## Friends of Science – Talking Points

Ken Gregory April 25, 2012 Revised March 17, 2013

Global surface temperatures have been declining at 0.03 °C/decade from January 2002 to February 2013. The IPCC projected the temperatures would be increasing at 0.20 °C/decade.<sup>1</sup>

A uniform 1.8% change in water vapour has the same greenhouse effect as a 10% change in CO<sub>2</sub>.<sup>2</sup>

Water vapour has declined 13% at 8 km altitude since 1960 in the tropics allowing heat to escape to space.<sup>3</sup>

A change of water vapour at 8 km altitude has 30 times the greenhouse effect as the same change near the surface.<sup>4</sup>

The IPCC computer-modeled temperature trend at 8 km altitude from 1979 to 2009 is about 4 times higher than observed.<sup>5</sup>

The climate model sea surface warming trend at the equator from 1981 is 6 times higher than measured by satellites.<sup>6</sup>

The greenhouse effect has increased 0.2% since 1960.

Satellite data shows that low clouds increase with warming, reflecting sunlight which reduces the initial warming.<sup>8</sup>

The climate models' average estimate of climate sensitivity to CO<sub>2</sub> emissions is six times higher than estimates based on observational evidence.<sup>9</sup>

A correlation of the Sun's activity to temperature shows the Sun has caused at least 75% of the warming of the last century. 10

Solar activity in the last half of the 20th century was the highest in 8000 years. 11

Correcting the surface temperature record for the effects of urban development would reduce the warming trend over land from 1980 by half.<sup>12</sup>

NASA applies an urban warming correction to their temperature index in the wrong direction in 45% of the adjustments which increases the urban warming effect.<sup>13</sup>

The 2007 IPCC report contains references to 5,587 non-peer-reviewed literatures, including newspaper articles and Greenpeace documents.<sup>14</sup>

Ice core data shows that CO<sub>2</sub> changes follow temperatures changes by about 800 years, so CO<sub>2</sub> cannot be a significant cause of climate change. <sup>15</sup>

CO<sub>2</sub> is plant food. A 300-ppm CO<sub>2</sub> increase would raise the forest's productivity by about 50%. 16

Sea level rise has sharply decelerated since 2002. Tropical coral islands rise with sea levels and most have not reduced in size over the last century.<sup>17</sup>

Hurricane activity is at a 30-year low.<sup>18</sup>

There has been no trend in droughts or floods with global warming.<sup>19</sup>

Temperature is not a significant factor in the incidence of malaria or other diseases.<sup>20</sup>

The health benefits of a warmer planet are many times greater than any harmful effects.<sup>21</sup>

In Canada, an increase in temperature would significantly increase crop yields and increase the arable area. <sup>22</sup>

Environment Canada plans to restrict CO2 from coal-fired generation of electricity at a cost of \$8.2 billion for no benefit.<sup>23</sup>

The cost of the California Cap and Trade scam is \$450 billion over 10 years. The cost of abating the 1 C° warming by measures as cost-ineffective as California's policies would be \$3,500 trillion, assuming 1 C climate sensitivity.<sup>24</sup>

Britain plans to spend £250 billion on windmills and back-up generators by 2020 to reduce CO<sub>2</sub> emissions, but they cause more CO<sub>2</sub> emissions than electricity generation by gas-fired turbines only.<sup>25</sup>

The wind power industry in Britain is costing over £1000 per year for every household.<sup>26</sup>

In Germany from 2000 to 2007, wind power delivered only 17% of its rated capacity.<sup>27</sup>

Biofuel policies caused 192,000 excess deaths from malnutrition and poverty in the developing world in 2010.<sup>28</sup>

In the US, 25% of the corn crop is turned into ethanol to fuel automobiles.<sup>29</sup>

In Ontario, solar and wind generated electricity cost up to 12 and 3 times that of electricity from natural gas-fired power plants, respectively.<sup>30</sup>

The world spent \$240 billion reducing CO<sub>2</sub> emissions in 2010 and more than \$1 trillion over the last ten years for no benefit while 1.3 billion people live in poverty without electricity. <sup>31,32</sup>

