

December 2020

## **FoSS MEMBERSHIP QUARTERLY NEWSLETTER No. 68**

**Dedicated to Providing Insights into Climate Science and Policies**

### **PRESIDENT'S MESSAGE**

Wow what a year it has been. Started out well enough, with so much promise and then it fell apart. Dealing with the repercussions of the COVID lockdowns has been quite the experience. We had to cancel our Spring Event, stop in person meetings and cancelled our May AGM. Considering all the challenges, we have had a good year and we were able to accomplish much:

#### **17<sup>th</sup> Annual Climate Science Event:**

Our spring dinner event was going to be our largest ever and was almost sold out when we had to cancel it. We had hoped that it was only postponed for a few months – but we were wrong. So we chose to try something totally new and host the speakers online.

On December 8<sup>th</sup> we hosted our first speaker Donna Laframboise. Donna did a fantastic job describing the pervasive climate of intolerance that does not permit any dissent from what the Climate Activists preach.

We had many people participate from around the globe and submit questions for the live Q&A which was an enjoyable and enlightening interaction. The entire recorded event is available on-line to watch.

Members have **FREE access to view** – others can [buy a ticket](#).

Our next event is January 19<sup>th</sup>, 2021 at 7pm with Dr. Roy Spencer and “The Most Important Reasons Why There’s No Climate Emergency”. [Tickets](#) are available for non-members.

We had some technical difficulties caused by bandwidth issues and we expect to have it rectified in January. Should you have issues with the live event in January please let us know, but remember that you will be able to watch the full event online anytime later.

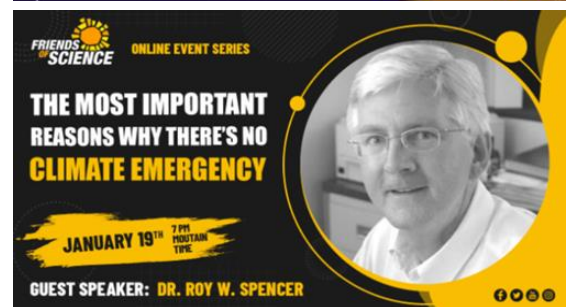
Traditionally we run the Spring Event at break-even as a way to thank our members and not as a fundraiser as many think. Continuing with this mindset, we resolved to provide our members with premium online content for FREE. Non-members may also watch for a nominal C\$15 viewing fee.

The online world provides us with the advantage of allowing members or paid viewers unlimited viewing from any one location. So host those climate parties - if you are allowed of course. Don't forget that you still have time to purchase viewing tickets for friends, family and frenemies as Christmas gifts.

#### **Annual General Meeting (AGM):**

Due to the lockdowns we discovered that our 18 year old bylaws did not plan for virtual meetings or voting. Then to meet Service Alberta's calendar year end requirements for AGMs we had to significantly change the format during lockdowns. On December 10<sup>th</sup>, a couple of days before further substantial restrictions were to start across Alberta, we succeeded in completing a condensed “emergency” AGM devoid of any socializing or refreshments. We have now updated the bylaws so we can function virtually. Going forward we will be hosting more electronic meetings providing all of you the ability to attend and provide your feedback. We also successfully aired our first live stream meeting on YouTube. On December 22<sup>nd</sup>, 2020, we sent

**Investigating the Science of Global Climate Change**



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members an email that summarized content we could not present at the shortened AGM. This “year-end” package included links to Michelle’s “Year in Review” [video](#) - about eighteen months actually, the [slides](#) from the video, a report of all our [blog posts](#) and the 2019 summary of our [funding sources](#).

### Donation Update...

Your generosity in this crazy upside down world has been outstanding. However, we are still struggling. As you will see below in the fundraising committee section, our operational funds “fuel” gauge tells us that we find ourselves again with only five months of operational funds. Basically we are funded to the end of May. Please see the fundraising section for details on our financial status and our future fundraising goals.

### Membership Renewals:

Did you get an email reminding you that your membership is up for renewal? If so, I sincerely hope that you have renewed or will do so soon. If you did not receive an email – *do not worry* - it means you are paid up and are fine for at least another year. Do not forget though, that Christmas is a great time to give new memberships to friends and loved ones.

### Why do we need Memberships and Donations?

Simply, these are our only sources of funding that allow us to keep doing what we do. Please see Michelle’s Breaking News below for all the exciting ways we put your money to work.

