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Dangerous Dreams: What Climate Ideologues Get Wrong on Agriculture and Energy

A PRESENTATION FOR ALBERTA PROSPERITY PROJECT
LEDUC-BEAUMONT-NISKU CHAPTER
MARCH 17, 2023

"THOUGHTS ABOUT THINGS"

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Consider the example of Bill McKibben, who in 1989 published *The End of Nature*, recognized as the first popular book about climate change. In this book and in many subsequent works, he warned that humans had become the "most powerful source for change on the planet," a potentially catastrophic achievement that marked an end to our traditional understanding of nature. Climate change, unlike other environmental problems, was not conventionally solvable; our best hope was to avert the most devastating impacts, McKibben wrote. Yet he was deeply skeptical of technological approaches to the problem such as genetic engineering or nuclear energy (Nisbet 2013).

The only possible path to survival, he argued, was through a fundamental reconsideration of our world views, aspirations and life goals and the creation of a new consciousness that would dramatically reorganize society, ending our addiction to fossil fuels, economic growth and consumerism. In this pastoral future free of consumerism or material ambition, Americans would rarely travel, experiencing the world instead via the Internet, grow much of their own food, power their communities through solar and wind, and divert their wealth to developing countries. Only under these transformational conditions, argued McKibben, would we be able to set a moral example for countries like China to change course, all in the hope that these countries will accept a "grand bargain" towards a cleaner energy path (Nisbet 2013).

Other climate advocates offered a different outlook and set of prescriptions intended to address climate change.

Matthew Nisbet – "Climate Shift"

Basic Science of A Changing Climate Conference, University of Porto, Portugal 2018

https://www.portoconference2018.org/porto-conference-2018.html

Livestock's Role in Climate Change: Do we need a shift of paradigm?

Albrecht Glatzle, INTTAS, Filadelfia, Paraguay albrecht.glatzle@gmail.com

We searched for livestock influence on the climate and found **NONE**

Why?

1) IPCC-defined GHG-dominated global warming forcing components incompatible with reality:

IPCC (2013): Radiative forcing components by far dominated by human GHG-emissions and solar influence on climate change kept tiny. → Impossible to explain the numerous irrefutable prominent preindustrial warm periods.

Reality: 65% of the Holocene was warmer than today, in spite of pre-industrial GHG-levels, as witnessed by tree trunks recovered well above the present day tree lines (Patzelt 2014, and Kullman 2017, supported by Alley 2000, Mangini 2005, Fudge *et al* 2016 and others).

2) CO_2-emissions shown to be beneficial for nature, agriculture and global food security: Desert greening (CSIRO 2013), >Leaf Area Index (Zhu *et al.* 2016), >Gross Primary Production (Campbell *et al.* 2017), >Agricultural yields (Gokiany 2015).

3) No livestock fingerprint in global Methane distribution:

Geographical distribution... of **Methane** (ENVISAT 2003-2005)

of **livestock-born Methane** emissions (Wolf *et al.* 2017).

→ **Livestock emissions insignificant for global Methane budget.**

4) Historical rise of methane in the air not livestock-born:

It is instead predominantly fossil-fuel-born (Quirk 2010, Aydin *et al.* 2011, Schwietzke *et al.* 2016).

5) Severe methodological mistakes in IPCC guidelines:

IPCC (2006) provides meticulously instructions how to estimate total non-CO_2-GHG-emissions from managed ecosystems. Emissions from pristine ecosystems are explicitly not taken into account. However, all agro-ecosystems replaced native ones at some stage in history, which also were sources of considerable non-CO_2-GHG-emissions. Total emissions need to be corrected for these baseline emissions. However, the IPCC considers all farm born CH_4 and N_2O emissions as manmade at a 100% level.

→ **Systematic overestimation of manmade emissions is the consequence.**

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Does "Meat = Heat?" NO!

Albrecht Glatzle

Chapter 5

Domestic Livestock and Its Alleged Role in Climate Change

Albrecht Glatzle

Additional information is available at the end of the chapter

http://dx.doi.org/10.5772/intechopen.80389

Abstract

It is very old wisdom that climate dictates farm management strategies. In recent years, however, we are increasingly confronted with claims that agriculture, livestock husbandry, and even food consumption habits are forcing the climate to change. We subjected this worrisome concern expressed by public institutions, the media, policy makers, and even scientists to a rigorous review, cross-checking critical coherence and (in)compatibilities within and between published scientific papers. Our key conclusion is there is no need for anthropogenic emissions of greenhouse gases (GHGs), and even less so for livestock-born emissions, to explain climate change. Climate has always been changing, and even the present warming is most likely driven by natural factors. The warming potential of anthropogenic GHG emissions has been exaggerated, and the beneficial impacts of manmade CO_2 emissions for nature, agriculture, and global food security have been systematically suppressed, ignored, or at least downplayed by the IPCC (Intergovernmental Panel on Climate Change) and other UN (United Nations) agencies. Furthermore, we expose important methodological deficiencies in IPCC and FAO (Food Agriculture Organization) instructions and applications for the quantification of the manmade part of non-CO_2-GHG emissions from agro-ecosystems. However, so far, these fatal errors inexorably propagated through scientific literature. Finally, we could not find a clear domestic livestock fingerprint, neither in the geographical methane distribution nor in the historical evolution of mean atmospheric methane concentration. In conclusion, everybody is free to choose a vegetarian or vegan lifestyle, but there is no scientific basis, whatsoever, for claiming this decision could contribute to save the planet's climate.

Keywords: greenhouse gas emissions, carbon dioxide, methane, nitrous oxide, agro-ecosystems, deforestation, climate change

Journal of Environmental Science and Engineering B 2 (2014) 586-601
Formerly part of Journal of Environmental Science and Engineering, ISSN 1934-8932

DAVID PUBLISHING

Severe Methodological Deficiencies Associated with Claims of Domestic Livestock Driving Climate Change

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Received: March 04, 2013 / Accepted: March 17, 2014 / Published: April 20, 2014.

Abstract: Reduction of global livestock numbers and meat consumption have been recommended for climate change mitigation. However, the basic assumptions made to come up with that kind of recommendations reveal severe methodological deficiencies: (1) Carbon footprint, emission intensity, and life-cycle assessments of domestic livestock products reported in scientific literature consistently overlooked the necessity of correcting non CO_2 GHG (greenhouse gas) emissions (nitrous oxide and methane) from managed ecosystems for baseline emission scenarios over time and space (pristine ecosystem and/or pre-climate change emissions); (2) Uncertainties associated with the climate sensitivity of anthropogenic GHG-emissions have been ignored; (3) Inconsistencies in the methodological treatment of land use change (deforestation) in emission intensity calculations (per unit of product) can be detected in the literature; (4) The virtual lack of a discernable livestock signal in global methane distribution and historical methane emission rates has not been acknowledged; theoretical bottom up calculations do not reflect the relative insignificance of livestock-born methane for the global methane budget; (5) Potential substrate induced enhancement of methane breakdown rates have not been taken into consideration. A tremendous over-assessment of potential livestock contribution to climate change is the logical consequence of these important methodological deficiencies which have been inexorably propagated through recent scientific literature.

Tropical Grasslands – Forrajes Tropicales (2014) Volume 2, 60−62

Planet at risk from grazing animals?

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www.inttas.org

Keywords: Climate change, global warming, methane, greenhouse gases, biodiversity, grass-fed beef.

Introduction

The famous FAO report "Livestock's Long Shadow" (Steinfeld et al. 2006) and hundreds of subsequent publications blamed domestic livestock, in general, and grassland-based production systems in the (sub) tropics, in particular, of causing serious environmental hazards such as climate change, claiming that 18% of anthropogenic greenhouse gas (GHG) emissions are from livestock, more than from the transport sector. Few reviews challenged this claim, and those that did received little attention from the media. Pitseky et al. (2009) revealed the double standard applied by the FAO in this matter: Whereas for livestock products a full life cycle assessment for GHG emissions was applied, for the transport sector only fuel consumption was taken into account. This striking weakness of the FAO report alone considerably disadvantages livestock husbandry due to a scientifically questionable comparison.

Approach

In this review the most widely spread claims of alleged negative environmental impacts produced by livestock are discussed, partly in the light of lesser known publications, as well as empirical facts and data determined on a global scale, and partly with specific reference to the grazing systems in the Paraguayan Chaco.

Results and Discussion

Critique: "Livestock contributes to climate change"

The basic assumption for human-caused climate change is a noticeable climate sensitivity to anthropogenic GHG emissions, which is supported by the conclusions of the latest IPCC Assessment-Report AR4 (IPCC 2007). There is, however, quite a bit of empirical evidence which casts doubt on these conclusions:

- In Table 2.11of that report, 16 variables are identified as global warming-forcing agents and the level of understanding for 11 of them is specified as 'very low to low'. Yet the IPCC comes up with a 90 to 99% certainty in the results of its models, a conclusion which is logically unacceptable and scientifically indefensible.
- Mean global temperature has not increased in the past 15 years in spite of steadily increasing CO_2 levels in the atmosphere, an observed reality contrary to all model projections published by the IPCC.
- A large number of recently published peer-reviewed papers, such as Kobashi et al. (2011), Esper et al. (2012), Markonis and Koutsoyiannis (2012) and Axford et al. (2013), present evidence of the existence of various eras during the Holocene (since the end of the latest ice age about 12,000 years ago), which were warmer than or at least as warm as the present age (in spite of the pre-industrial atmospheric CO_2 levels in those times).

