

Climate models are running too hot

Anthropogenic (human-caused) climate change is a major issue of our time.

Unfortunately, governments and most news media rely on a political organization of the United Nations called the Intergovernmental Panel on Climate Change (IPCC) for assessments about climate science and policy.

The IPCC relies on climate models that assume all the warming recorded by instruments was caused by human activity despite the overwhelming evidence of large and rapid warming and cooling events before humans could have had any effect on global temperatures.

The sun's activity has increased through the 20th century. Its magnetic flux in the 1990s was the greatest of the last 3,000 years. The IPCC falsely attributes natural warming and urban warming to greenhouse gas (GHG) emission warming.

It ignores the compelling evidence of natural climate change before 1950 that correlates well with indicators of solar activity. It ignores the fact that most surface temperature measurements are warmed by the urban heat island effect (UHIE) that warms cities and towns. These effects must be removed from the instrument temperature record to determine the warming effect of human-caused GHG emissions.

Current global temperatures are likely similar to that of the Roman Warm Period (1 – 200 AD) and the Medieval Warm Period (800-1100 AD), but much warmer than the Dark Age Cold Period and the Little Ice Age,

which ended about 1850. The temperature history shows an obvious millennium cycle, which strongly indicates that a large portion of the warming since 1850 was a natural recovery from the Little Ice Age.

The IPCC ignores the evidence that the sun's impact on climate is much larger than what can be explained by the changes of the sun's total heat output.

The conduct of the IPCC in this regard is contrary to fundamental scientific principles. Science requires that theory is tested against observational evidence, and where there is disagreement, the theory must be modified. Natural climate change also includes long-term ocean oscillations, volcanic activity

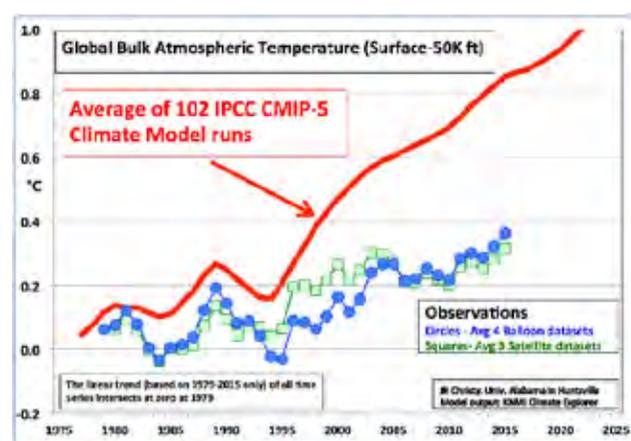
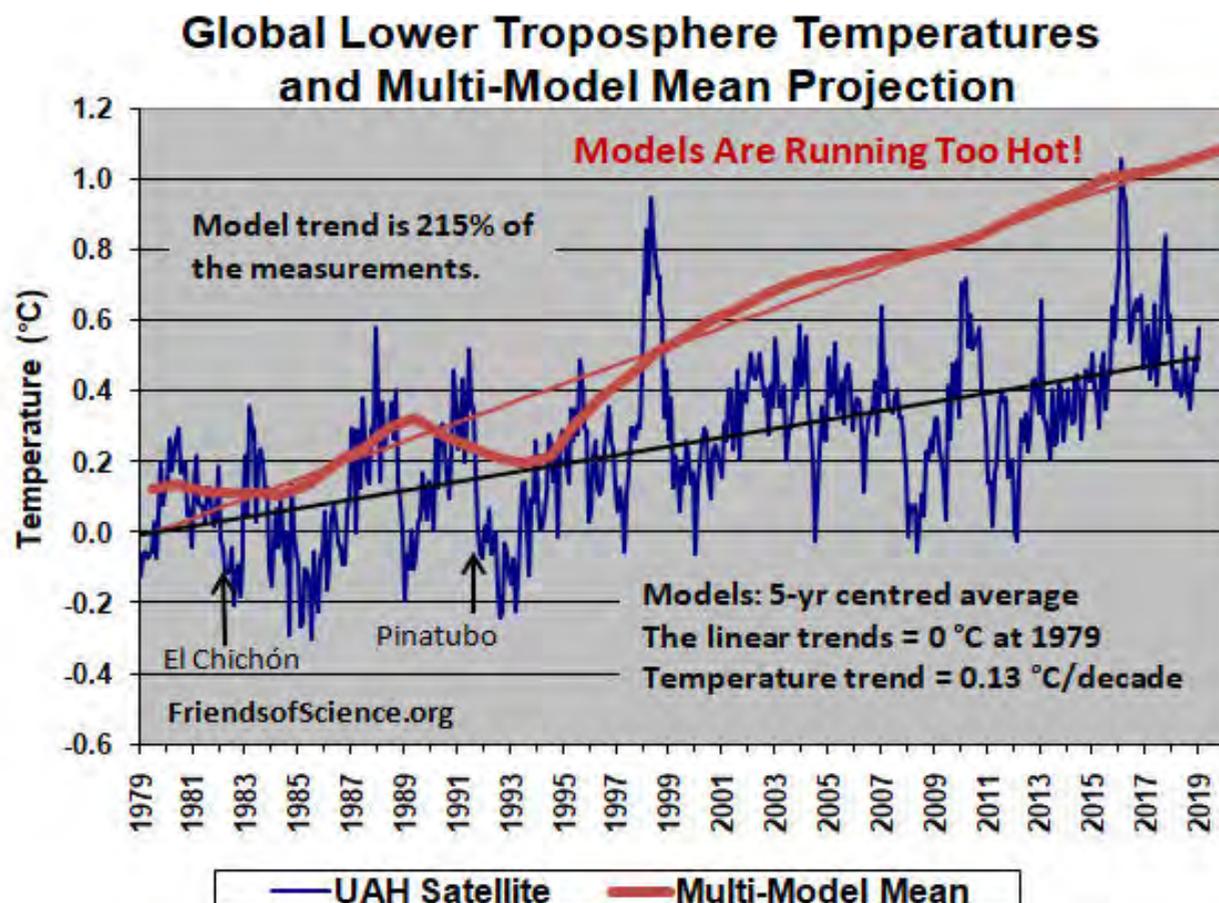
and other processes.