### Sponsorships:

We would love if you could consider becoming a sponsor for the society. Our imminent need is support for our new series of climate science speaker evenings. We have several scientists for what we will be billing as the *CLINTEL CLIMATE SCIENCE SERIES*. We just need the funding to make it happen. Steady secured annual revenue from devoted supporters would definitely go a long way to alleviating our constant financial struggles. Please contact us if you would be interested in becoming a sponsor.

### A little preventative *paranoia* might be valuable:

I am sure you’ve heard of several non-conformist sites being banned on social media. We have been very concerned about the possibility that this could happen to us. Especially troubling has been the possibility of losing our library of YouTube videos. I am happy to report that we have successfully duplicated the entire video library on a new site named aptly LBRY. We will be running both YouTube and LBRY in parallel. LBRY is a little different in that you can also access content from their app which you need to download from [lbry.com](#). Similar to YouTube, LBRY allows access to content from your web browser, and specifically for our videos, please use either [lbry.tv/@FriendsOfScience](#) or [odysee.com/@FriendsOfScience](#).

### What is the climate alarmism end game?

[Central Bank Green Dictatorship: Follow Hjalmar Schacht, and Greta Thunberg Will Not Be Necessary](#) is an article that has nothing to do with Greta – her name is just a proxy for climate alarmism – but is a very good, albeit long, article that explains what the real reason behind Greta’s alarmist handlers is. Spoiler alert - you likely already know – but it’s always good to see it from another source. Two thirds of the way into the article, is a section on the **Green Death** where you will read that Mark Carney and friends want “*to force financial and business investment to abandon all industry related to fossil fuel production, its use for power and energy, its use in industrial and chemical processing. And compel that investment to go instead into backward solar and wind energy technologies; vast digitally-run “smart” power grids; huge battery blocks to store electricity produced intermittently and inefficiently; relatively primitive agriculture with no livestock; livestock food substitutes; “green” indoctrination films, games and simulations; robot cars and trucks, etc., etc.*” A few paragraphs down we are reminded that Carney and his cabal are the same happy group that are deploying the “Great Reset” to get us “*to zero carbon, save the planet and damn the people—using the “great pandemic emergency” and rushing it through so fast that governments and constituency organizations at any level cannot stop it.*” We’ve all known this is not about CO<sub>2</sub> or melting ice or polar bears or storms but about something financially motivated. Now we can confirm that we are living through an historic take over by the banksters to effectively establish a global banking dictatorship.

### Looking forward to 2021 or not?

The world has definitely changed in 2020 and mostly not for the best. The “Climate Change” fighters are not letting up. [Fight climate change like we battle COVID-19, says Paris Accord's chief negotiator](#) does not bode well for us. Lockdowns and house arrest will definitely be their tools to force us to stop travelling or doing

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anything. Many unreasonably applaud as their freedoms are curtailed and their livelihoods are destroyed in the name of health and safety. The response to this emergency is unprecedented. I fear we have been relentlessly brainwashed by ENGOs and the media into believing that urgent, expensive and disruptive action must be taken to prevent the end of the world. This constant fear mongering has seemingly primed populations to accept loss of civil liberties when a more imminent threat occurred. Will everyone happily accept the same impositions in the name of Climate Change? We have much to do in 2021 if we are to confront disinformation, the rejection of scientific findings and the negative uses of technology.

I close with sincere wishes from all of us to all of you for a Very Merry Christmas and a significantly Merrier and Prosperous New Year.

Andrew Bonvicini, P. Geoph.  
President, Friends of Science

## POLITICAL DEVELOPMENTS

### Hydrogen: Fuel for a Fantasy Future

International enthusiasm for the hydrogen economy has never been stronger – not because of any recent technological innovation – but because in the rush to “net zero” hydrogen is seen as a carbon-free energy source. Last June at a [meeting](#) of G20’s energy and environment ministers in Japan, Fatih Birol, head of the International Energy Agency (IEA) introduced a report prepared for the G20 at the request of Japan, and titled [The Future of Hydrogen](#). In the report’s overview Dr. Birol states: “Hydrogen is today enjoying unprecedented momentum. The world should not miss this unique chance to make hydrogen an important part of our clean and secure energy future.” In September, speaking about the emerging hydrogen sector, Dr. Birol [urged](#) Europe not to repeat the same mistakes it made by allowing Chinese firms to dominate the global solar panel market. Instead, Europe should be manufacturing electrolyzers to manufacture hydrogen and pushing down the costs involved.