Even if we ignore these objections and keep assuming a measurable climate sensitivity to anthropogenic GHG emissions, many inconsistencies between the reality and the popular claim "meat = heat" still remain. CO_2 emitted by livestock respiration, forage digestion and the consumption of meat and milk, does not increase atmospheric CO_2 levels, as it is part of the natural carbon cycle. Not a single livestock-born CO_2 molecule is added *additionally* to the atmosphere, as it has previously been captured through photosynthesis. The amount of CO_2 released annually by livestock is offset by re-growing CO_2 assimilating forage. The only sources of *additional* CO_2 emissions caused by livestock husbandry beyond the natural carbon cycle are: (1) fossil fuel consumption during the production process, which is particularly low in grazing systems; and (2) deforestation for pasture establishment, which is partly offset by carbon captured by deep-rooted tropical grasses (Fisher et al. 1994), by persistent charcoal residues from burned wood (Mannetje 2007) and by bush encroachment and for-

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“Let Them Eat Steak” – If they Want.

- **1) IPCC GHG theory is incompatible with reality.**
- **2) CO2 emissions are beneficial for nature, agriculture and global food security.**
- **3) No livestock fingerprint in global methane distribution.**
- **4) Historical rise of methane in the air is not livestock-born.**
- **5) Severe methodological mistakes in IPCC guidelines.**

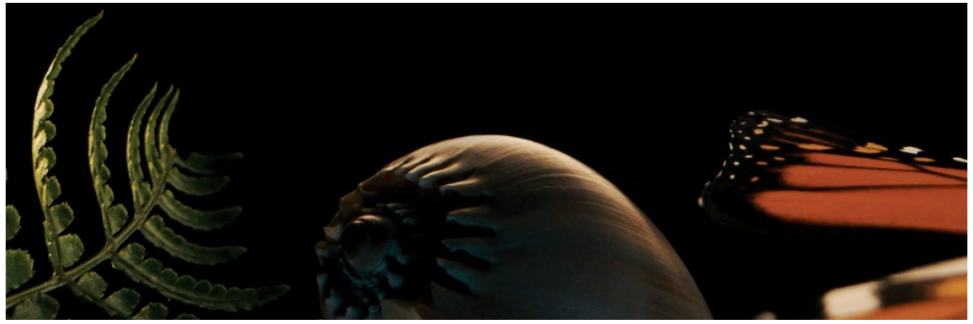
Go Vegan if You Want. It will not 'save the planet.'

- Methodological deficiencies in IPCC and FAO (Food Agriculture Organization) for quantifying AGW CO_2e emissions from agro-ecosystems are fatal errors, inexorably propagated through scientific literature.
- No clear domestic livestock fingerprint, neither in the geographical methane distribution nor in the historical evolution of mean atmospheric methane concentration.
- In conclusion, everybody is free to choose a vegetarian or vegan lifestyle,
- but **there is no scientific basis, whatsoever, for claiming this decision could contribute to save the planet's climate.**

Is Nature Something New? Let's throw money at it!

Government of Canada / Gouvernement du Canada

Nature-based climate solutions



See nature as something new

Human beings have survived on this earth for thousands of years in relative balance with our natural surroundings. However, we are now witnessing a unique period in history when human activities are out of balance with nature, causing planet-wide climate change and biodiversity loss. Increased GHG (greenhouse gas) emissions in the atmosphere are changing the climate of the planet, resulting in extreme temperatures, floods, droughts, wildfires and increasing biodiversity loss.

Nature-based solutions are one of the powerful tools we have to mitigate and adapt to climate change, while at the same time these solutions can provide benefits for biodiversity. For example, large amounts of carbon dioxide are stored in the soil and plant life of forests, wetlands, grasslands and in the oceans. Conserving these carbon-rich ecosystems allows carbon to be absorbed and prevents carbon from releasing into the atmosphere, while simultaneously supporting biodiversity.

https://www.canada.ca/en/environment-climate-change/services/environmental-funding/programs/nature-smart-climate-solutions-fund.html#:~:text=Canada%20is%20committed%20to%20nature,store%20and%20capture%20carbon

Agricultural Climate Solutions

Agricultural Climate Solutions (ACS) is a multi-stream program that will help to develop and implement farming practices to tackle climate change. Through agricultural practices, such as shelterbelts or cover crops, farmland can store carbon and reduce greenhouse gas emissions.

ACS is a program under the more than $4 billion Natural Climate Solutions Fund. Agriculture and Agri-Food Canada (AAFC) is partnering with Natural Resources Canada (NRCan) and Environment and Climate Change Canada (ECCC) to develop projects that invest in natural climate solutions, including NRCan's 2 Billion Trees program and ECCC's Nature Smart Climate Solutions Fund. These solutions will contribute to meeting Canada's greenhouse gas reduction targets and provide benefits towards the well-being of all Canadians.

Agricultural Climate Solutions program streams

Living Labs

Agricultural Climate Solutions – Living Labs, is a $185 million, 10-year program that will establish a strong, Canada-wide network of living labs. Through these living labs, regional leaders will bring together farmers, scientists, and other sector partners to co-develop, test and monitor beneficial management practices on working farms to reduce Canada's environmental footprint and enhance climate resiliency. For more information on this stream, visit The power of farms and Working together.

Nature Climate Solutions for Canada

SCIENCE ADVANCES | RESEARCH ARTICLE

APPLIED ECOLOGY

Natural climate solutions for Canada

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Alongside the steep reductions needed in fossil fuel emissions, natural climate solutions (NCS) represent readily deployable options that can contribute to Canada's goals for emission reductions. We estimate the mitigation potential of 24 NCS related to the protection, management, and restoration of natural systems that can also deliver numerous co-benefits, such as enhanced soil productivity, clean air and water, and biodiversity conservation. NCS can provide up to 78.2 (41.0 to 115.1) Tg CO_2e/year (95% CI) of mitigation annually in 2030 and 394.4 (173.2 to 612.4) Tg CO_2e cumulatively between 2021 and 2030, with 34% available at ≤CAD 50/Mg CO_2e. Avoided conversion of grassland, avoided peatland disturbance, cover crops, and improved forest management offer the largest mitigation opportunities. The mitigation identified here represents an important potential contribution to the Paris Agreement, such that NCS combined with existing mitigation plans could help Canada to meet or exceed its climate goals.

This is the primary research cited for federal 'nature' programs.

https://www.science.org/doi/10.1126/sciadv.abd6034

Filled with Misleading Statements & Faulty Modelling

- My agriculture expert had a scathing review:
- An example of a misleading statement is this:
- "*implementation of the "4R" best practices (right source, right rate, right time, and right place) for use of nitrogen fertilizer*."
- It incorrectly implies this is not being done now which is false.
- " *reduced use of nitrogen fertilizers by switching cultivation from grains to legumes*."
- This is *de facto* a nonsense statement IMHO. Grain (wheat, barley, corn) production is not about to go anywhere for a while in Canada or globally.
- A lot of legumes (soy) are used for animal feed. https://www.fao.org/3/cb9180en/cb9180en.pdf

More Misleading Statements & Faulty Modelling

- ***Increased sequestration of CO2e into agricultural soils from growing additional cover crops in late summer-fall with or after the cash crop, in early spring before planting the cash crop,***
  - Most crop areas in Canada don't have the frost-free growing season to do this.
- ***Reduced tillage Increased sequestration of CO2 in soil carbon from expanded use of no-till or reduced tillage practices in croplands.***
  - Been done for decades .. again it implies farmers are not doing these things now.
- It s so easy to make flippant statements that sound good (feel good) but in reality, are vacuous, misleading or impractical. And note that their claims are based on modelling which is likely horrifically inaccurate.

Conflicts of Interest: Foreign and Domestic Funded Environmental Groups (ENGOs)

Français

Government of Canada / Gouvernement du Canada

Home > Canada Revenue Agency > Charities and Giving > Search > T3010 Registered Charity Information Return

Resources
- Online services
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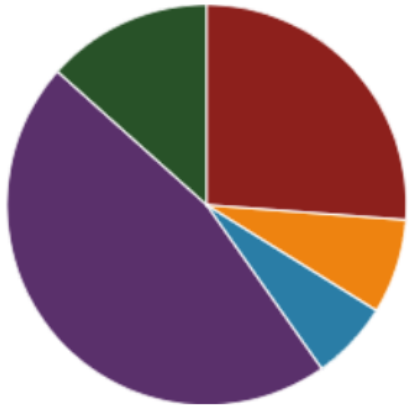
THE NATURE CONSERVANCY OF CANADA - LA SOCIETE CANADIENNE POUR LA CONSERVATION DE LA NATURE — Quick View

Charity's detail page

Registration no.:	**119246544 RR 0001**
Status:	**Registered**
Effective date of status:	**1967-01-01**
Type of qualified donee:	**Charity**
Designation:	**Charitable organization**
Website:	**WWW.NATURECONSERVANCY.CA**

NCC's new Nature + Climate Project Accelerator group embraces innovation in the delivery of nature-based climate solutions. Its mission is to accelerate conservation outcomes by connecting the true value of nature to new sources of financing, principally through carbon offset projects. Proceeds from the sale of carbon credits will be directed to support conservation projects elsewhere in Canada.