The energy balance study of climate sensitivity to emissions by Lewis & Curry 2018 shows that if all the warming was due to GHG, the expected warming due to all emissions would cause 0.9 C of warming from 2018 to 2100.

Carbon dioxide (CO₂) causes 90 per cent of GHG warming. When the natural warming and the UHIE is accounted for, the effect of CO₂ emissions is projected to cause only about 0.6 C of warming from 2018 to 2100.

The average of the climate models project a warming trend of the lowest part of the atmosphere from 1979 to 2018 that is 215 per cent of the actual measurements, so the models are wrong.

The model trend of the



global bulk atmospheric temperature is 250 per cent of the trends of the weather balloon and satellite data. This is because the models are far too sensitive to greenhouse gases.

The bulk atmosphere warms more than the sur-

face in the models because they increase water vapour, which is a strong GHG, in the upper atmosphere, while the measurements from weather balloons and satellites show declining water vapour.

FUND (Climate Framework for Uncertainty,

Negotiation and Distribution) is an economic model that simulates the welfare impacts of GHG emissions in various regions of the Earth. It shows that Canada's personal wealth, or gross domestic product per person, is projected to increase despite climate change by a factor of 2.5.

Dr. Richard Tol wrote in his book *Climate Economics*, published in 2014, "The impact [in Canada of climate change] is positive throughout the 21st century, as are incremental impacts."

He shows the net impact continually increases to 1.78 per cent of GDP by 2100, equivalent to over CDN\$100 billion benefit per year. The largest benefits for Canada are reduced space heating costs and higher agricultural production. CO₂ is plant food. It helps crops grow faster.

On a global basis, the FUND model calculates that the net annual benefit of GHG emissions from 1900 is around USD\$3 trillion/year at 2100, or 0.85 per cent of global GDP with 1.3 C of warming from 2018. That is, global warming to 2100 is likely net beneficial.