The IEA is not alone in promoting hydrogen. In 2018 the UK’s Climate Change Committee (CCC) issued a report [Hydrogen in a Low-carbon Economy](#) finding that hydrogen is a credible option to decarbonize the UK energy system – providing there is government support. The CCC followed up with a 2019 report, [Net Zero: The UK’s contribution to stopping global warming](#), that recommended a significantly low-carbon hydrogen economy to meet the challenges of industry, peak power, peak heating, heavy goods vehicles and shipping, thereby reducing their emissions.

The Global Warming Policy Foundation’s John Constable rebutted both the IEA and the CCC in his report [Hydrogen: The once and future fuel?](#) Dr. Constable notes that hydrogen production as a replacement for conventional energy sources (e.g., natural gas) is only possible through imposition of an artificial externality, such as a carbon price. Further, hydrogen has practical difficulties, is an inefficient energy carrier and has more safety concerns than natural gas. Locally manufactured hydrogen once made up ~50% of coal or “town” gas used from the late nineteenth century to the 1960s and 1970s in the UK. Once natural gas became widely available it replaced town gas because it was cheaper, safer and could be distributed over longer distances through higher pressure pipes. Hydrogen was forced out from the UK energy supply by overwhelming economics, and its re-introduction would be counter-economic.

In Alberta the provincial government released its [Natural Gas Vision and Strategy](#) on October 6<sup>th</sup>. This document strategy forecasts large scale hydrogen production with carbon capture and storage (CCS) deployed in various commercial applications by 2030, with exports of hydrogen and hydrogen-derived products across Canada and globally by 2040. [Alberta’s Industrial Heartland](#) (the hydrocarbon processing region NE of Edmonton) has set up a [Hydrogen Task Force](#) to develop a framework to implement a hydrogen economy in that region. Canadian Energy Systems Analysis Research (CESAR) has published a [report](#) asserting that Alberta can lead the transition to a net-zero Canada, while re-energizing its economy. The report claims that Alberta can make “carbon-free” hydrogen at a lower cost than any country in the world, except Russia.

On December 11<sup>th</sup> Environment and Climate Change Canada announced its latest climate change policy statement, [A Healthy Environment and a Healthy Economy](#), that promised to introduce “*Canada’s Hydrogen Strategy, which sets out a path for integrating low emitting hydrogen across the Canadian economy.*” However, the policy statement attracted more attention because of its proposed increase in the federal carbon tax by \$15/t each year after 2022, reaching \$170/t in 2030.



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The policy statement's promise was fulfilled by a December 16<sup>th</sup> [news release](#) wherein energy minister Seamus O'Regan launched the government's [Hydrogen Strategy for Canada](#), "an ambitious framework that seeks to position Canada as a global hydrogen leader, cementing this low-carbon and zero-emission fuel technology as a key part of our path to net-zero carbon emissions by 2050." This 116-page document sees hydrogen as holding "the potential to decarbonize many sectors of Canada's economy, including resource extraction, freight, transportation, power generation, manufacturing, and the production of steel and cement," as well as "generating more than 350,000 high-paying jobs nationally." The document's Vision for 2050 includes (executive summary, p. XVIII):

- Up to 30% of Canada's energy delivered in the form of hydrogen.
- Canada to be one of top 3 global clean hydrogen producers, with a domestic supply >20 Mt/year.
- Established supply base of low carbon intensity (low CI) hydrogen with delivered prices of \$1.50-\$3.50/kg (currently \$5-\$12/kg). [Using hydrogen's energy content of 142 MJ/kg these delivered prices work out to be \$11-\$25/GJ, or \$40-\$90/MWh. The current Alberta natural gas [price](#) is ~\$2.50/GJ.]
- >Five million fuel-cell electric vehicles (FCEVs) on the road.
- A nationwide hydrogen fueling network.
- >50% of energy supplied today by natural gas to be supplied by hydrogen through blending in existing pipelines and new dedicated hydrogen pipelines.
- Up to 190 Mt-CO<sub>2</sub>e annual emissions reduction.

