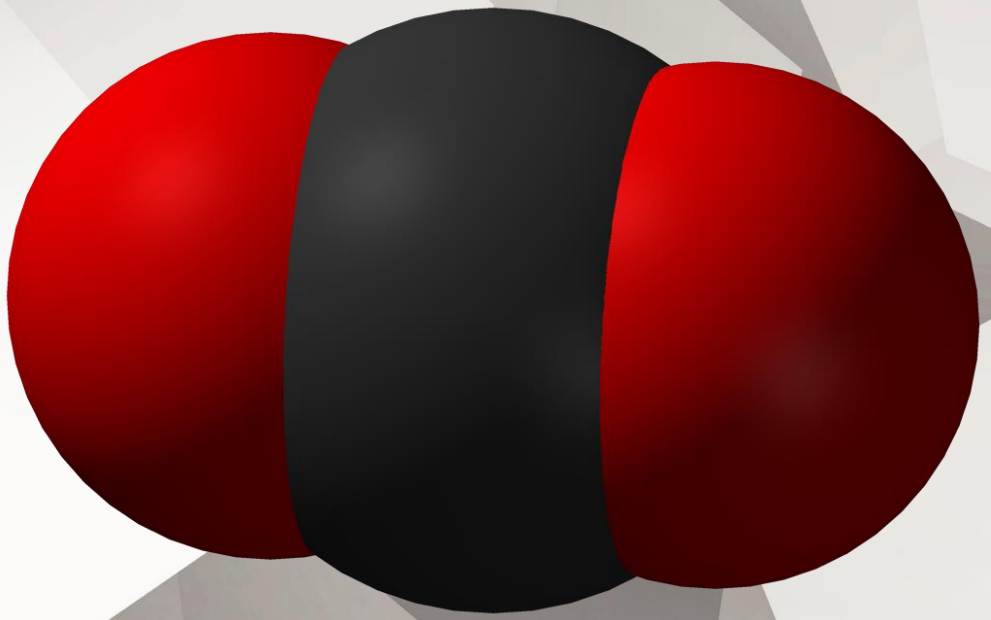


Visualization of a Carbon Dioxide (CO_2) molecule

Personal Carbon RATION

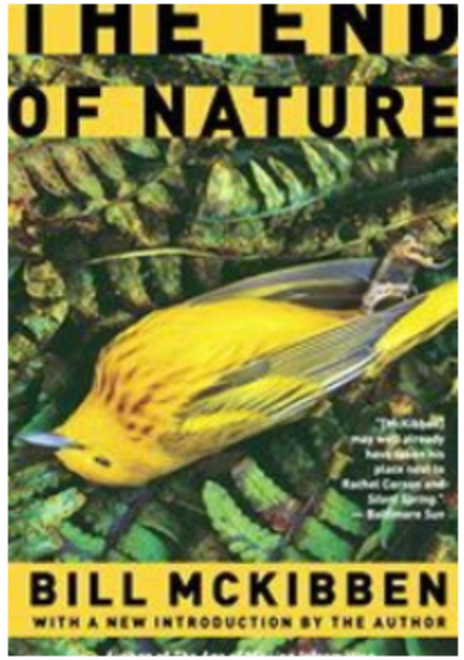
Are YOU ready for it?

Reasons to say NO!

Presented by Michelle Stirling
Communications Manager
Friends of Science Society

FRIENDS OF SCIENCE
Providing Insight into Climate Science

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).

Powerful Philanthropies want to 'prompt a sea change that washes over the entire global economy' with cap and trade

In 2006, several of the country's wealthiest foundations hired a consulting firm to comprehensively survey the available scientific literature and to consult more than 150 leading climate change and energy experts. The result of this intensive undertaking was the 2007 report *Design to Win: Philanthropy's Role in the Fight Against Global Warming*.

Leading the report was the recommendation that "tempering climate change" required a strong cap and trade policy in the United States and the European Union, and a binding international agreement on greenhouse gas emissions. The report predicted that passage of cap and trade legislation would "prompt a sea change that washes over the entire global economy." The report included little to no discussion of the role of government and philanthropy in directly sponsoring the creation of new energy technologies. The report is additionally notable for the absence of any meaningful discussion of social, political or cultural dimensions of the challenge.

To understand how this planning document shaped the investment strategies of major foundations, I analyzed available records as of January 2011 for 1,246 climate change and energy-related grants distributed by nine aligned foundations between 2008 and 2010. These aligned foundations are among the wealthiest in the country, include several of the top funders of environment-related programs, and were either sponsors of the *Design to Win* report or describe themselves as following its recommendations. The foundations analyzed were the David and Lucile Packard Foundation (#1 in environmental funding for 2009), the Sea Change Foundation (#4), the William and Flora Hewlett Foundation (#5), the Kresge Foundation (#13), the Doris Duke Charitable Foundation (#24), the McKnight Foundation (#39), the Oak Foundation (#41), the Energy Foundation and ClimateWorks.

Matthew Nisbet
"Climate Shift"

Imagine *Rationing* Your Energy Consumption

- Or having "Big Brother" cut it for you
- Anti-capitalist George Monbiot loves this idea