So why are we putting a huge burden on ourselves to prevent a benefit to the extremely wealthy people of the future? If the economic forecasts are correct and future Canadians in 2100 will be 2.5 times wealthier than us today, they can afford to pay for adaptation measures if and when temperatures increase to levels that start to cause damages.

For more information and references, visit <https://tinyurl.com/y22g9ase>.

This ad is approved by Kenneth Gregory, kbgregory32ad@gmail.com.

Alberta's climate plan: A burden with no benefit

Human-caused climate change is a major issue of our time.

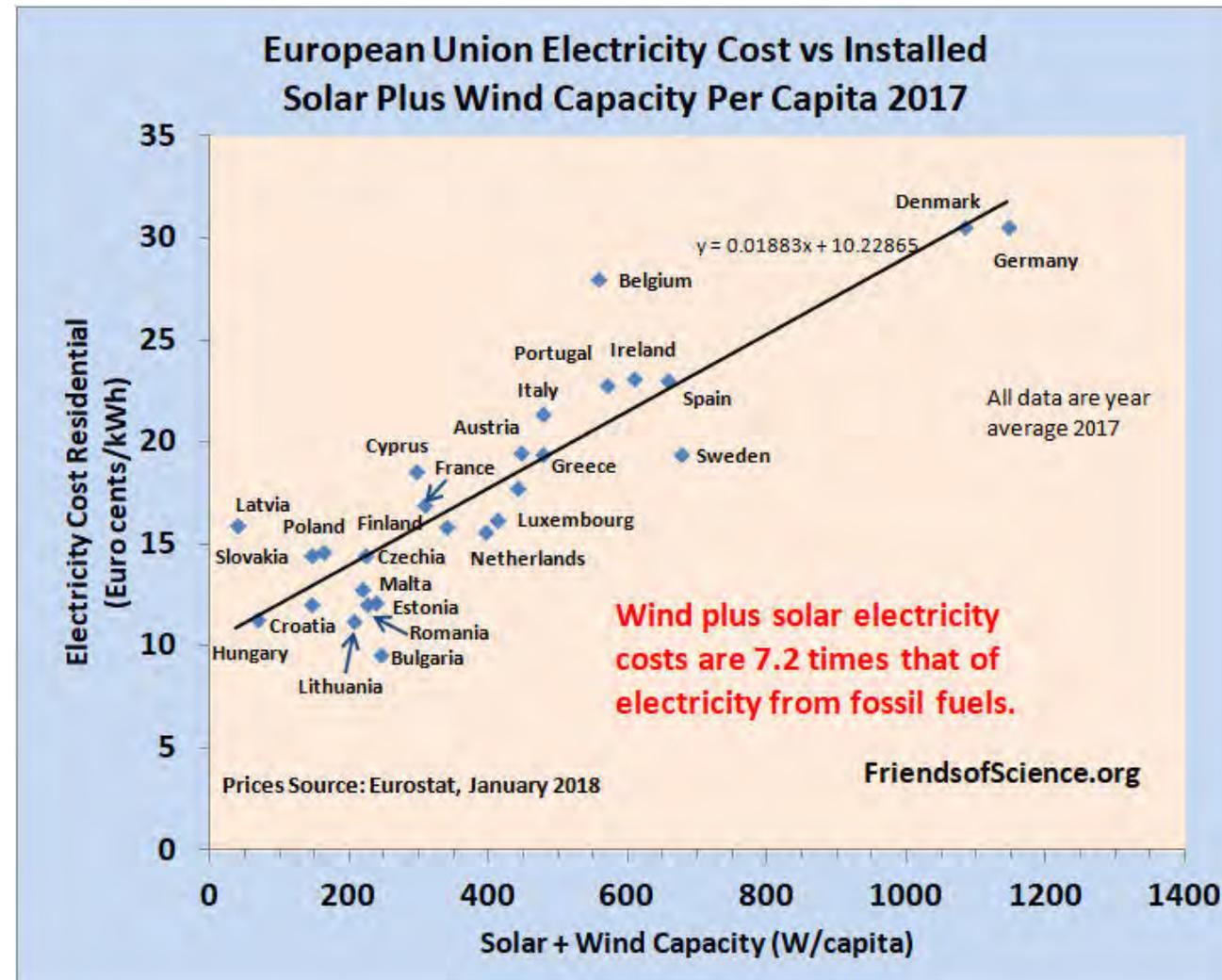
Unfortunately, governments and most news media rely on a political organization of the United Nations called the Intergovernmental Panel on Climate Change (IPCC) for assessments about climate science and policy. The IPCC relies on climate models that assume all the warming recorded by instruments was caused by human activity despite the overwhelming evidence of large and rapid warming and cooling events before humans could have had any effect on global temperatures.