Revenue



2022
CRA filing

- Receipted donations $48,504,208.00 (26.19%)
- Non-receipted donations $14,147,652.00 (7.64%)
- Gifts from other registered charities $11,839,458.00 (6.39%)
- Government funding $85,861,181.00 (46.37%)
- All other revenue $24,830,865.00 (13.41%)

Total revenue: $185,183,364.00

"The carbon market is based on the lack of delivery of an invisible substance to no one"

Conning the Climate: Inside the Carbon Trading Shell Game
Mark Schapiro, Harper's Magazine Feb. 2010
http://www.des.ucdavis.edu/faculty/Springborn/courses/Readings/Schapiro%202010%20Harper%27s%20Conning-the-Climate.pdf

Scientific Evidence Confirms; Agriculture Emission Impact is Nominal

Prof. William van Wijngaarden
https://wvanwijngaarden.info.yorku.ca/bio/

William van Wijngaarden

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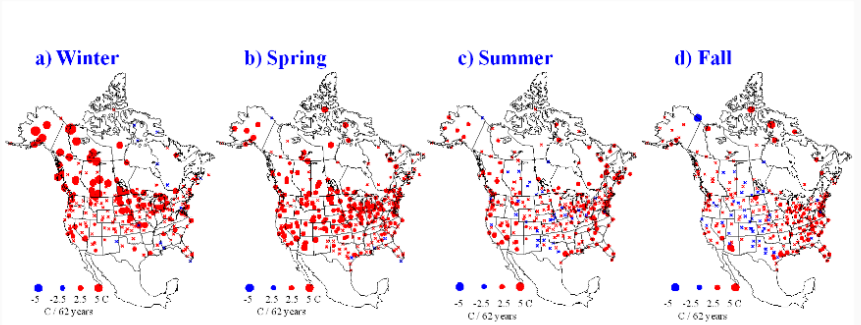
Climate Change Studies



Temperature change in North America during 1948-2010. The largest warming is evident in the Western Arctic and Canadian prairies in winter and spring.

(Click here for Talk.) We have examined archival records of temperature, relative humidity, precipitation, pressure, wind etc. These measurements were made on an hourly or daily basis at over 75 airports located throughout Canada during the last 55

Gas	World Warming	Canadian Contribution	Alberta Contribution
	C/Century	C/Century	C/Century
CO_2	0.85	0.016	0.0052
CH_4	0.085	0.0016	0.00052
N_2O	0.064	0.0012	0.0037
Total	**1.0**	**0.019**	**0.006**

six thousandths

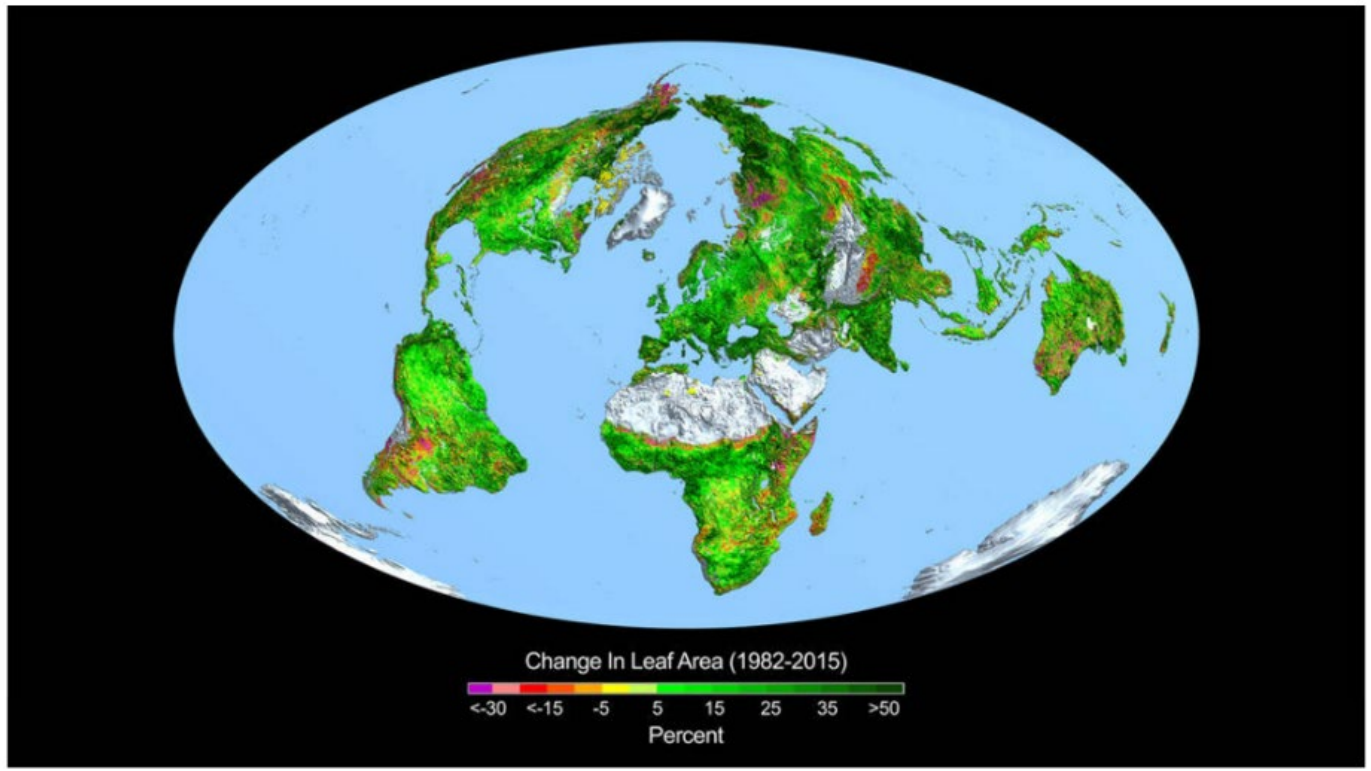
-The world warming column is from: C. de Lange, J. Ferguson, W. Happer & W. A. van Wijngaarden, **2022**, "Nitrous Oxide & Climate", *Atmos. & Oceanic Phys.* arXiv: 2211.15780.

-Canada produced 1.9% of CO_2 according to https://www.worldometers.info/co2-emissions/

-According to Environment and Natural Resources Dept. of Government of Canada in 2019 Alberta generated about 37% of Canada's carbon dioxide equivalent output.

-For simplicity, we assume same emission fraction for CH_4 and N_2O as for CO_2

CO2 Benefits Us - Greening the Earth. Says who? Says NASA.



This image shows the change in leaf area across the globe from 1982-2015.
Credits: Boston University/R. Myneni

https://www.nasa.gov/feature/goddard/2016/carbon-dioxide-fertilization-greening-earth

What of Environment vs Energy?