Often, reports promoting hydrogen, like some of those described above, refer to it as an energy *source*, but it's really an energy *carrier* that has to be manufactured, like electricity. There are three currently feasible ways of manufacturing it:

- **"Grey" Hydrogen** is the result of a process known as [steam methane reforming](#) (SMR) in which methane (CH<sub>4</sub>) from natural gas reacts with high-pressure steam in the presence of a catalyst, thereby emitting 6 tonnes of CO<sub>2</sub> for every 1.1 tonnes of hydrogen obtained. [Inputs are 2.2 tonnes of methane, 4.9 tonnes of water and 6.3 MWh (22.7 GJ) of heat, i.e., 15% of the energy value of the hydrogen output.] This is how ~75% of the annual global production of 70 million tonnes of hydrogen is made today. Currently the dominant uses of grey hydrogen (as well as "black" hydrogen from coal or crude bitumen) are industrial – oil refining and the production of ammonia, methanol and steel.
- **"Blue" Hydrogen** is the grey variety combined with CCS (sometimes referred to as carbon capture, utilization, storage, or CCUS) to reduce the CO<sub>2</sub> emissions by 70%-90%. Obviously, this requires some form of tax or regulation to make blue competitive with the grey. The [IEA Report](#) contains a chart showing 2018 costs for producing grey and blue hydrogen (called "no CCUS" and "with CCUS" in that report) for five regions of the world. According to this chart, blue hydrogen costs ~50% more than grey. Blue is the "carbon-free" type of hydrogen that CESAR refers to in its Alberta report. However, *Hydrogen Strategy for Canada* uses the term "low CI" hydrogen instead. The low CI standard is 60% below that of grey hydrogen, or 36.4 gCO<sub>2</sub>/MJ (p. 36).
- **"Green" Hydrogen** is produced by electrolysis of water using wind or solar electricity (or hydropower where available, and possibly nuclear power). The process requires 9 tonnes of water for every tonne of hydrogen obtained (*Hydrogen Strategy for Canada*, p. 22). Wind or solar-made hydrogen is the enthusiasts' gold standard, as there are supposedly no CO<sub>2</sub> emissions (ignoring the fuels needed to mine and manufacture the wind turbines, solar panels and associated electrical infrastructure, as well as disposing of the turbines and panels at the ends of their ~20-year lives). As the IEA's [Future of Hydrogen](#) report notes, less than 0.1% of global dedicated hydrogen production today is by electrolysis.

The current enthusiasm for hydrogen stems from an obsession with achieving "net zero" by 2050, not from any technical or economic advantages of hydrogen over current energy sources, in particular natural gas. Moreover, transforming our existing economy to a hydrogen one would bring significant disadvantages, including:

- Any method of producing hydrogen wastes energy, compared to using conventional energy sources such as hydrocarbons, hydropower, nuclear, or even wind and solar. Thus, hydrogen energy will always cost more.
- Transforming to a hydrogen economy would require a combination of subsidies, regulation and taxation. However, *A Healthy Environment and a Healthy Economy* allocates only \$1.5 billion in a *Low-carbon and Zero-emissions Fuels Fund* to increase production of low-carbon fuels, such as hydrogen.

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- Injecting hydrogen blends into existing natural gas networks, particularly high-pressure transmission lines, brings the issue of embrittlement (*Hydrogen Strategy for Canada*, pp. 60-61), meaning that a large portion of Canada's pipeline network would have to be abandoned or replaced. As p. 62 of *Hydrogen Strategy for Canada* notes, blending low carbon intensity hydrogen into Canada's natural gas networks is the “*most economically challenging*” issue, given today's low-cost commodity prices and no resulting efficiency improvement.
- If hydrogen is going to replace natural gas for domestic/consumer use there are significant safety issues, including detectability, wider range of flammability and greater propensity to leak. In addition, appliances and end-use equipment will require upgrading or replacement (*Hydrogen Strategy for Canada*, p. 61).
- While *Hydrogen Strategy for Canada* provides no figures for what it would cost to build the infrastructure needed to produce 20.5 Mt/year of hydrogen by 2050, Fig. 40 on p. 81 shows the scale of increased energy use and the production infrastructure needed, depending whether the hydrogen is green or blue.