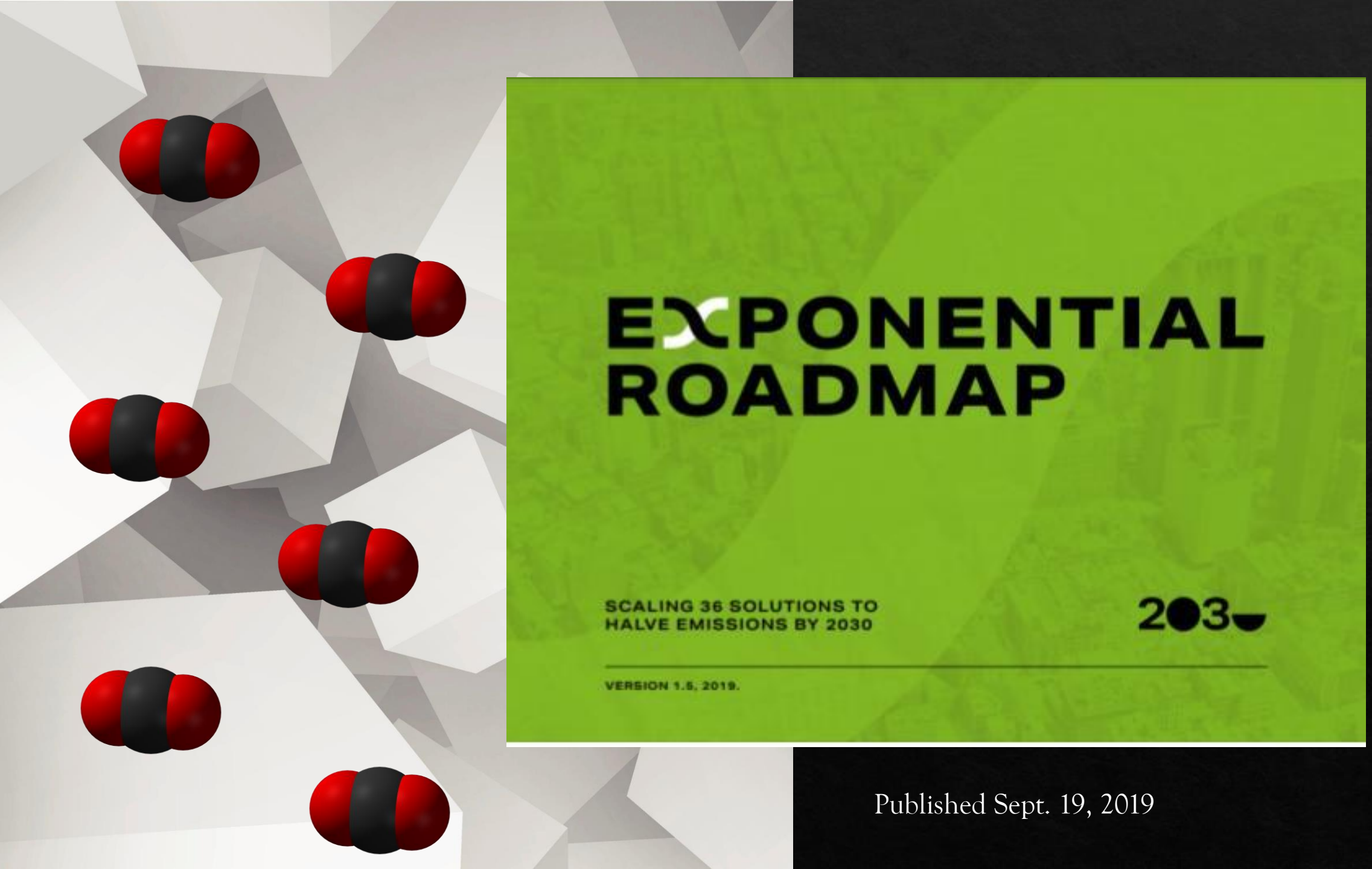
2. Use that target to set an annual carbon cap, which falls on the ski jump trajectory. Then use the cap to set a personal carbon ration. Every citizen is given a free annual quota of carbon dioxide. He spends it by buying gas and electricity, petrol and train and plane tickets. If he runs out, he must buy the rest from someone has has used less than his quota(2). This accounts for about 40% of the carbon dioxide we produce. The rest is auctioned off to companies. It's a simpler and fairer approach than either green taxation or the Emissions Trading Scheme, and it also provides people with a powerful incentive to demand low-carbon technologies. Timescale: a full scheme in place by January 2009.

https://www.monbiot.com/2006/10/31/heres-the-plan/

”One certainly can’t expect people to change their behaviours and take climate action if they do not know what their climate footprint is or what their consumption represents.”

Niclas Svenningsen
Manager, Global Climate Action
UN Climate Change secretariat

United Nations
Climate Change



Published Sept. 19, 2019

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Are You Kidding?

Reality Check

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Opinion | Energy | Renewables