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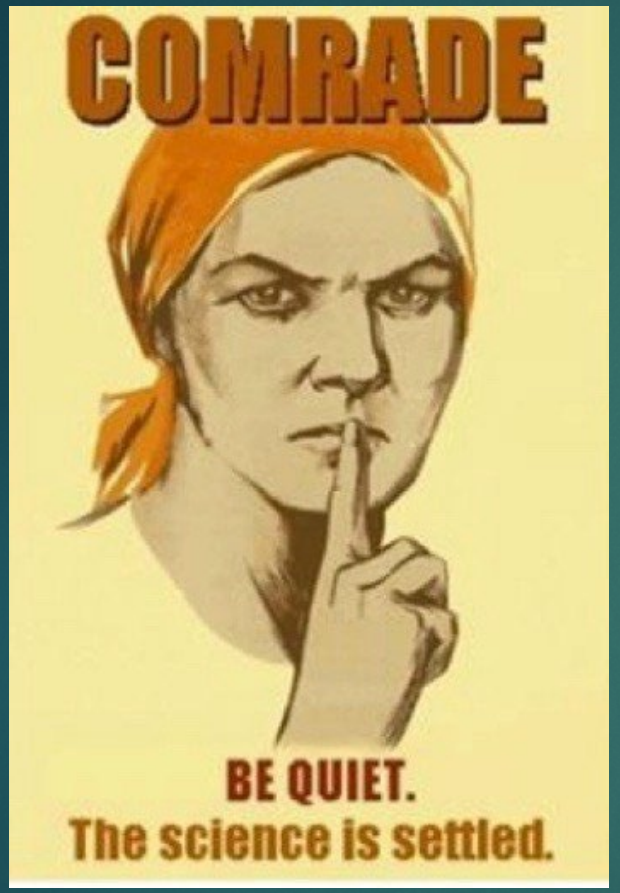
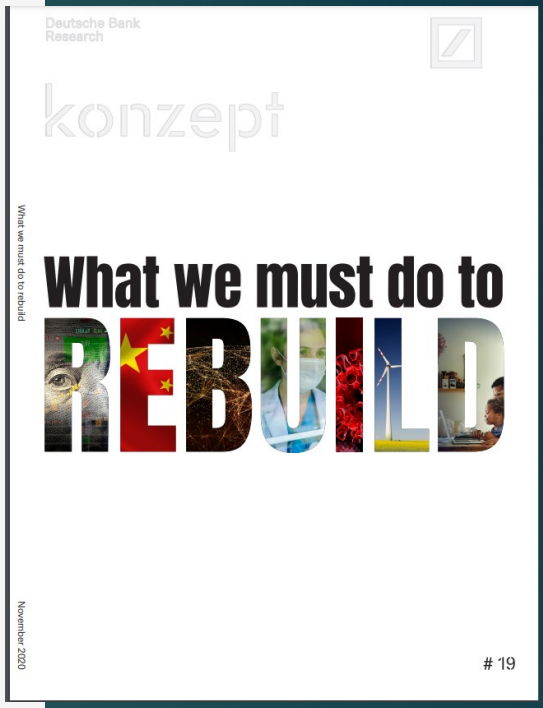
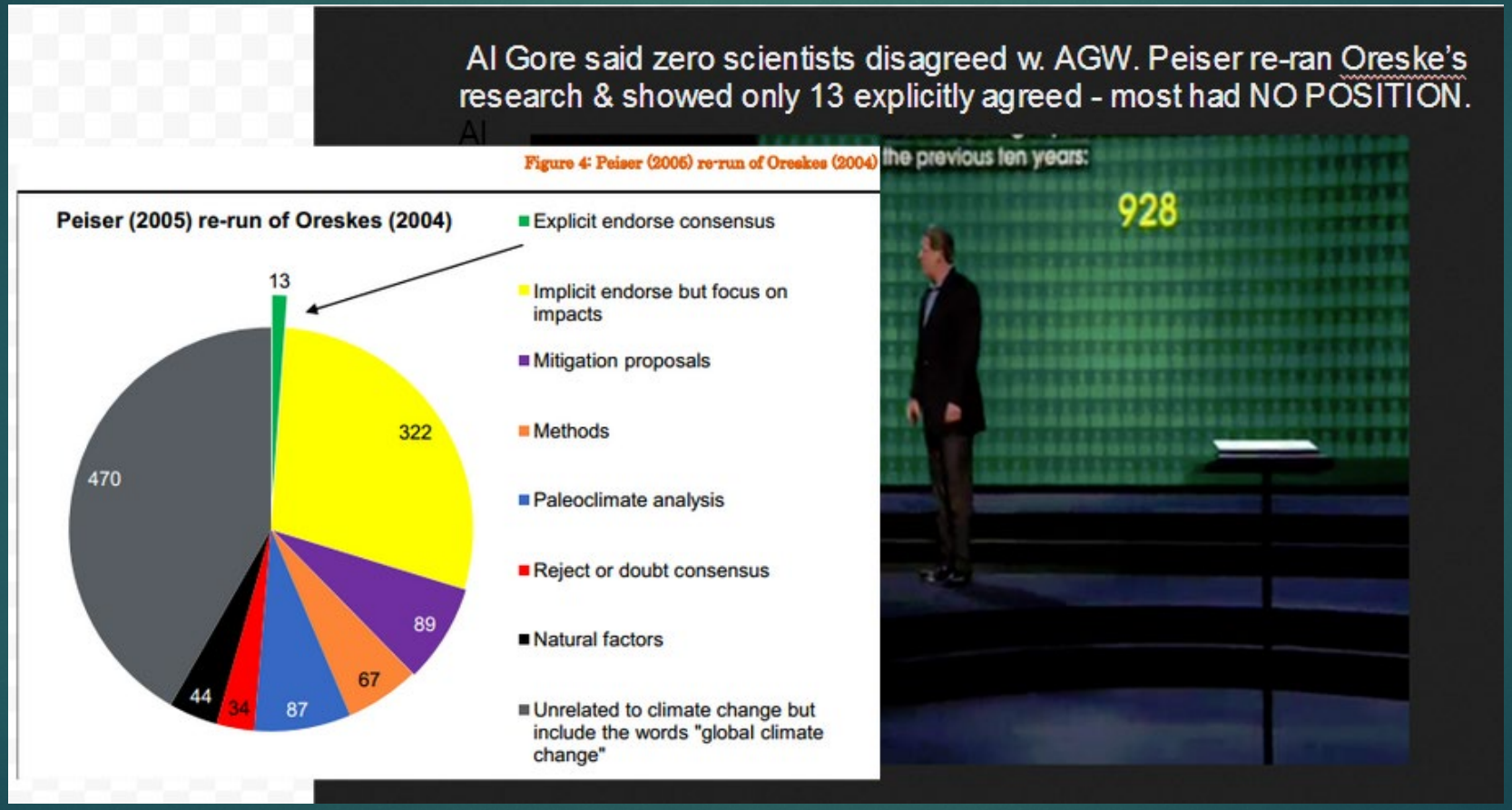


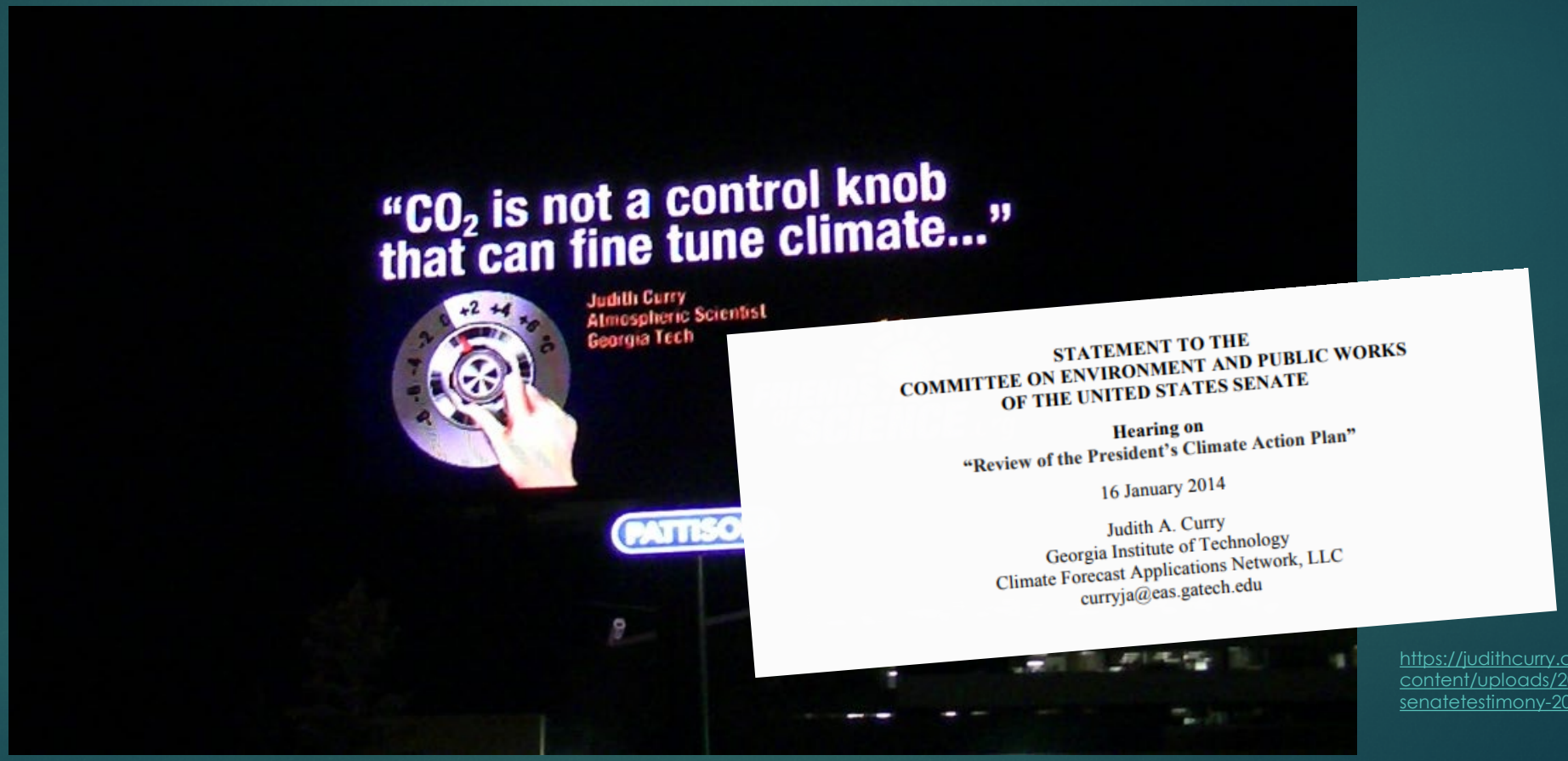
If we really want to achieve climate neutrality, we need to change our behaviour in all these areas of life. This is simply because there are no adequate cost-effective technologies yet to allow us to maintain our living standards in a carbon-neutral way. That means that carbon prices will have to rise considerably in order to nudge people to change their behaviour. Another (or perhaps supplementary) option is to tighten regulatory law considerably. I know that "eco-dictatorship" is a nasty word. But we may have to ask ourselves the question whether and to what extent we may be willing to accept some kind of eco-dictatorship (in the form of regulatory law) in order to move towards climate neutrality. Here is an example: What should we do if property owners do not want to turn their houses into zero-emission buildings; if they do not have the financial means to do so; if doing so is not possible for technical reasons or if the related investments do not pay off?



Science is Not a Democracy. Science is about Evidence.

