Black Saturday will be remembered. Recently due to the efficiency of the fire services major disasters have been avoided, but increasing temperatures may result in such fierce fires that no fire service will be able to cope.

The Mauna Lao observatory announced on 9th May 2013 that a CO₂ level of over 400 ppm (parts per million) was

recorded. The rate of increase from 2012 to 2013 was 3 ppm, surpassing any rates recorded for the past 65 million years. Other observatories have confirmed these results. Efforts to reduce emissions have not succeeded.

SOLUTIONS

Last month I gave you a paper which made suggestions as to what should be done. These were –

“So what needs to be done?”

1 Every industry, business, home must prepare a plan to convert their processes to solar or other alternative energy.

2 Because these plans will require a lot of new metal work then all metal smelters must be converted to solar working. Solar metal smelters have been built in France.

3 Large scale concentrating solar electrical generators must be built. This could be a field of mirrors on top of the coal yards of existing steam plants focused on a receptor tower to supply steam, or it could be a dedicated new plant situated where the sun is stronger. It is a disgrace that no such plant exists in Australia when we have as much sun as California and Spain.

4 All new cars must be built to run on batteries. Existing cars and vans could have their engines removed and an electric motor fitted, batteries could be fitted in a trailer.

5 Petrol stations to be converted to charging stations. (Note- *Not all cars need to be charged at home. Cars should be designed with a slide in/ slide out tray so your discharged battery could be exchanged for a recharged battery in seconds, enabling you to continue your journey across Australia. The battery could be owned by the charging station which would halve the cost of a new car.*)

6 Cement manufactures should convert to making green cement as is made in Victoria.

7 Coal exports to be controlled by a reducing cap.

8 Solar plant to be exported around the world and the UN should be asked to encourage all countries to adopt similar policies.

9 Trade with nations that are not adopting these principals should be taxed and subsidies given to trade with nations that are actually cutting emissions.

10 Retrain coal miners as Solar technicians.

11 More research for batteries and collectors.”

As far as I know none of these suggestions are being pursued with sufficient vigor to change the reality. While the government has enacted a carbon tax which may coax some manufacturers to take appropriate action, more positive steps should be taken. While many solar panels and wind generators are being installed in South Australia, no major large scale concentrating plant is being built. Electricity consumption was reduced 4% last year but this is thought to be due to householders economising in view of the tax and in view of the world economic down turn.

General Motors Holden continues to make large cars because they can't make a small car to compete against

the imports. Even their electric car, the Volta, has a small fossil engine for use when the battery is discharged. They continue to make powerful cars which may be efficient but still use more oil at high speed and are sometimes uncontrollable by the average driver. They do not appear to have considered the proposals to form a company to own and charge batteries and to provide an emergency delivery of batteries. The cost of the hire charge plus the cost of the charge would not be very different from a tankful of fuel today and in 20 years' time the oil production will be reduced by half and the cost will rise.

COAL Two Views

1 The Australian Coal Association reports “that Australia is the world's leading coal exporter. During the last 10 years black coal exports have risen more than 50%. “We export black coal to Japan, China, Korea, India, Taiwan - in that order, and the remaining 12% goes to 28 other countries. Demand in China and India is expected to increase dramatically during the next 10 years. Australia was the only one of the world's 33 advanced economies to grow in 2009, the worst global recession since the Great Depression. This was due to the continued export of coal. The importance of coal in the economy is also indicated by its increasing share of Gross Domestic Product.”

2 The following is extracted from “Coal curse: the black side of the subsidised resources boom” 4 July, 2012 by Professor Stuart Rosewarne and Linda Connor “The benefits must be weighed against many hidden costs, including government subsidies to the industry; the damage to people's health and the environment; and lost opportunities because of failure to develop other industries, including “clean” energy. Subsidies include coal terminal leases and the provision of infrastructure to transport coal to electricity generators or to port loading facilities. Federal government funding for the Hunter Valley Corridor Capacity rail upgrade totals \$855 million. The whole mining industry receives a subsidy in the form of a tax rebate on the diesel that fuels the trucks and machinery. This \$2 billion a year subsidy amounts to \$87 annual contribution from every Australian. On a global scale, coal is the leading source of greenhouse gas emissions and thus the main industrial source of climate change. The burning of coal for electricity has grown faster than any other source of greenhouse gas emissions, and accounts for more than half of world emissions from stationary sources.

“Though the costs to Australian and global society are huge, with such generous government subsidies, it is not surprising that production of coal-fired power shows no signs of abating, and likewise the continued growth of coal mining and coal exports. The coal curse has descended on Australia, and without urgent action we can only look forward to a mounting burden of illness, environmental degradation, economic dislocation, social disintegration and a warming planet.”