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

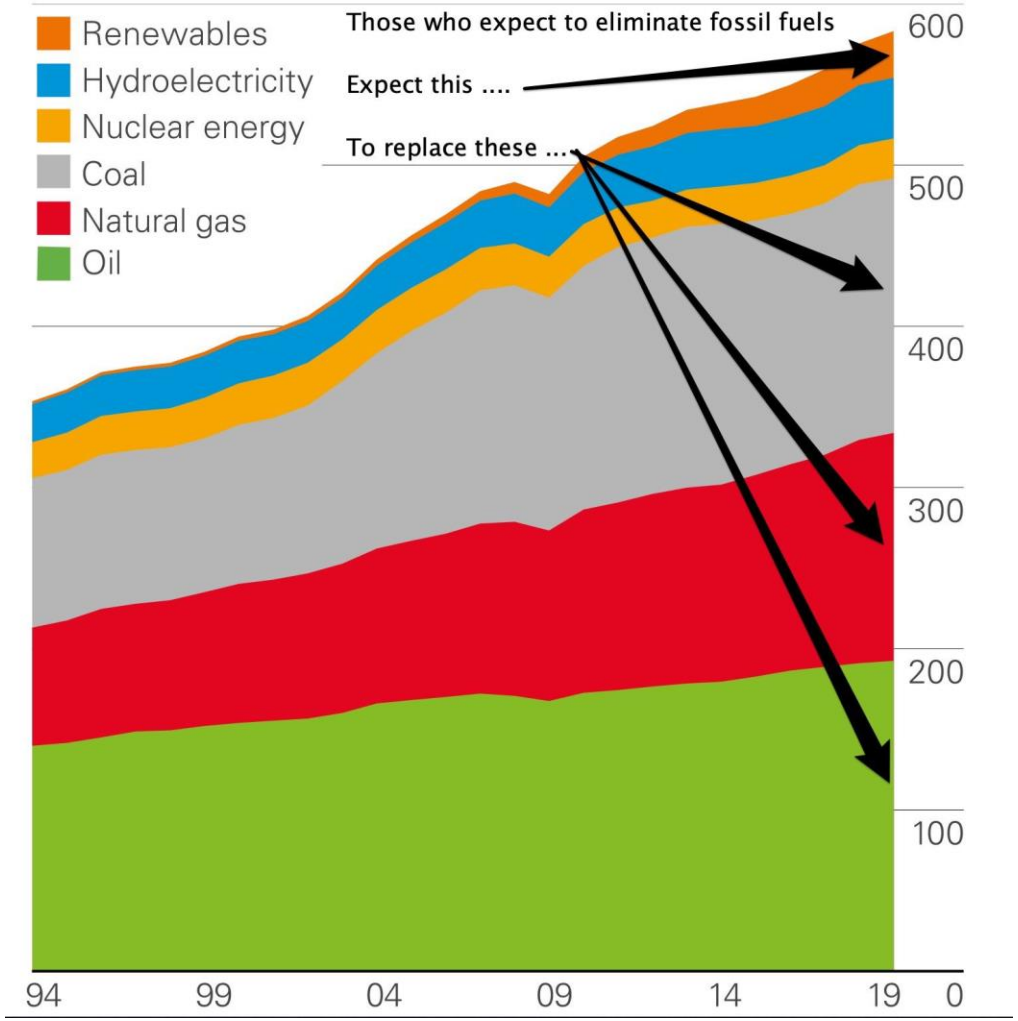
By **Vaclav Smil**

Illustration: Dan Page

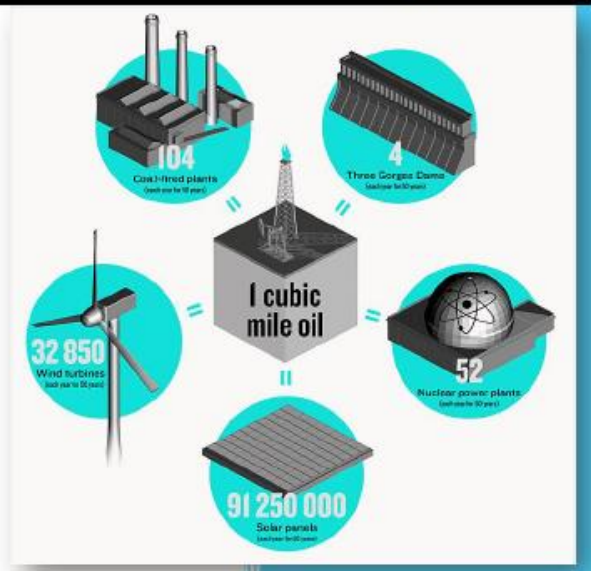
Wind turbines are the most visible symbols of the quest for renewable electricity generation. And yet, although they exploit the wind, which is as free and as green as energy can be, the machines themselves are pure embodiments of fossil fuels.

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.

BP Statistical Review of World Energy June 2020
https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html
Primary energy 2019 – world consumption (exajoules)



Why Renewable Energy Cannot Replace Fossil Fuels By 2050



https://blog.friendsofscience.org/wp-content/uploads/2020/06/WHY-RENEWABLE-ENERGY-CANNOT-REPLACE-FOSSIL-FUELS-BY-2050-FINAL-2.pdf

The world uses 3 Cubic Miles of Oil Equivalent Energy every year – One of those Cubic Miles…is OIL.