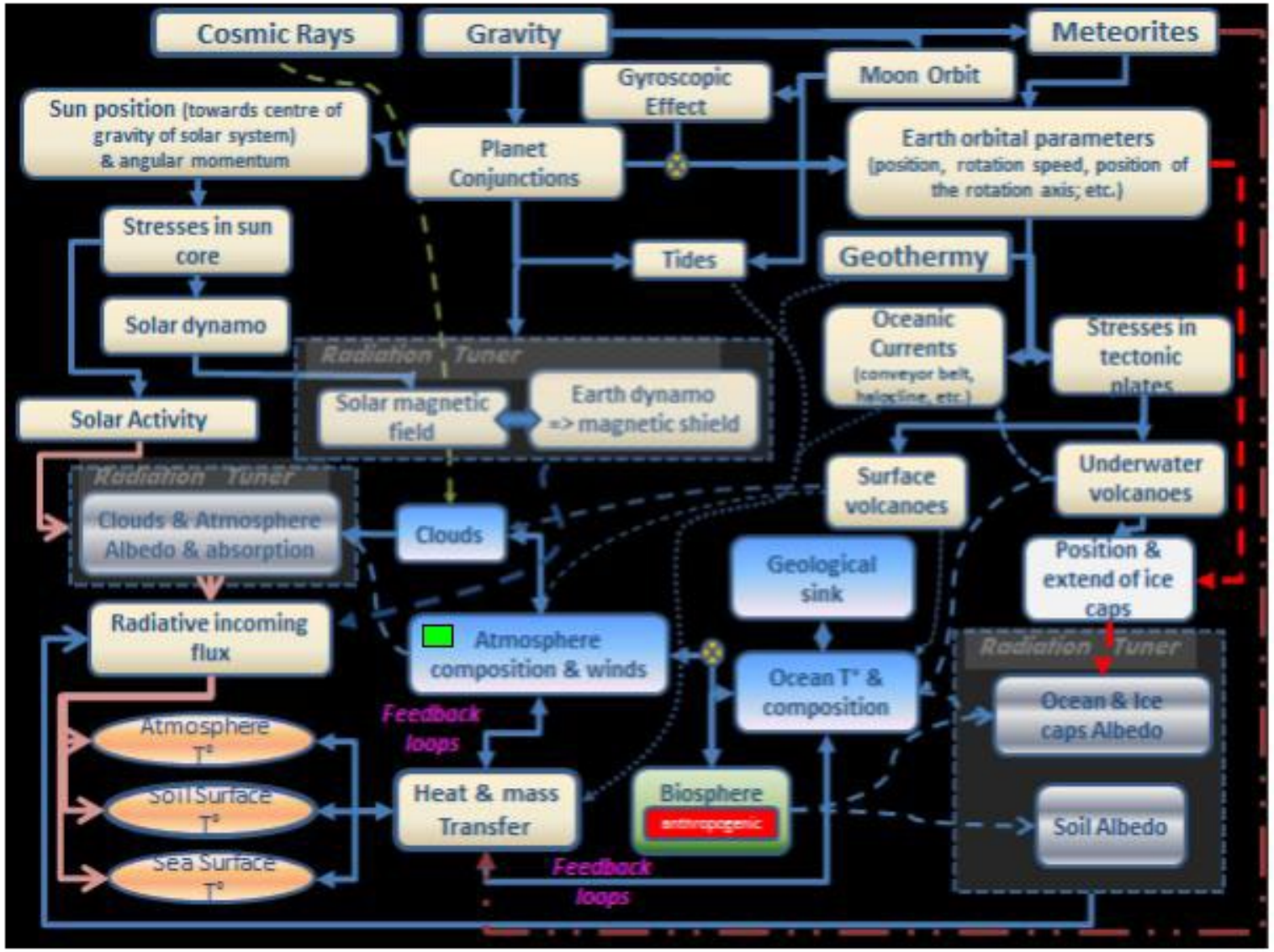


Since 2014, the scientific evidence shows…



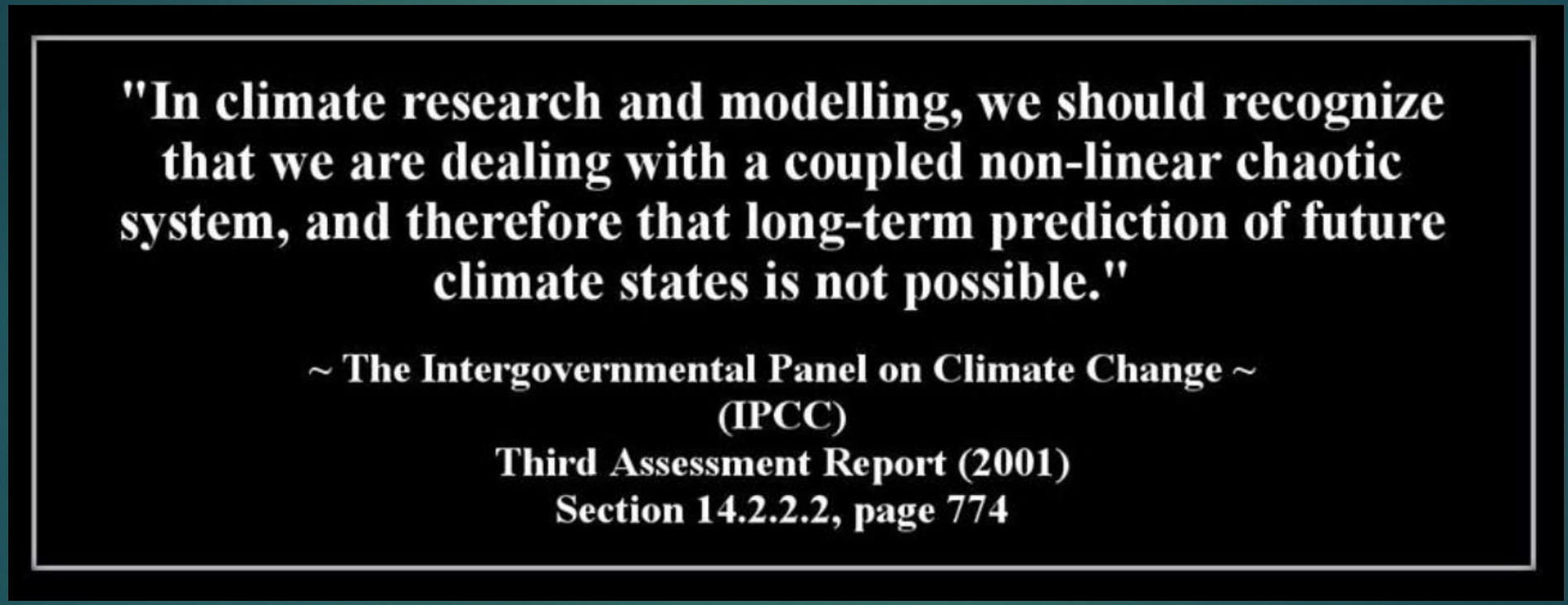
https://judithcurry.com/wp-content/uploads/2014/01/curry-senatetestimony-2014-final.pdf

Climate is Complex



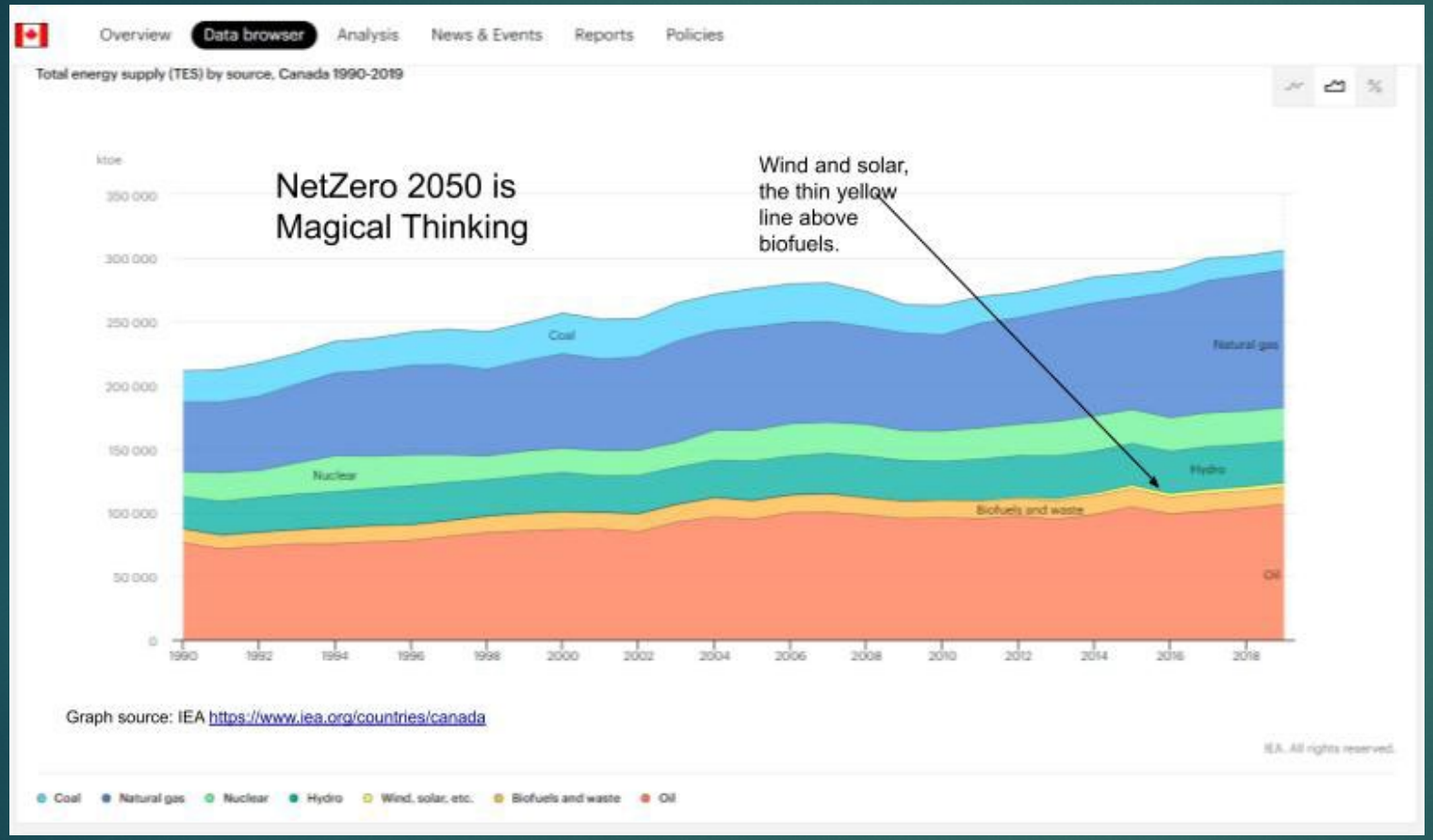
Visualization by Henri Masson, complex systems expert