The climate models average trend of the global bulk atmospheric temperature from 1979 to 2016 is 250 per cent of the trends of the weather balloon and satellite data, so the models are wrong. The IPCC falsely attributes natural warming and urban warming to greenhouse gas (GHG) emission warming.

When the natural and urban warming are accounted for, an energy balance calculation of climate sensitivity implies that continued CO₂ emissions will cause only about 0.6 C of warming from 2018 to 2100.

FUND (Climate Framework for Uncertainty, Negotiation and Distribution) is an economic model that simulates the welfare impacts of GHG emissions in various regions of the Earth. It shows that Canada's personal wealth is projected to increase from 2018 to 2100 by a factor of 2.5 despite climate change.

Dr. Richard Tol, an author of the FUND model, wrote in his book *Climate Economics*



published in 2014, "The impact [in Canada of climate change] is positive throughout the 21st century." He shows the impact continually increases to 1.78 per cent of GDP by 2100, equivalent to more than CDN\$100 billion per year.

The Alberta government relied on a report produced by the United States government to develop its climate plan. That report utilized three economic models to estimate the social cost/benefit of CO₂ emissions (SCC). Two of those models have insignificant benefits of CO₂ fertilization of plants

and they fail to account for adaptation. They also assume that all warming is harmful, which clearly is untrue. The FUND model does include CO₂ fertilization and attempts to account for adaptation. They ran all three models using climate sensitivities to GHG from climate models that are far above recent empirical estimates. These factors vastly increase the SCC estimates.

The Alberta government projects that its climate plan, which includes shutting down coal-fired power plants and imposing carbon taxes, would reduce atmo-

 Global warming up to 2100 is likely net beneficial.

spheric CO₂ concentrations by 2030 by 0.026 parts per million, thereby reducing global temperatures by 0.00007 C, which is insignificant.

EDC Associates Ltd.

published a study of the potential impact on Alberta's electricity market of Alberta's climate plan. The study finds that the cumulative cost of electricity from 2017 to 2030 is expected to increase by \$3.3 billion to \$5.9 billion, depending on policy choices. The CO₂ reduction would cost \$420/tCO₂, which is 14 times the current carbon price.

The Alberta government plans to replace inexpensive, reliable and dispatchable electricity from fossil fuels with extremely expensive and unreliable electricity from wind and solar elec-

tricity, which requires near 100 per cent backup with natural-gas-fired power plants.

The extreme variability of renewable power requires the backup power plants to rapidly ramp their power output up and down to offset the variable output of wind and solar power. This enormously increases the cost of the backup power and causes increased CO₂ emissions per unit of electricity produced.

In Europe, electricity prices are highly correlated with the amount of solar and wind on the grid, with prices in Denmark and Germany about three times higher than in Hungary, which has little wind and solar power. The relation implies that the cost of wind and solar power in Europe is 7.2 times the cost of power from fossil fuels.

On a global basis, the FUND model (Julia version) calculates that the net annual benefit of GHG emissions and warming from 1900 is around USD\$3 trillion/yr at 2100, or 0.85 per cent of global GDP with 1.3 C of warming from 2018. That is, global warming up to 2100 is likely net beneficial.