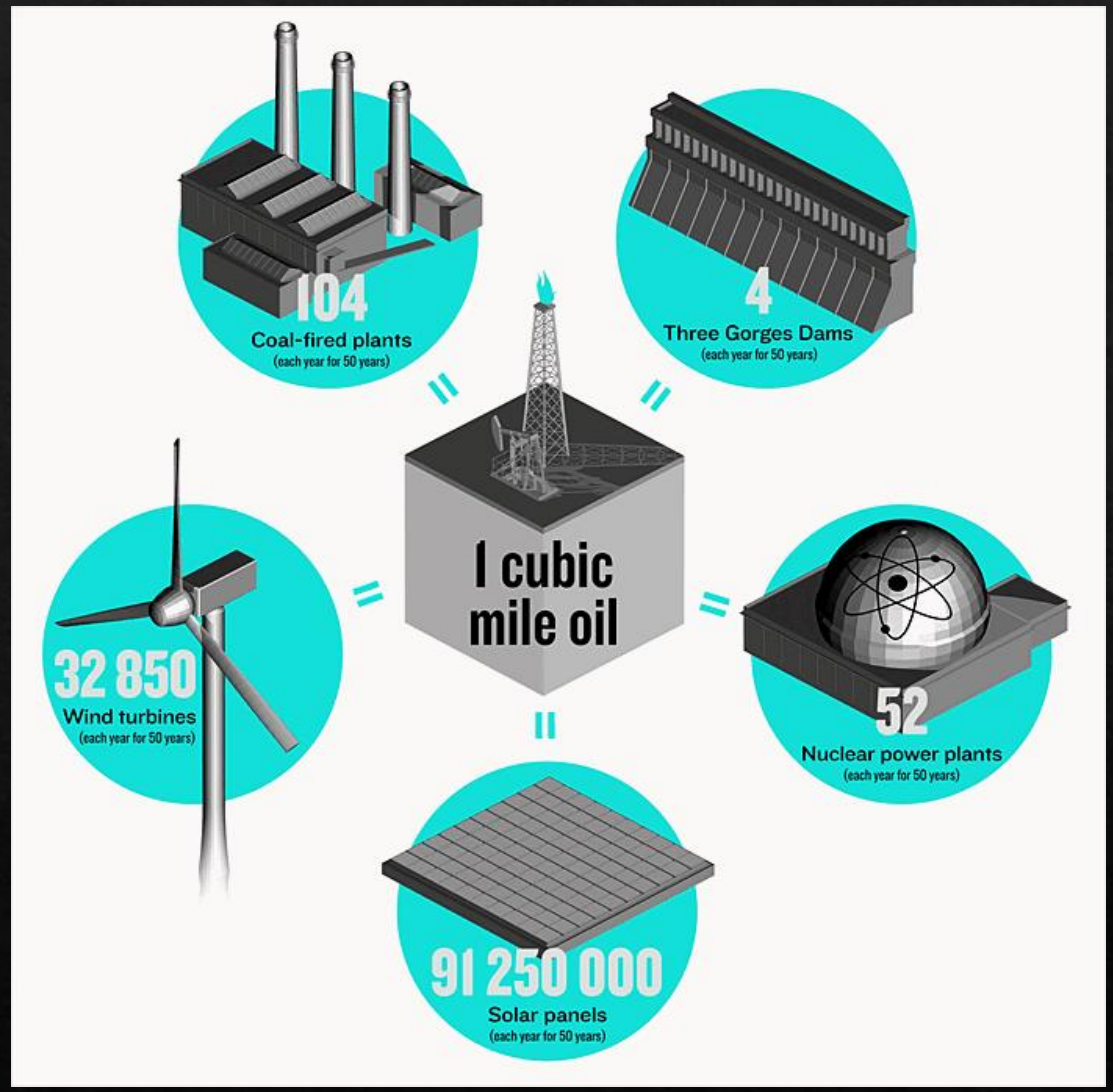
Robert Lyman

6/18/2020

Joules, BTUs, Quads—Let's Call the Whole Thing Off

How to replace a cubic mile of oil

- To obtain in one year the amount of energy contained in one cubic mile of oil, each year for 50 years we would need to have produced the numbers of dams, nuclear power plants, coal plants, windmills, or solar panels shown here.



Moonshots & Moore's Law Don't Mix

The carbon law pathway

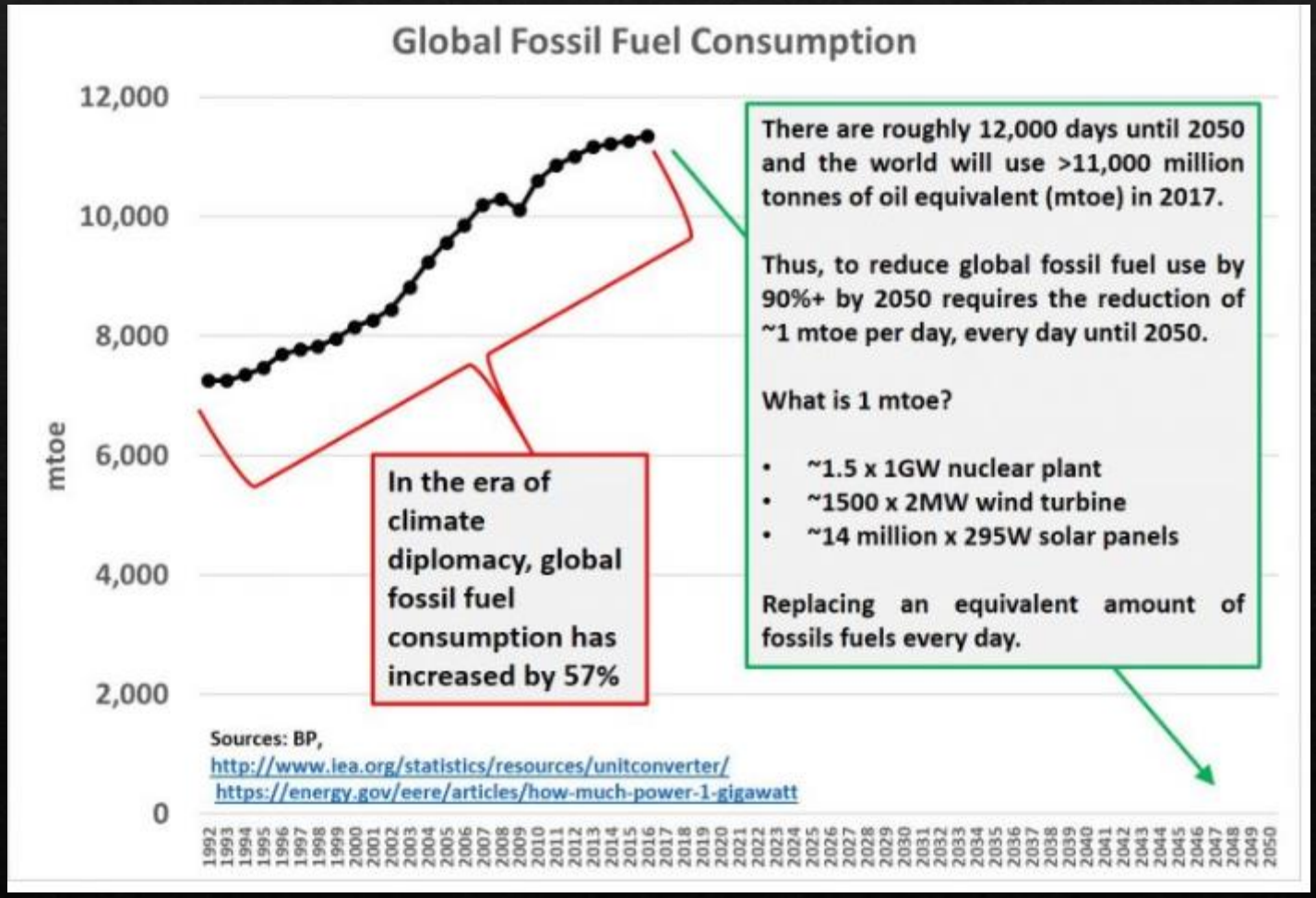
We need Moonshot Thinking and exponential strategies inspired by Moore's Law* to reach the Paris Agreement's ambitious goal. The carbon law trajectory**, first proposed in 2017, is consistent with the UN agreement and the limited remaining carbon budget:

- Emissions peak by 2020.
- Emission fall about 50% by 2030, then a further 50% by 2040, and a further 50% by 2050.
- Agriculture transforms from a carbon source to a carbon sink.
- Solutions to store carbon, for example reforestation, biochar or bioenergy with carbon capture and storage, are scaled up.
- Remaining natural carbon sinks are protected and enhanced.