The Intergovernmental Panel on Climate Change (IPCC) Knows this:

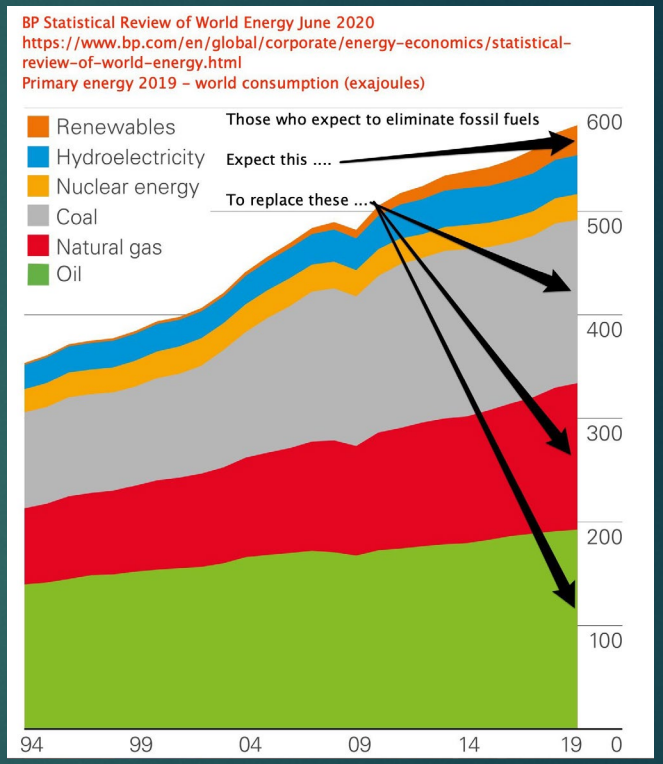


IPCC's mandate is to report on human causation.

Net Zero is Magical Thinking



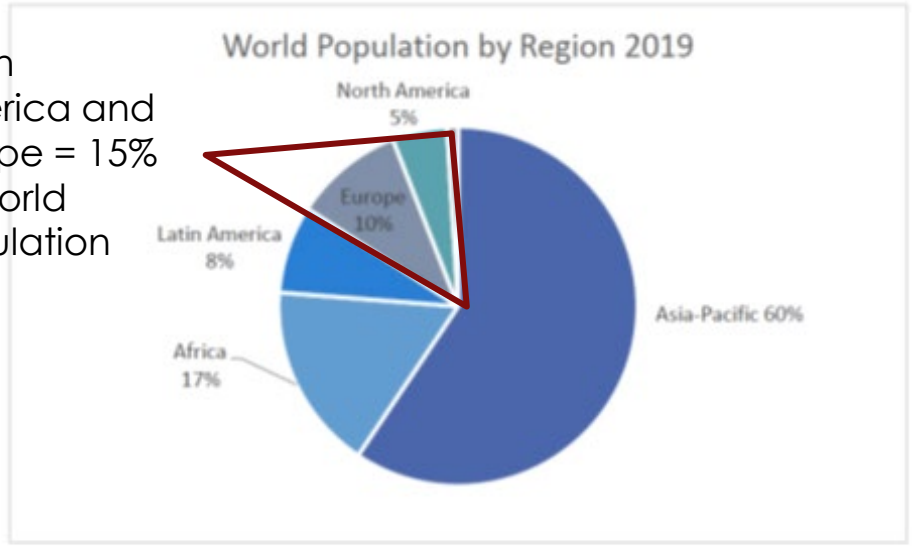
Canada – Total Energy Consumption by Source



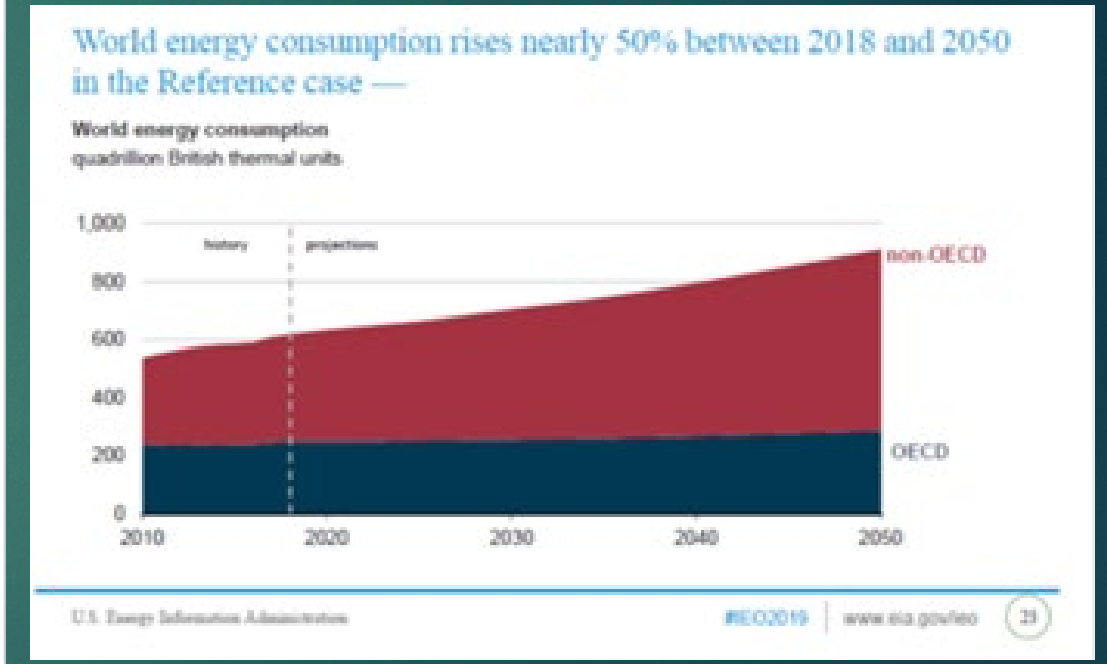
The World

Energy Demand will Grow Globally; OECD Nation Demand is ~Flat

North America and Europe = 15% of World Population



Many people, especially in Europe and North America, may not be aware that their combined populations are only 15% of the world's total, that the population of Africa exceeds that combined total and that the population of Asia is four times that large.



Claims of "Sustainable Jobs" Replacing Conventional Energy are Laughable

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While ore grades vary widely, copper ores typically contain only about a half-percent, by weight, of the element itself: thus, roughly 200 tons of ore are dug up, moved, crushed, and processed to get to one ton of copper. There is nothing "green" about green energy.

11:04 AM · Mar 12, 2023 · **2,987** Views

egories Authors

We need trucks for that, big trucks.

A 797 Cat haul truck weighs 623690 kg, holds 4500 litres of fuel and 6100 litres of oil/coolant. Each load approx. 400 tons.

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29 Feb 2016 | 16:00 GMT

To Get Wind Power You Need Oil

Each wind turbine embodies a whole lot of petrochemicals and fossil-fuel energy

By **Vaclav Smil**

Illustration: Dan Page

Wind turbines are the most visible symbols of the quest for renewable electricity generation. And yet, although they exploit the wind, which is as free and as green as energy can be, the machines themselves are pure embodiments of fossil fuels.

Large trucks bring steel and other raw materials to the site, earth-moving equipment beats a path to otherwise inaccessible high ground, large cranes erect the structures, and all these machines burn diesel fuel. So do the freight trains and cargo ships that convey the materials needed for the production of cement, steel, and plastics. For a 5-megawatt turbine, the steel alone averages [pdf] 150 metric tons for the reinforced concrete foundations, 250 metric tons for the rotor hubs and nacelles (which house the gearbox and generator), and 500 metric tons for the towers.

It takes at least 16 years to get a mine up and running.