The future set out in *Hydrogen Strategy for Canada* is truly a fanciful one. The strategy proposes integrating hydrogen into all parts of Canada's energy system (Fig. 33 on p. 71). This would entail: a massive infrastructure creation and increase in energy use just to produce the hydrogen; replacing (“repurposing”) or abandoning large parts of the existing natural gas networks, as well as constructing new ones, to transport it; building new storage facilities; and developing new infrastructure for hydrogen's end uses. The reason for all of this: To reduce CO<sub>2</sub> emissions by 190 Mt/year (worth \$32 billion at the 2030 carbon price of \$170/t) – and to virtue signal.

Ian Cameron  
Director, Friends of Science

## SCIENCE NEWS

### Trudeau's Crazy Climate Plan

At a December 11, 2020 [news conference](#) Prime Minister Justin Trudeau unveiled his government's new plan for Canada to reduce greenhouse gas emissions by 2030. The \$15-billion plan includes the federal price on carbon rising to \$170 per tonne by 2030. He has pledged Canada to achieve net-zero greenhouse-gas emissions by 2050. This plan is anti-science and anti-economics. The plan relies on climate models that [overestimate warming](#) in the tropical mid-troposphere, 1979 – 2016, by a factor of 2.7 (the average warming trend of 23 climate models is 0.27 °C/decade while the trend of the measurements is only 0.10 °C/decade). At the Earth's surface as well, the climate models [overestimate warming](#) by a factor of 2. Climate models tell us nothing about how sensitive the climate is to greenhouse gas emissions as they are based on wild guesses of cloud effects and upper atmosphere water vapour. Contrary to climate models, the greenhouse effect of water vapour is to [reduce the warming](#) caused by human generated emissions. The real-world long-term climate sensitivity determined by [empirical evidence](#) is about one-third of the average of the climate models.

The carbon tax is based on economic models that project more warming than predicted by climate models, and much more than reality. Some of the economic models fail to include the benefits of CO<sub>2</sub> fertilization of plants and crops. They also fail to include mitigation, which makes them overestimate damages vastly. The only major economic model that includes CO<sub>2</sub> fertilization is FUND, but it [underestimates the effect](#) by 30%. Canadian [snowbirds live longer](#) and they have a happy and pleasant time when they go south in the winter. A study 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. Warming is beneficial to human health. A 2 °C increase in temperatures from 2000 would increase global wealth by 1.45%, equivalent to <sup>2019</sup>US\$1.26 trillion according to the FUND model with updated CO<sub>2</sub> fertilization and [energy use](#) estimates. A [study using FUND](#) shows that the global private benefit of the use of fossil fuel at the margin is about <sup>2019</sup>US\$481/tCO<sub>2</sub>. This value will go up dramatically when fossil fuel use is reduced by CO<sub>2</sub> taxes. The cost of [solar and wind electric power](#) in Europe is 5.7 times that from other sources which are mainly fossil fuels. Solar and wind can't replace fossil fuels as they are too variable and unreliable.

### Test of FUND's Temperature Response to CO<sub>2</sub>

[FUND](#) is one of the three most widely cited integrated assessment models used to advise governments about climate change economic impacts and the social cost of carbon dioxide. The simple climate model in FUND is supposed to emulate the response of climate models across a range of climate sensitivities. The

transient climate response (TCR) is defined as the temperature change of a 1% per year increase of CO<sub>2</sub> concentrations at the time when it doubles, which takes 70 years. The equilibrium climate sensitivity (ECS) is the temperature change due to a doubling of CO<sub>2</sub> after allowing the oceans to reach temperature equilibrium. I created a modified FUND model where the CO<sub>2</sub> concentration was increased at 1% per year from pre-industrial levels until it doubled then held constant. All other greenhouse gas concentrations were held constant.

The [results show](#) that when the ECS is set at 1.5 °C or lower in FUND, the temperature increases linearly with time and radiative forcing, then stays constant when the CO<sub>2</sub> values stay constant, so the ECS is equal to the TCR! This implies that the oceans are instantaneously in temperature equilibrium with the atmosphere, with no delay. This is physically impossible! The TCR should always increase with increasing ECS, but in FUND the smallest TCR corresponds to the largest ECS. The TCR decreases with increasing ECS greater than 2 °C. Figure 1 shows TCR versus ECS for the FUND model and 23 climate models. FUND's temperature profile is very incorrect for ECS below 2.2 and above 3 °C. The implication is that the calculated economic impacts are also wrong.