*The observation that computing power doubles approximately every two years.

**J. Rockström et al., A roadmap for rapid decarbonization. Science 355.6331, 1269-1271 (2017).

Exponential Roadmap



Reality

Climate Dreams – Covid Lockdowns Coincidences

Transport

- Shorter trips are responsible for three quarters of transport emissions. Taking these emissions to around zero is economically viable and brings many co-benefits from healthy lifestyles to less polluted cities.
- Electrical and plug-in hybrid passenger vehicles can reach close to 100% of new sales by 2030 if they continue on high current exponential growth curves, even if growth slows from today's growth of 50% per year to 32%. This shift towards 100% of light vehicle sales to electric vehicles is the biggest immediate opportunity to dramatically reduce emissions in the transport sector. The snowball has started rolling in last few years with many major economies and cities announcing incoming bans on new fossil-fuelled light-duty vehicles as well as corporates committing to 100% electric vehicles.

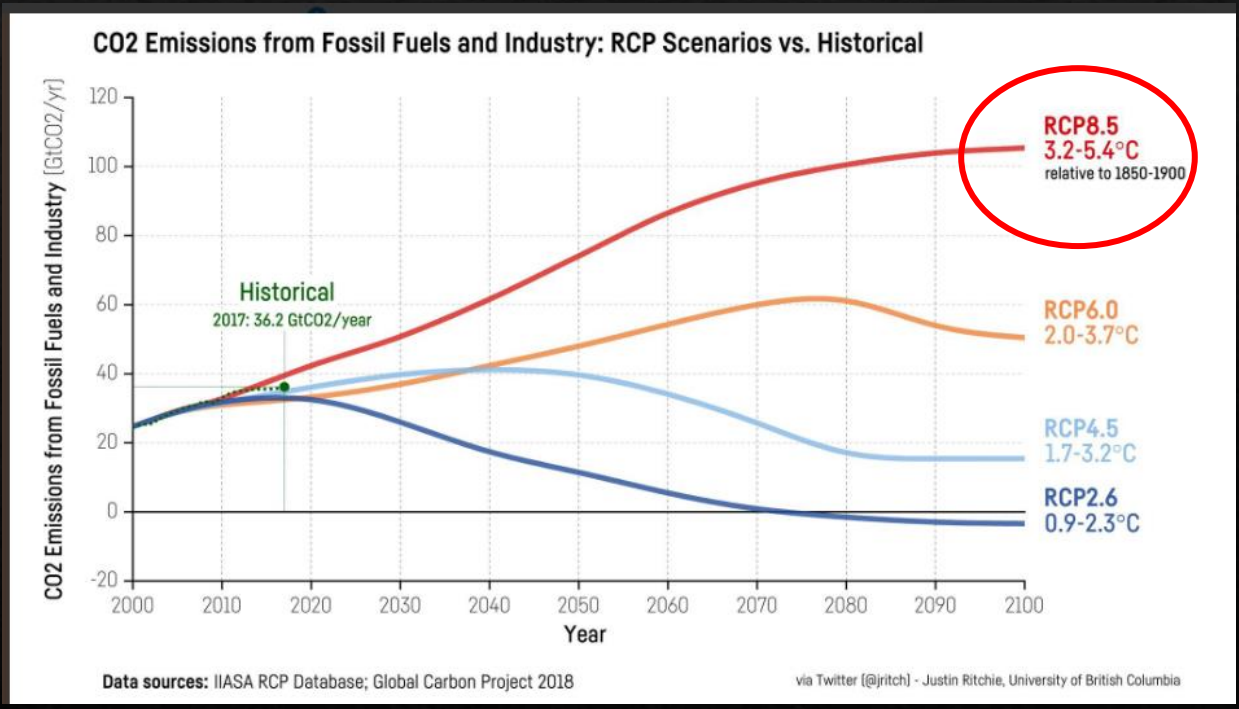
Exponential Roadmap

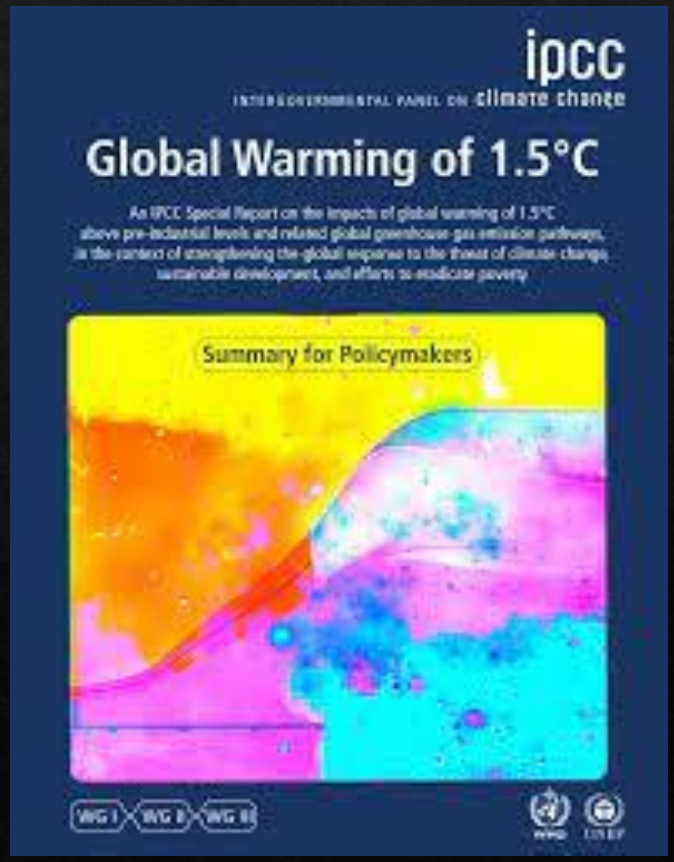
- Mass transit, micromobility (cycling, scooters) and walking to avoid unnecessary car use is the other major opportunity to dramatically reduce emissions in the transport sector by 2030.
- A strong move to a usership instead of ownership model for cars can untap more value from cars, which are unused 95% of the time. Such a car fleet could be just 3% of the size of today's fleet of individually owned vehicles.
- Digital technology can cut business flights by 50% or more. Local co-working hubs can reduce commuting emissions by around 50–60% annually for many people.