Mining for "Critical Minerals" Needs Oil, Gas and Coal

Tribology International
Volume 115, November 2017, Pages 116-139

Global energy consumption due to friction and wear in the mining industry

Kenneth Holmberg [a], Päivi Kivikytö-Reponen [a], Pirita Härkisaari [b], Kati Valtonen [b], Ali Erdemir [c]

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Abstract

Calculations on the global energy consumption due to friction and wear in the mineral mining industry are presented. For the first time, the impact of wear is also included in more detailed calculations in order to show its enormous tribological and economic impacts on this industry. A large variety of mining equipment used for the extraction, haulage and beneficiation of underground mining, surface mining and mineral processing were analysed. Coefficients of friction and wear rates of moving mechanical assemblies were estimated based on available information in literature in four general cases: (1) a global average mine in use today, (2) a mine with today's best commercial technology, (3) a mine with today's most advanced technology based upon the adaptation of the latest R&D achievements, and (4) a mine with best futuristic technology forecasted in the next 10 years. The following conclusions were reached:

https://www.sciencedirect.com/science/article/abs/pii/S0301679X17302359

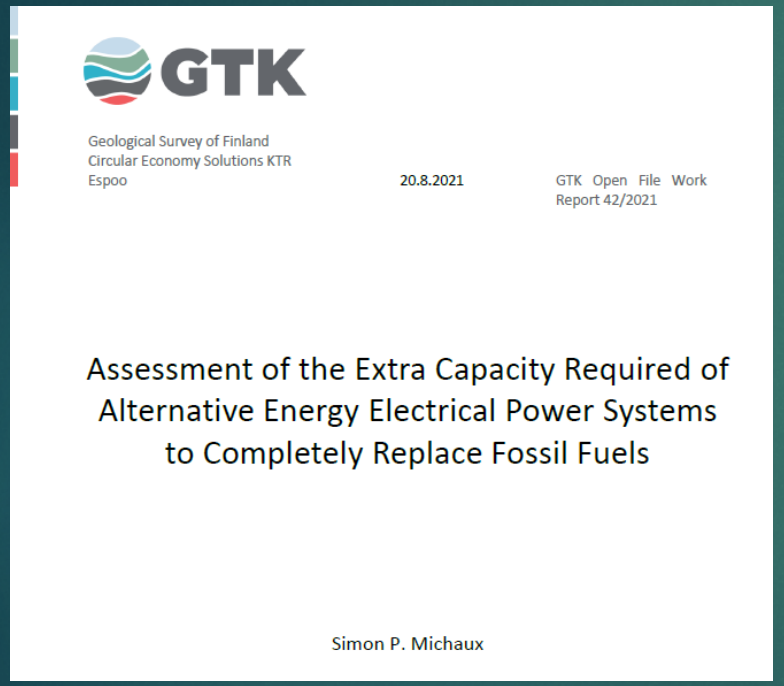
← Thread

John Lee Pettimore
@JohnLeePettim13

I get a lot of replies on my tweets, "Make mining Green" Energy consumption of mining is 6.2% of the total global energy consumption. The annual global energy consumption is 580 million terajoules or the energy equivalent of a Hiroshima nuclear bomb going off every four seconds.

5:23 PM · Jan 19, 2023 · **354.6K** Views

Claims of Reaching NetZero 2030 or 2050 are Equally Laughable



GTK

Geological Survey of Finland
Circular Economy Solutions KTR
Espoo

20.8.2021

GTK Open File Work Report 42/2021

Assessment of the Extra Capacity Required of Alternative Energy Electrical Power Systems to Completely Replace Fossil Fuels

Simon P. Michaux

https://tupa.gtk.fi/raportti/arkisto/42_2021.pdf

Metal	Element	Total metal required produce one generation of technology units to phase out fossil fuels (tonnes)	Global Metal Production 2019 (tonnes)	Years to produce metal at 2019 rates of production (years)
Copper	Cu	4 575 523 674	24 200 000	189,1
Nickel	Ni	940 578 114	2 350 142	400,2
Lithium	Li	944 150 293	95 170 *	9920,7
Cobalt	Co	218 396 990	126 019	1733,0
Graphite (natural flake)	C	8 973 640 257	1 156 300 ◆	3287,9
Graphite (synthetic)	C		1 573 000 ◆	-
Silicon (Metallurgical)	Si	49 571 460	8 410 000	5,9
Vanadium	V	681 865 986	96 021 *	7101,2
Rare Earth Metals	-			
Neodymium	Nd	965 183	23 900	40,4
Germanium	Ge	4 163 162	143	29113,0
Lanthanum	La	5 970 738	35 800	166,8
Praseodymium	Pr	235 387	7 500	31,4
Dysprosium	Dy	196 207	1 000	196,2
Terbium	Tb	16 771	280	59,9

JP Morgan's Michael Cembalist is an Energy Realist on Decarbonization

Industrial sectors with high electrification potential

Sector	Heat requirement	Fuel consumption shares: Process HVAC	Heat	CHP
Primary metals ex. steel	1200°C	6%	75%	7%
Fabricated metal	430°C-680°C	20%	61%	7%
Machinery	730°C	46%	39%	4%
Secondary steel	1425°C-1540°C	4%	87%	0%
Wood products	180°C	10%	50%	14%
Vehicle parts (drying)	150°C	31%	33%	12%
Plastics and rubber	260°C	20%	33%	24%

Source: LBNL, "*Electrification of buildings and industry*", March 2018.

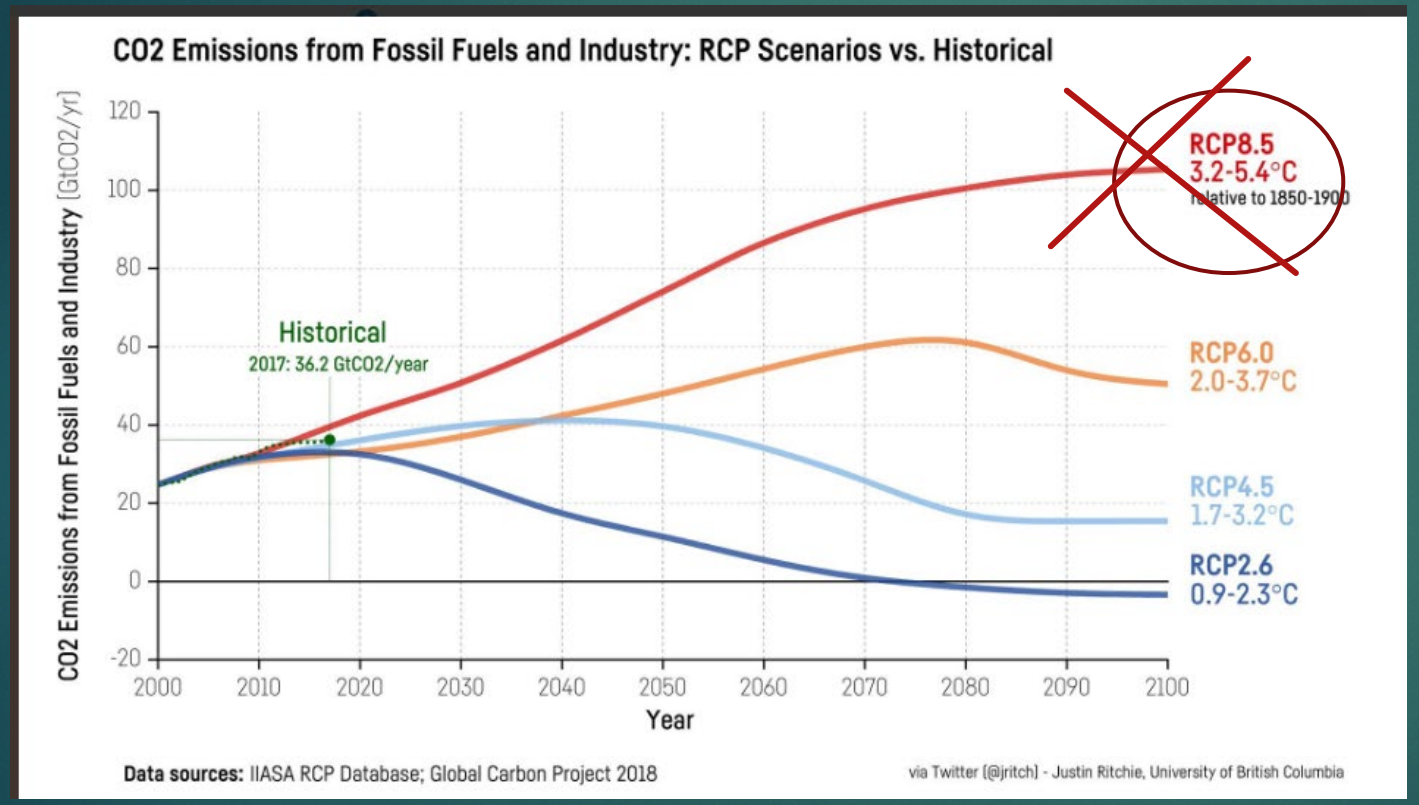
Industrial sectors with medium/low electrification potential

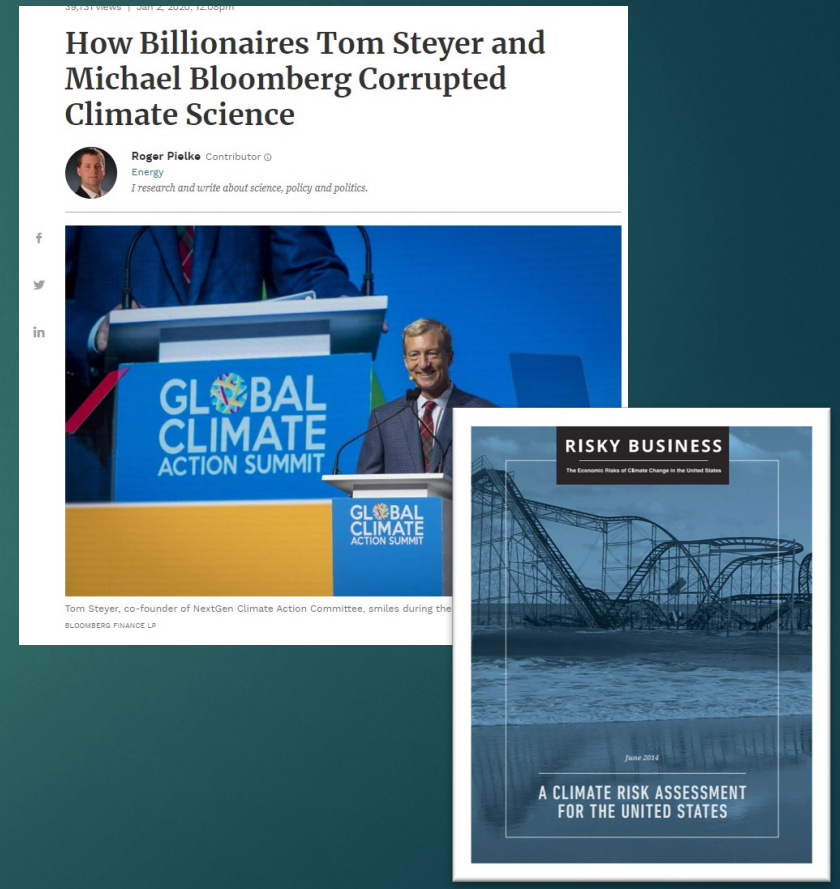
Sector	Heat requirement	Fuel consumption shares: Process HVAC	Heat	CHP
Food/beverages	120°C-500°C	4%	25%	40%
Chemicals	100°C-850°C	1%	32%	43%
Pulp and paper	650°C	2%	21%	63%
Non-metallic minerals	870°C-1600°C	3%	90%	1%
Oil/coal products	220°C-540°C	0%	58%	22%

Source: LBNL, "*Electrification of buildings and industry*", March 2018.