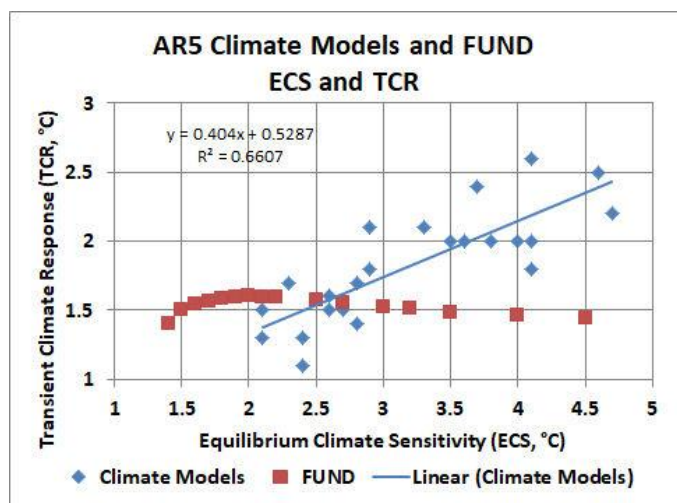


Figure 1

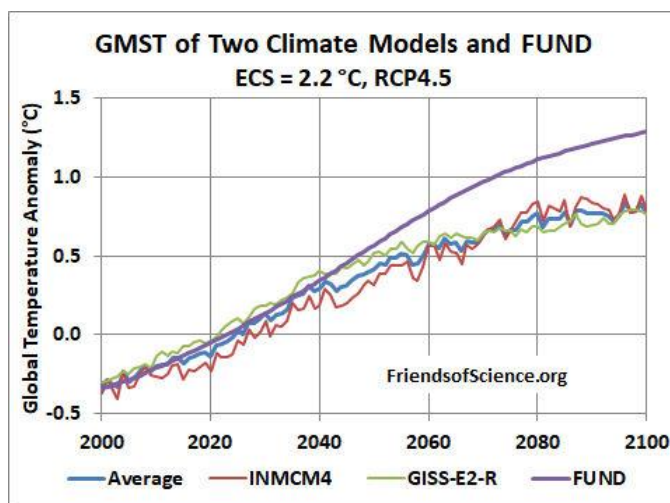


Figure 2

Figure 2 shows the temperature response of FUND and two climate models to the greenhouse gas concentrations of the RCP4.5 ([Representative Concentration Pathway 4.5 Watts/m<sup>2</sup>](#)) emissions scenario with temperatures aligned at year 2000 and the ECS set at 2.2 °C. The FUND model runs too hot compared to the climate models after 2040 and it is 0.52 °C too high at 2100. The ECS is estimated from energy balance to be about 1 °C with the likely range of ECS is 0.76 - 1.39 °C as shown [here](#). In this range the TCR is too high so the calculated damages are also too high.

**Abnormal Climate Response of the DICE Model – a 19 Trillion Dollar Error**

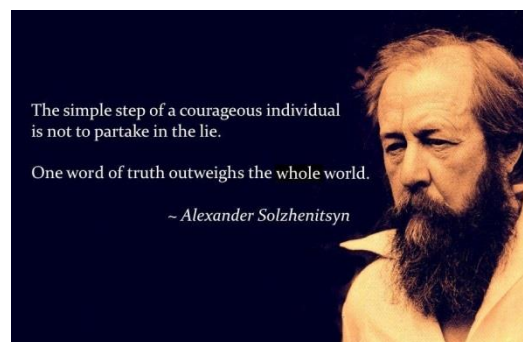
This [article](#) by Nic Lewis examines the climate response of the Dynamic Integrated Climate-Economy (DICE) assessment model to greenhouse gas concentrations. He wrote “*the time profile of its temperature response to forcing is inconsistent with understanding of the behaviour of the actual climate system, as reflected in and simulated by current generation (CMIP5) atmosphere-ocean general circulation models*”. The air temperature response depends on the heat transfer into the ocean layers. DICE assumes two ocean layers. The top ocean layer that is in equilibrium with the atmosphere in DICE is 550 m deep, compared to estimates of 50-150 m based on observations. The deep layer is less than 200 m deep, a small fraction of that in the climate models, and too weakly coupled to the top layer. Lewis wrote “*As a result, DICE significantly overestimates temperatures from the mid-21st century on, and hence overestimates the SCC [social cost of carbon dioxide].*” If the ocean parameters are altered to be consistent with climate models, “*the present value of utility is improved by up to \$19 trillion*”.