Why was there a perceived Climate Emergency?

- The political response to the IPCC 1.5°C special report has been surprisingly swift. The UK and France join a growing number of countries with laws to reach net zero by 2050 or earlier. More than 20 countries are discussing or have agreed a net zero 2050 target and climate and nature emergencies have been declared in 717 cities, municipalities and states.

Exponential Roadmap





https://www.ipcc.ch/sr15/

Someone promoted RCP 8.5 as if "Business-as-Usual" when it is Implausible

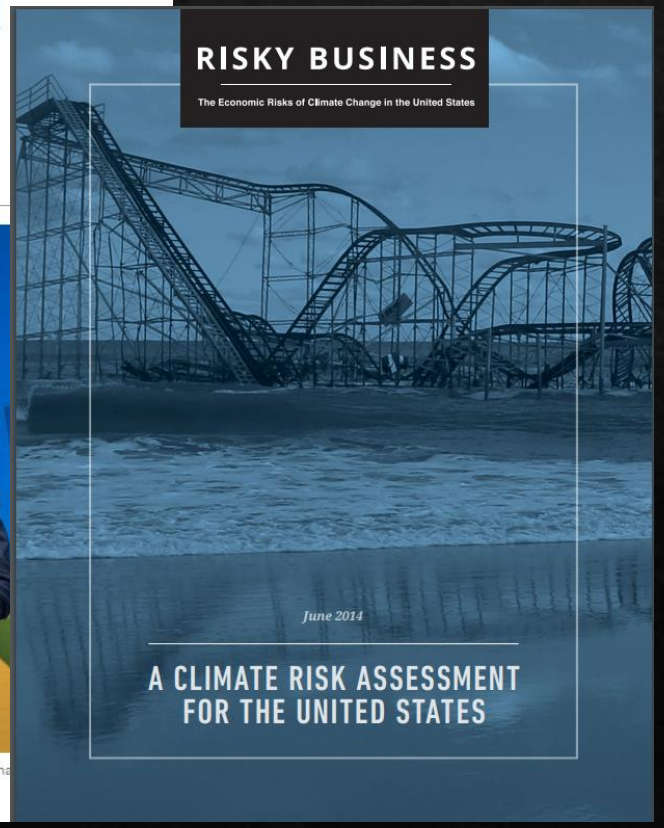
39,731 views | Jan 2, 2020, 12:08pm

How Billionaires Tom Steyer and Michael Bloomberg Corrupted Climate Science

Roger Pielke Contributor ⓘ
Energy
I research and write about science, policy and politics.

Tom Steyer, co-founder of NextGen Climate Action Committee, smiles during the Global Clima

BLOOMBERG FINANCE LP



Energy Research & Social Science 73 (2021) 101890

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ELSEVIER

Distorting the view of our climate future: The misuse and abuse of climate pathways and scenarios

Roger Pielke Jr. [a,*], Justin Ritchie [b]

[a] University of Colorado Boulder, United States
[b] University of British Columbia, Canada

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Climate scenarios
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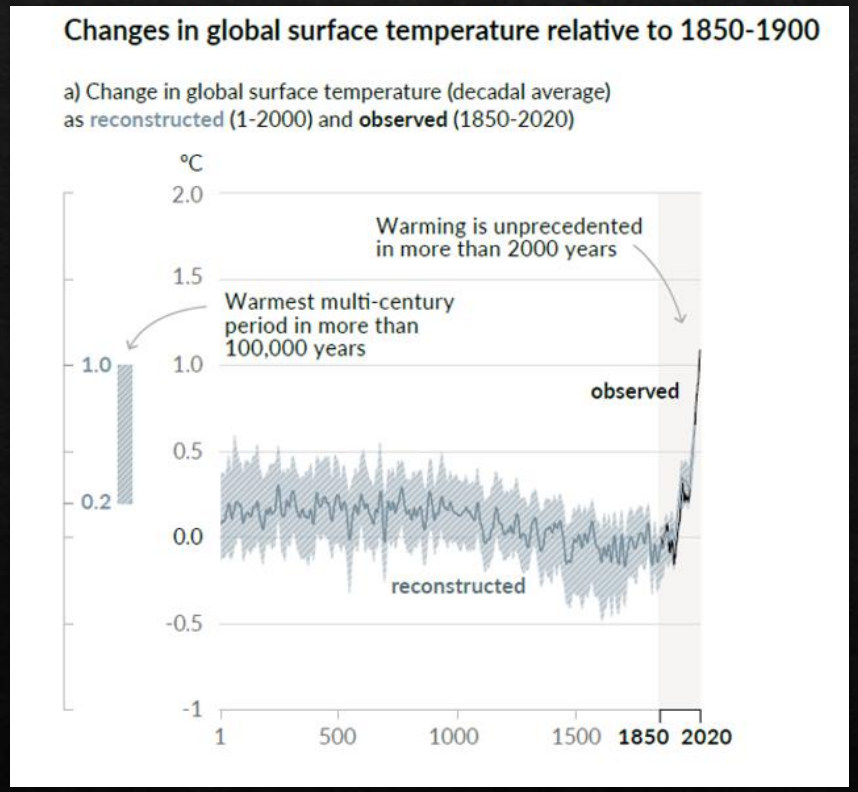
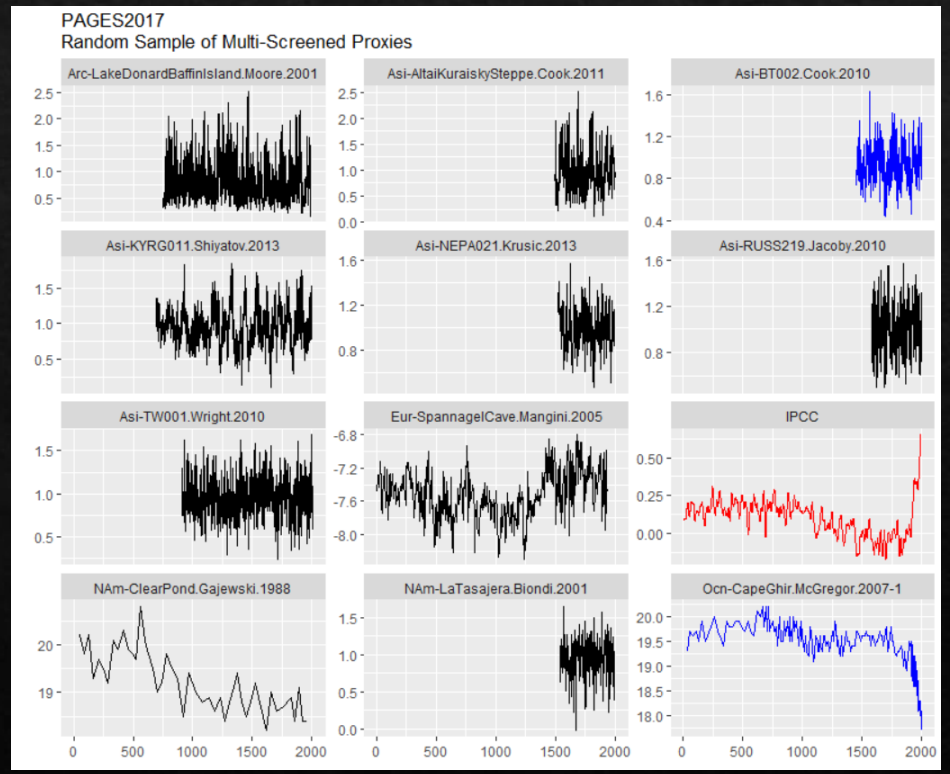
IPCC
RCPs
SSPs