## References:

- 1. HadCRUT3 temperature index, see <a href="here">here</a>. IPCC AR4 WG1 SPM,2007, page 12. See <a href="here">here</a>.
- 2. "The Stable Global Atmospheric Greenhouse Optical Thickness", by F. Miskolczi, August 2010, Energy and Environment, Vol 21, No. 4. See <a href="here">here</a>. See graph <a href="here">here</a>.
- 3. Humidity data from NOAA. See <a href="here">here</a>. See graph <a href="here">here</a>.
- 4. Simulation using HARTCODE. See <a href="here">here</a>. See graph <a href="here">here</a>.
- 5. "Panel and multivariate methods for tests of trend equivalence in climate data series", by R. McKitrick, S. McIntyre and C. Herman, December 2010, Atmospheric Science Letters, Vol 11-4. See here. See graph here.
- 6. IPCC 20C3M/SRES A1B Multi-model mean sea surface temperature (SST) vs Reynolds OI.v2 SST. Data compiled by Bob Tisdale. See <a href="here">here</a>. See graph <a href="here">here</a>.
- 7. "Out-going Longwave Radiation and the Greenhouse Effect", by Ken Gregory, June 2011. See here.
- 8. "Feedback in the Presence of Unknown Radiative Forcing", by Roy Spencer, August 24, 2010, Journal of Geophysical Research. "The Thunderstorm Thermostat Hypothesis: How Clouds and Thunderstorms Control the Earth's Temperature", by Willis Eschenback, 2010, Energy & Environment, Vol. 21, No. 4. Both see <a href="here">here</a>.
- 9. Average climate model sensitivity to double CO<sub>2</sub> is 3.0 C. Several estimates based on observational evidence is about 0.5 C. "The Association of Albedo and OLR with Variations of Precipitation", by William Gray & Barry Schwartz, estimate 0.3 C <a href="here">here</a>; "Out-going Longwave Radiation and the Greenhouse Effect", by Ken Gregory, June 2011, estimate 0.4 C <a href="here">here</a>; "On the Diagnosis of Radiative Feedback in the Presence of Unknown Radiative Forcing", by Roy Spencer and William Braswell, August 2010, estimate 0.6 C <a href="here">here</a>; "On the Observational Determination of Climate Sensitivity and Its Implications", by Richard Lindzen and Yong-Sang Choi, May 2011, estimate 0.7 C <a href="here">here</a>.
- 10. "Phenomenological Reconstructions of the Solar Signature in the Northern Hemisphere Surface Temperature Records since 1600", by N. Scafetta and B. West, November 2007, Journal of Geophysical Research. See <a href="here">here</a>. See graph modified by using the satellite lower troposphere temperatures since 1979 <a href="here">here</a>.
- 11. "The Sun Is More Active Now Than Over The Last 8000 Years", by Sami Solanki et al, October 2004. See here.
- 12. "Quantifying the influence of anthropogenic surface processes and inhomogeneities on gridded global climate data", by R. McKitrick and P. Michaels, December 2007, Journal of Geophysical Research, Volume 112. See <a href="here">here</a>.
- 13. "Correct the Corrections: The GISS Urban Adjustment", by Ken Gregory, June 2008, Friends of Science. See <a href="here">here</a>.
- 14. "Citizens Audit" See <u>here</u>. "The Delinquent Teenager Who Was Mistaken for the World's Top Climate Expert", by Donna Laframboise, See <u>here</u>.
- 15. "Timing of Atmospheric CO2 and Antarctic Temperature Changes Across Termination III" by N. Caillon et al, March 2003, Science, Vol 229. See <a href="here">here</a>. See graphs <a href="here">here</a> and <a href="here">here</a>. and <a href="here">here</a>.
- 16. "Tree and forest functioning in an enriched CO2 atmosphere", by H. Saxe, D.S. Ellsworth, and J. Heath, 1998, New Phytologist 139; Idso and Kimball, 2001. See here.
- 17. "The Dynamic Response of Reef Islands to Sea Level Rise: Evidence from Multi-decadal Analysis of Island Change in the Central Pacific", by Arthur Webba and Paul Kench, May 2010, Global and Planetary Change. See <a href="here">here</a>. See Pacific Ocean graph <a href="here">here</a>, Altantic Ocean graph <a href="here">here</a>.

- 18. The accumulated cyclone energy (ACE) compiled by Dr. Ryan Maue, see graph here.
- 19. "Trends in the Timing and Magnitude of Floods in Canada", by J. Cunderlik and T. Ouarda, 2009, Journal of Hydrology. See <a href="here">here</a>. "Climate Change Reconsidered, Chapter 5", by Craig Idso et al. 2011, Nongovernmental International Panel on Climate Change. See <a href="here">here</a>.
- 20. "Geographic Expansion of Dengue: the Impact of International Travel", by A. Wilder-Smith and D. Gubler, 2008, Medical Clinics of North America. See <a href="here">here</a>. "Malaria in the Debate on Climate Change and Mosquito-borne Disease", by Paul Reiter, April, 2006, US Senate. See <a href="here">here</a>.
- 21. "Causes for the Recent Changes in Cold- and Heat-related Mortality in England and Wales", by N. Christidis et al., 2010, Climatic Change. See <a href="here">here</a>.
- 22. "Climate Change and World Agriculture", by M. L. Perry, 1990. See here.
- 23. "FoS Response to Environment Canada's CO<sub>2</sub> Emissions Reduction Plan", by Ken Gregory, September 30, 2011. See <a href="here">here</a>.
- 24. "Why Mitigating CO<sub>2</sub> Emissions is Cost-ineffective", by Lord Christopher Monckton, April 2012. See <a href="here">here</a>. Costs of \$640 trillion per °F were multiplied by three, the ratio of the IPCC estimate of climate sensitivity of 3 C to evidence based estimate 1 C for double CO<sub>2</sub>.
- 25. "Why the £250 bn Wind Power Industry Could be the Greatest Scam of Our Age", by Christopher Booker, February 2011. See <a href="here">here</a>.
- 26. As 25.
- 27. "The Hidden Fuel Costs of Wind Generated Electricity", by K. de Groot and C. le Pair. See here.
- 28. "Could Biofuel Policies Increase Death and Disease in Developing Countries?", by Indur M. Goklany, 2011, Journal of American Physicians and Surgeons. See <a href="here">here</a>.
- 29. "Killing Biofuels" by Doug L Hofmann, August 2010. See here.
- 30. "McGuinty powers up a compromise on renewable energy plan" by Adam Ranwanski, See <a href="here">here</a>. Ontario pays 13.5 ¢/kWh for wind power, 64.2 ¢/kWh for solar power. Natural gas fired electric power costs 5 ¢/kWh at natural gas cost of \$4/mmbtu, see <a href="here">here</a>.
- 31. "Who's Winning the Clean Energy Race", by the PEW Charitable Trusts, 2011. See here.
- 32. "World Energy Outlook", International Energy Agency, See here.