Ken Gregory, P. Eng.  
 Director, Friends of Science



## FUNDRAISING COMMITTEE: DONATIONS

Again, we wish to thank all of our faithful and generous financial members and supporters. Without your consistent support of our organization, we would have failed in communicating with the public a long time ago. Now, after 18 years of providing insights on climate and related energy policies, we find that more and more people finally understand and appreciate our efforts as the costs of carbon taxes and wild, green ideologies hit home. Worldwide, our species is entering the year 2021 with unprecedented political, social and financial turmoil. Friends of Science will remain focused on our mandate of publicly communicating the science and the empirical evidence regarding climate change.



In our [September Newsletter](#), we provided our Value Proposition, and we need not reiterate it again other than to state that your financial support is needed more than ever as governments, green crony capitalists and all forms of media misrepresent the truth and steal our freedoms away. The media has clearly chosen to not be in the business of reporting news but to focus on the manufacturing of propaganda as clearly presented by the onslaught of talking heads trotted out as “experts”. You must be aware of this movement away from facts towards editorials and choose your news sources accordingly. Thomas Sowell could not have been clearer when he asked: “*Would you bet your paycheck on a weather forecast for tomorrow? If not, then why should this country bet billions on global warming predictions that have even less foundation?*”

We could not agree more. We do our best with the financial support we receive, but we find ourselves at a crossroad of sorts. We make ends meet by relying on many volunteer hours and often stretching our existing contractors too far. We need to expand our efforts; we need more paid support to assist with proactive research, social media, websites, IT and day-to-day office management. As well we need to increase our visibility by way of new billboard campaigns, producing more high-quality videos and organizing more climate related meetings and debates.

We at FoSS do everything we do because we believe we need to push back and provide the information the main stream media chooses to not report. We must not stop communicating empirical evidence and scientific truth. Stopping would diminish our commitment to the freedom and future welfare of our children, grandchildren and those less fortunate than ourselves.

We have established successful communication strategies and methods over the past 18 years. Please share our content (listed at the end of this newsletter) with friends and family and assist us to grow our audience with your financial support. Please recognize that our two websites ([friendsofscience.org](http://friendsofscience.org) [climatechange101.ca](http://climatechange101.ca)), Facebook, LinkedIn, Twitter, Instagram, YouTube videos, and blog postings require a substantial investment of time and money.

Our financial ask is that you help us increase our annual operating budget. Imagine how much more we could do if we had C\$250,000 of secure annual funding. The next 18 months will be a watershed time as countries across the globe move towards greater totalitarianism.

**Please join the battle in any way you can.**

The future of our countries depends upon people like you – we cannot afford to be complacent, uninvolved or think that your commitment will not make a difference. It is time for each of us to say “WE WILL NOT TAKE IT ANYMORE”.

As you can see our operational budget funding right now will get us through May 2021 but not any further.

**We need you to help us find more members and donors!**

We know these are tough times but we need you to reach out to your friends, tell them the value you receive from our messaging and get them to join.

Have you considered making monthly contributions to Friends of Science? Setting up your recurring donation only takes a few minutes. Please call us at 1-888-789-9597 Ext 2 to join a growing group of monthly donors.



## FRIENDS OF SCIENCE SOCIETY

Contributions can be made at [friendsofscience.org](https://friendsofscience.org) by clicking on “*Become a Member/DONATE*” in the upper right of the home page. The PayPal donation link will allow you to pay with your credit card even if you do not have a PayPal account. Should you experience technical difficulties with online processing, please try turning off any ad blocker as this sometimes interferes with the program and we do not have ads on our site. Otherwise, if you prefer, you may phone us at 1-888-789-9597 Ext 2 to pay by credit card. Alternately, you can mail donations to Friends of Science at the following address:

### Friends of Science Society

P.O. Box 23167 Mission P.O.

Calgary AB Canada T2S 3B1

Toll-Free Telephone: 1-888-789-9597 Ext 2

E-mail: [contact@friendsofscience.org](mailto:contact@friendsofscience.org)

## MEMBERSHIPS

Thank you to our members for your support and helping your society to spread the truth about climate change. Virtually all of our funding comes from our membership; comprised of donations and the modest membership fee. If you have received a notice that your membership is about to expire on December 31<sup>st</sup> please don't forget to renew, we need you.