ABSTRACT

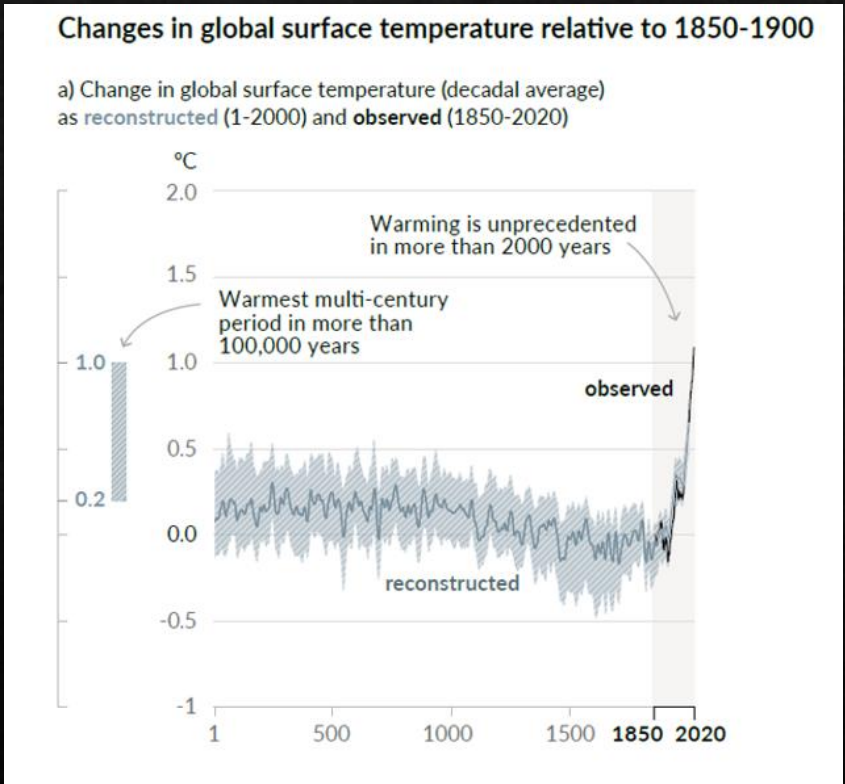
Climate science research and assessments under the umbrella of the Intergovernmental Panel on Climate Change (IPCC) have misused scenarios for more than a decade. Symptoms of misuse have included the treatment of an unrealistic, extreme scenario as the world's most likely future in the absence of climate policy and the illogical comparison of climate projections across inconsistent global development trajectories. Reasons why such misuse arose include (a) competing demands for scenarios from users in diverse academic disciplines that ultimately conflated exploratory and policy relevant pathways, (b) the evolving role of the IPCC – which extended its mandate in a way that creates an inter-relationship between literature assessment and literature coordination, (c) unforeseen consequences of employing a temporary approach to scenario development, (d) maintaining research practices that normalize careless use of scenarios, and (e) the inherent complexity and technicality of scenarios in model-based research and in support of policy. Consequently, much of the climate research community is presently off-track from scientific coherence and policy-relevance. Attempts to address scenario misuse within the community have thus far not worked. The result has been the widespread production of myopic or misleading perspectives on future climate change and climate policy. Until reform is implemented, we can expect the production of such perspectives to continue, threatening the overall credibility of the IPCC and associated climate research. However, because many aspects of climate change discourse are contingent on scenarios, there is considerable momentum that will make such a course correction difficult and contested – even as efforts to improve scenarios have informed research that will be included in the IPCC 6th Assessment.