So why are we putting a huge burden on ourselves to prevent a benefit to the extremely wealthy people of the future? If the economic forecasts are correct and future Canadians in 2100 will be 2.5 times wealthier than us today, they can afford to pay for adaptation measures if and when temperatures increase to levels that start to cause damages.

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CO₂ fertilization and warming benefits us all

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It ignores the compelling evidence of natural climate change before 1950 that correlates well with indicators of solar activity.

The temperature history shows an obvious millennium cycle, which strongly indicates that a large portion of the warming was a natural recovery from the Little Ice Age that ended about 1850.

Several studies of urban warming show strong correlations between warming and indicators of economic development. These effects must be removed from the instrument temperature record to determine the warming effect of human-caused GHG emissions.

When the natural warming and the UHIE is accounted for, an energy balance calculation of climate sensitivity implies that continued



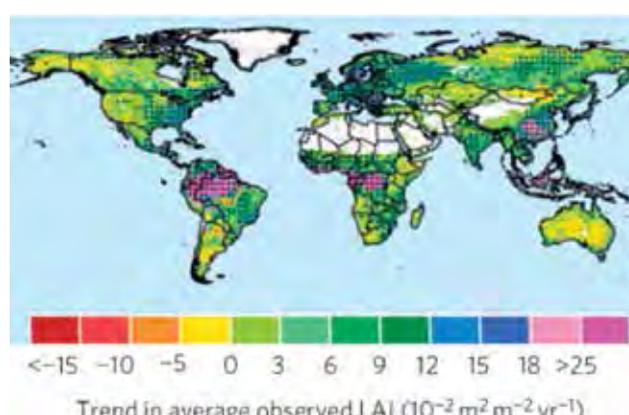
An eldarica pine tree growing under ambient carbon dioxide, left, and with an extra 150, 300 and 450 parts per million of CO₂, from left. SUPPLIED

CO₂ emissions will cause only about 0.6 C of warming from 2018 to 2100.

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FUND (Climate Framework for Uncertainty, Negotiation and Distribution) is an economic model that simulates the welfare impacts of GHG emissions in various regions of the Earth. It shows that Canada's personal wealth is projected to increase from 2018 to 2100 by a factor of 2.5 despite climate change.

Dr. Richard Tol, an author of FUND, showed in his book *Climate Economics* that the beneficial impact of climate



change in Canada continually increases to 1.78 per cent of GDP by 2100, equivalent to more than CDN\$100 billion benefit per year. The largest benefits are reduced space heating costs and higher agricultural production.

The Alberta government projects that its climate plan, which includes shutting down coal-fired power plants and imposing carbon

taxes, would reduce atmospheric CO₂ concentrations by 2030 by 0.026 parts per million. This would reduce global temperatures by 0.00007 C, which is insignificant.

EDC Associates Ltd. published a study that estimated the cumulative cost of electricity from 2017 to 2030 will increase by \$3.3 billion to \$5.9 billion due to the climate plan.

Study of satellite imagery shows that the world has greened due to CO₂ emissions.

Warming and CO₂ fertilization benefits the agriculture industry as CO₂ is plant food and warming increases the area of arable lands. A study of CO₂ fertilization of crops shows a global economic benefit over the 50-year period 1961-2011 of USD\$4.0 trillion. The annual benefit in 2011 (2018 dollars) was USD\$176 billion.

Study of satellite imagery shows that the world

has greened due to CO₂ emissions. A study published in 2016 shows a widespread increase of growing-season leaf area, with the CO₂ fertilization effect explaining 70 per cent of the observed greening trend. The greening over 33 years is equivalent to adding a green continent two-thirds the size of the mainland United States.

The Canadian death rate in January is more than 100 deaths/day greater than in August. A study published in 2015 examined 74 million deaths worldwide from 1985 to 2012 and found that the ratio of cold-related to heat-related deaths was a whopping 17 to 1. It appears that most health benefits of warming are not included in economic models of climate change.

On a global basis, the FUND model (Julia version) calculates that the net annual benefit of GHG emissions and warming from 1900 is around USD\$3 trillion/yr at 2100, with 1.3 C of warming from 2018. That is, global warming to 2100 is likely net beneficial.

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