Since you are a member and you are reading this, we make the leap that you believe in what we do and like how we do it. Our call to action for you is to please [pledge](#) an amount then **circulate this newsletter to twenty or even one of your friends** requesting they match your donation or sign up for a membership.

It is critical that we grow FoSS's ability to get our message out. Times are hard everywhere. We need your help to keep going. Please, help us solve our ongoing funding challenge. If you have constructive comments or ideas which would improve the ability of your society to advance its mandate, we would truly love to hear from you.

## VOLUNTEERING

**Do you want to make a difference? For our voice to continue being heard, we need much more support.** We need you! Please email us at [volunteering@friendsofscience.org](mailto:volunteering@friendsofscience.org), put Volunteer in the subject and tell us what you would like to help with.

**This debate matters, you are making a difference.**

## MICHELLE'S BREAKING NEWS!

### A Christmas Gift for all Canadians

Canadians got a big pre-Christmas shock with the cruel and unusual punishment of a [556% rise in the carbon tax, and other green crony capitalist surprises](#) via the fed's report - “A Healthy Environment and a Healthy Economy” issued for the 5<sup>th</sup> anniversary of the Paris Agreement, that tax paying Canadian workers will have to underwrite.

We wrote this rebuttal – “[A Cruel and Unusual Punishment](#)” – pointing out these measures not only lack common sense but they are unjustified and infeasible on scientific, technical and economic grounds.

### HOLIDAY FILMS FOR YOU!

**SPECIAL FREE FoSS FEATURE – the complete trilogy (June, July, September 2020) on climate change and freedom of speech by award-winning, independent European filmmaker Marijn Poels.**

Poels is renowned for producing over 50 films on social justice in conflict and poverty countries, where most people struggled to have enough to eat. He then decided to investigate the paradigms in Climate Change.

To view:

[MARIJN POELS' DOCUMENTARIES](#) will take you to all three or find them on our [YouTube](#) site.



### A Cruel and Unusual Punishment

Responding to the report:  
A Healthy Environment and a Healthy Economy





## FRIENDS OF SCIENCE SOCIETY

### GLOBAL WARNING

Friends of Science Society is pleased to partner with award-winning Calgary filmmaker Mathew Embry and producer Peter Beyak to offer Video-on-Demand of "Global Warning" – a fantastic documentary that explores the complex climate and environmental community from many different viewpoints – especially as it relates to our hometown of Calgary and the economic and human damage wrought by the Tar Sands Campaign. We are pleased to help break the media blackout that this film received on its release over a year ago. This is sponsored content, so we receive a small portion of the viewing fee.

We also have a number of video interviews with [filmmaker Mathew Embry](#) on our [YouTube](#).

[Watch "Global Warning" now!](#)



### #KidFriendly #ClimateTales for the Whole Family:



[Grumpy the Garden Gnome Stops Boiling Oceans](#)



[The Tiny Rabbit Family "Dad, How Big is the Sky?"](#)

### Latest from Robert Lyman's Desk:



#### EV vs ICE?

The Canadian government has proposed a North America-wide ban on internal combustion engine (ICE) vehicles. Here are Robert Lyman's first two reports of a three-part series that expose the 'green and clean' fantasy of electric vehicles.

[Exposing the EV Fantasy: The Real Cost of EVs](#)

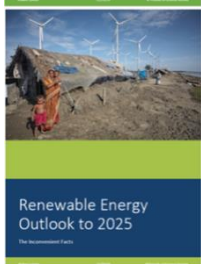
[Assessing the Alleged Benefits of EV's: Exposing the Fantasy – Part 2](#)



#### Pension Plans Go Green – We Provide the Inconvenient Facts

Several Canadian pension giants called for a 'green' recovery in an open letter, dangling their \$1.6 trillion in assets as a carrot. We responded with this [rebuttal open letter](#).

Lyman's report [ballpark estimates the cost of electrification/decarbonization of Canada](#). The numbers are staggering.



The University of Calgary School of Public Policy issued a one page 'paper' frothing about how the IEA reported that renewables costs have gone down, and they will surely take over the market. Robert Lyman reviewed the same material and came to a different conclusion with some [Inconvenient Facts](#) presented in this report.

Many more reports are summarized here: [A compilation of our all time favourites](#)

The ultimate compilation of Lyman's key Green Agenda [reports are on our blog](#).





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