The challenge: low/medium electrification potential sectors use 2.5x the energy as high potential sectors. Even if we assume that all sectors are eventually electrified using new technologies[26], there's still a large increase in cost. In addition to upfront switching costs, industrial companies would face costs per unit of energy that are **3x-6x higher for electricity than for direct natural gas**. Electric heating efficiency gains vs combustion could offset part of this cost, but not all of it.

So How Did we End up in A "Climate Emergency?" Misuse of RCP 8.5 as if BAU





China emits in 1 month what Canada emits in a year and a half

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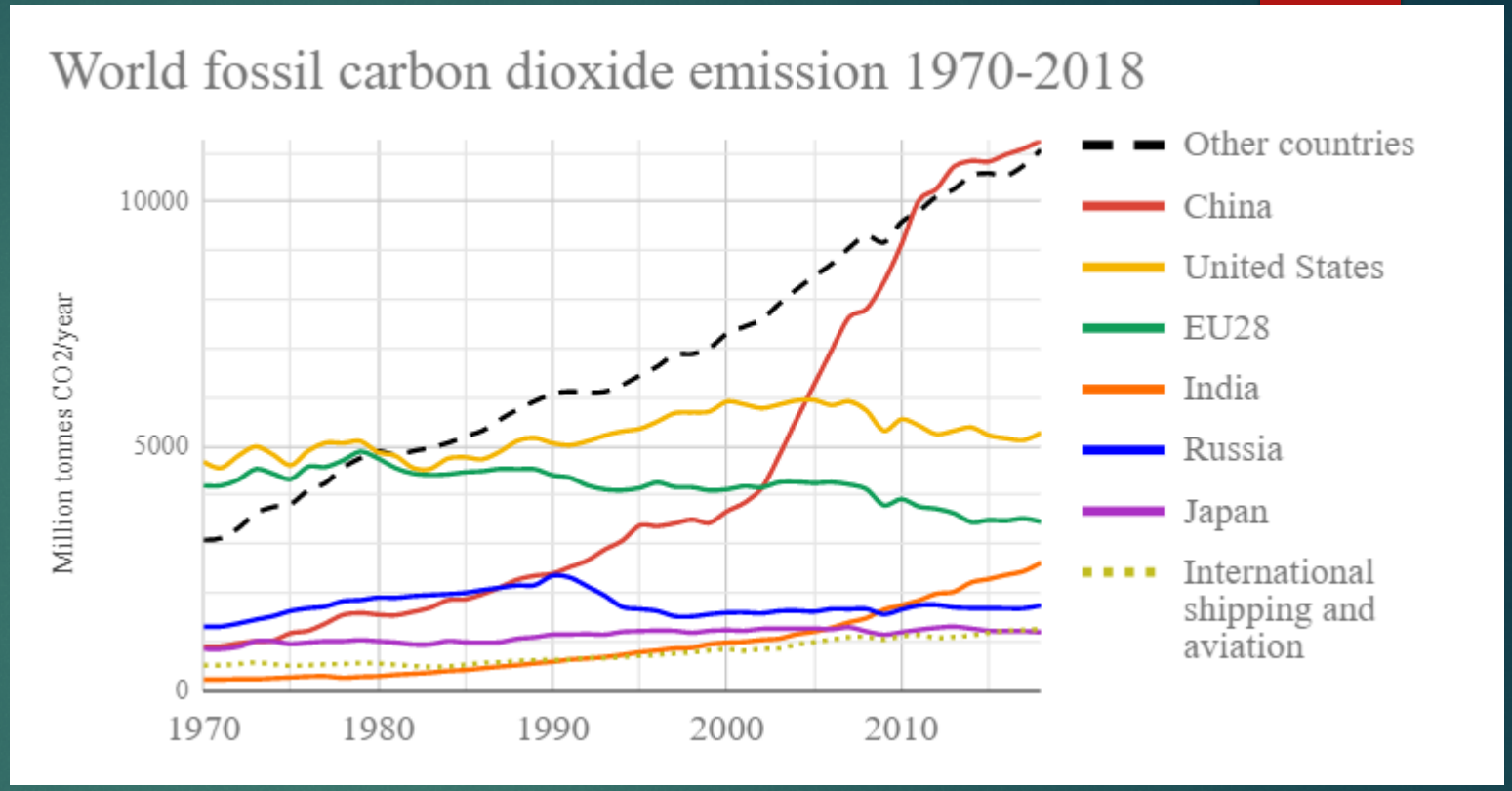

Immigration Volumes Make it Impossible to Meet Climate Targets

Century Initiative plans to up the population of Canada to 100 million by 2100.

Parliamentary Budget Officer

- "While the impact on Canadian GDP is from global GHG emissions, *Canada's own emissions are not large enough to materially impact climate change*."
- – PBO, Nov. 8. 2022
- *Italic added

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From the Porto Conference in 2018 to over 1500 signatories today https://clintel.org/

No Need to Divide Society with Dangerous Dreams of Climate Ideologues. Energy is life!

Energy illiteracy and climate policies are destroying Canada and creating the global energy crisis, famine and wide-spread heat-or-eat poverty.

See more of my "Thoughts About Things"

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Ecofeminist Energy Illiteracy: Greta in Alberta Oil Country

25 Pages • Posted: 6 May 2021

Michelle Stirling
Independent

Date Written: May 4, 2021

Abstract

This paper rebuts Keller (2021) and the feminist view that Greta Thunberg's 2019 visit to 'tar sands' Alberta sparked ugly push-back by pro-oil activists due to 'patriarchal petroculture' rather than this resistance being a response to an on-going geopolitical 'green' transnational trade war against Alberta. This paper will examine how Greta is the exploited 'walking native advertisement' for a transnational social media/social engineering project established by several carbon offset promoters. Greta is not a true example of 'spectacular' mediated transnational girlhood (Projansky 2014), but rather she is a figure contrived. Greta Thunberg's earnest and naïve climate concerns have been exploited by the rich and powerful; a child with a black and white world view due to her Asperger's' 'super power'. This paper deconstructs the fallacious logic and confirmation bias of an ecofeminist perspective that is clouded with energy illiteracy.

Keywords: transnational girlhood, petroculture, misogyny, Greta Thunberg, Tar Sands Campaign, Alberta, climate change

JEL Classification: F51,Z13,Z18,L31,L38,L71,L78,F18,K32

Suggested Citation:

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Michelle Stirling

Thoughts about Things.

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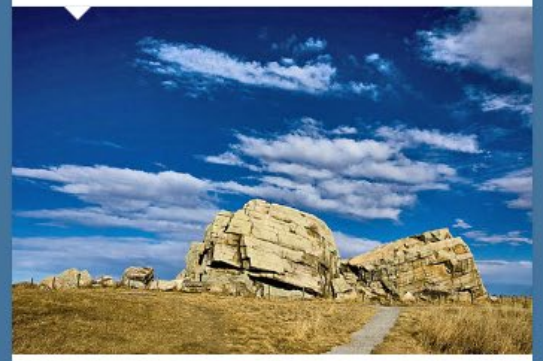
Canoe Sheds, Truth, and Reconciliation



A terrible but true statement from Canada's past:

"If we had only been allowed to carry on the

Models vs Reality: COVID – Climate Disastrous Public Policies. FreedomTalk April 2022

I was pleased to present at FreedomTalk in the spring of 2022. Many people have noticed the curious overlap of various aspects of both COVID and climate ideology and propaganda. I looked at the problems of using 'models' (sophisticated mathematical computer simulations) for both. I promised to post the power point so that people could review the links.

#NetZero + #healthcare = MAiD4You

In 2017, my brother Glenn Stirling chose MAiD (Medical Assistance in Dying/euthanasia) to end his life. He was suffering from a 'spontaneous' incurable condition known as Progressive Supranuclear Palsy (PSP), an aggressive cousin of Parkinson's. At the time, MAiD approval conditions were very strict. Likewise, a person's medical doctor could refuse to offer or condone MAiD. However, my brother showed serious degradation of his abilities, and he engaged in the MAiD process. Ultimately, he was granted permission to die this way.

Having been with my brother on his 'journey' (which I felt had significant due process) I am deeply concerned about the potential for misuse of MAiD, especially now that restrictions on its use have been lightened

https://michellestirling.com/

Thank you!

Donations to support my work gratefully accepted:

Etransfer: stirlingmg@yahoo.com