CONCLUSIONS

It will be seen that the problems of this world is not only about Global Warming but also about overpopulation, about a money system which sucks money away from the poor, on excessive demand on resources, on pollution of all kinds. Mankind has little hope of avoiding these problems. New inventions are always possible; Mr Ronald Ace has invented a flat panel solar trap. He claims an electricity cost of one or two cents per K/w hour - if true it will mean the end of the coal and oil empires. There are critics who believe that whatever it is, will be unworkable, that the full scale model will cause fires, that coal and oil will find a way of destroying it.

But we will still have problems, it was the power of coal and oil which made the population explosion possible, in future it may be the power of the solar trap which will increase the population and with it pollution, demand on resources, etc.. The only cure for this is to find two Prophets who can influence the two major religions to adopt the practices of family planning and contraception.

The worst about this situation is the foolishness of man. The Deniers, who have not followed through their ideas to the inevitable end. The great ice ages occurred naturally. Possibly due to the growth and decay of vegetation, if it proceeds to higher temperatures the ice will melt and the sea level will rise making billions homeless. They may flee to the hills but few will find shelter or sufficient food there.

If we are pitched into an ice age then the tropical areas will provide sustenance but they are already overcrowded.

Then there are those who do not see that the present industrial set up, who's main product is CO₂, is bound to finish in disaster. They include industrialists, the deniers and media who do not publish the facts, the right wing think tanks, who fund vocal climate skeptics. (see Christian Science Monitor 15/2/2012)

We need to stop burning fossil fuels on a worldwide basis by switching to alternative energy. An enormous job but it will provide work for all. It will need anew financial system without debt and with more money in the public sector. The old system is tottering on the brink of collapse, is corrupt, allowing The richest 1% of people in the world to receive as much as the bottom 57%" (Milanovic 2002, p.50 World Bank)

The only possible remedy is to stop burning fossil fuels and this can only be done by convincing all those industrialists, the media, the leaders of finance and religion that reform is necessary.

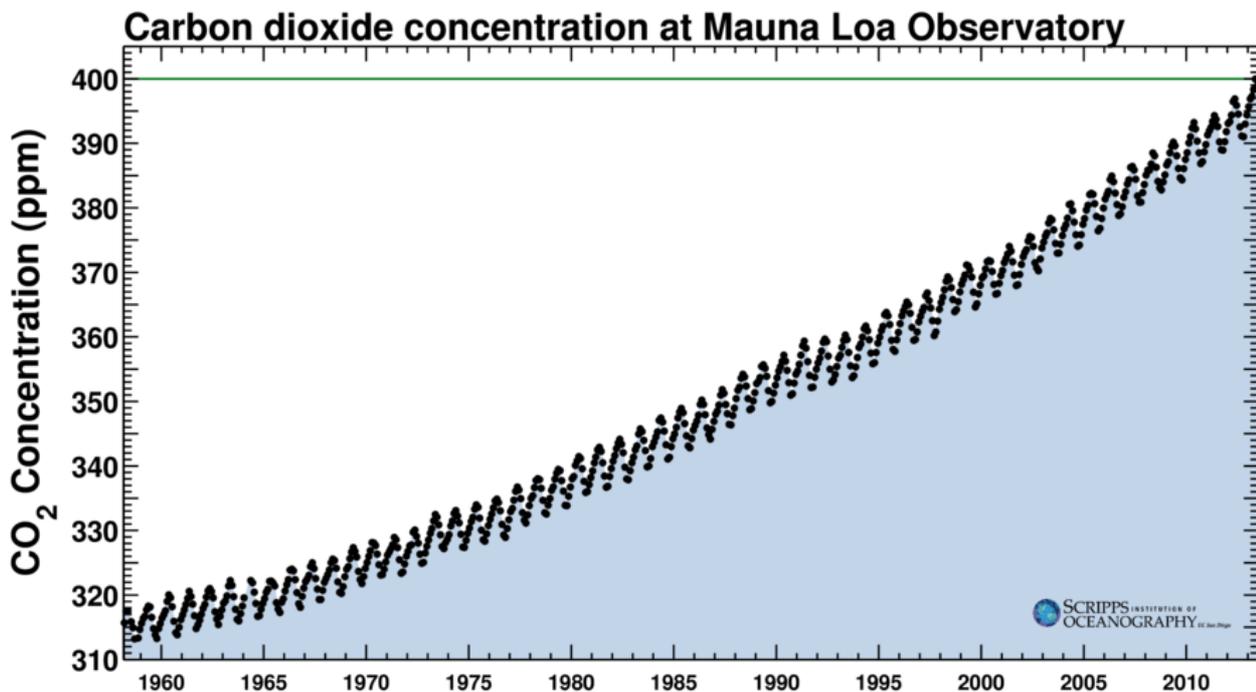
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For the first time in human history, hourly carbon dioxide (CO₂) levels have risen above 400 parts per million (ppm), and the rate per annum has risen to 3 ppm. This is believed to be the highest rate for the last 3 to 5 million years. Confirmed by other observatories these figures show that we are burning too much coal