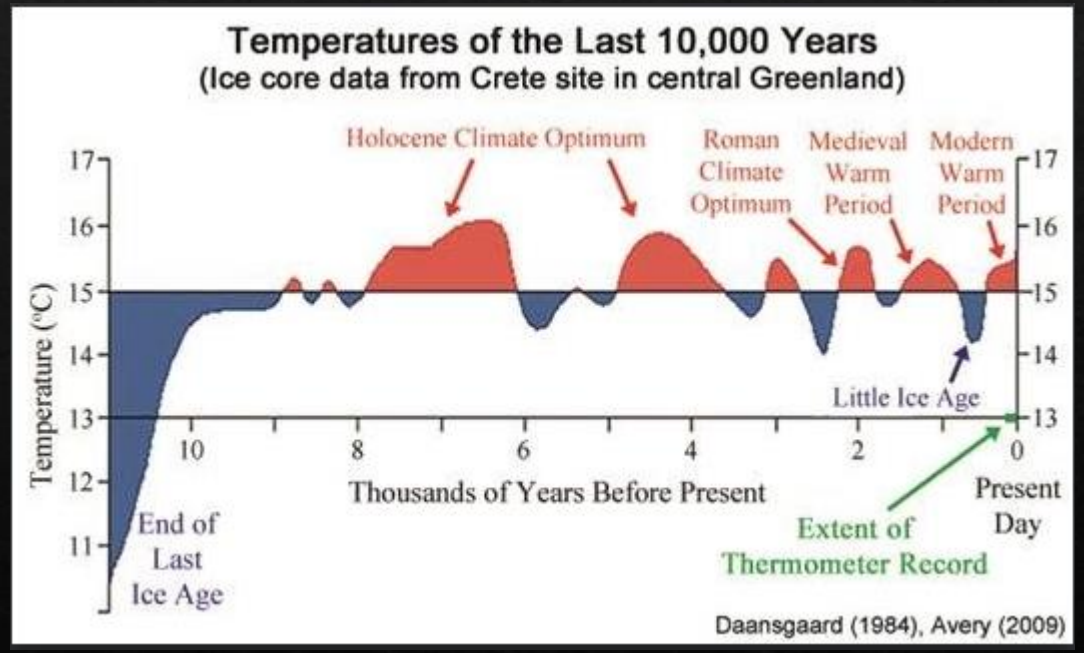
“Hockey Stick” Graphs Have Been Stitched Together as if only NOW is Warm





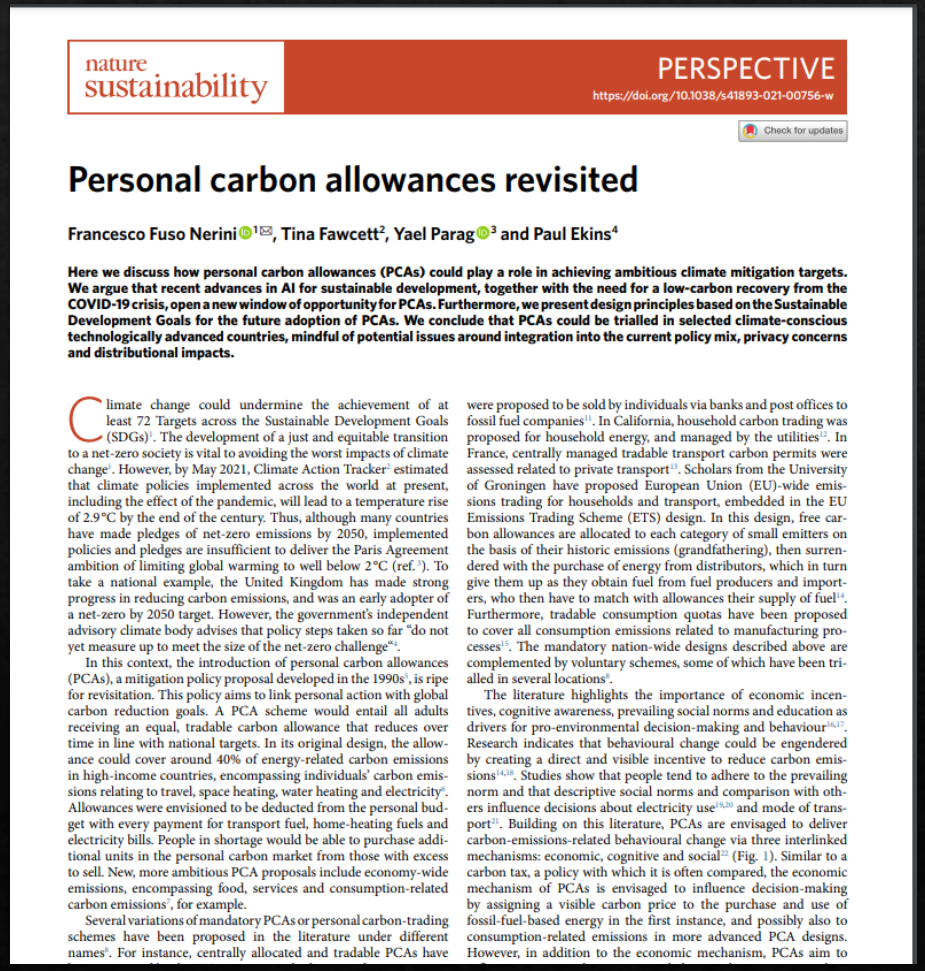
Made up Hockey Stick vs Data from Ice Cores





COVID - CLIMATE Connection

2. Use that target to set an annual carbon cap, which falls on the ski jump trajectory. Then use the cap to set a personal carbon ration. Every citizen is given a free annual quota of carbon dioxide. He spends it by buying gas and electricity, petrol and train and plane tickets. If he runs out, he must buy the rest from someone has has used less than his quota(2). This accounts for about 40% of the carbon dioxide we produce. The rest is auctioned off to companies. It's a simpler and fairer approach than either green taxation or the Emissions Trading Scheme, and it also provides people with a powerful incentive to demand low-carbon technologies. Timescale: a full scheme in place by January 2009.



nature sustainability

PERSPECTIVE

https://doi.org/10.1038/s41893-021-00756-w

Check for updates

Personal carbon allowances revisited

Francesco Fuso Nerini[1], Tina Fawcett[2], Yael Parag[3] and Paul Ekins[4]

Here we discuss how personal carbon allowances (PCAs) could play a role in achieving ambitious climate mitigation targets. We argue that recent advances in AI for sustainable development, together with the need for a low-carbon recovery from the COVID-19 crisis, open a new window of opportunity for PCAs. Furthermore, we present design principles based on the Sustainable Development Goals for the future adoption of PCAs. We conclude that PCAs could be trialled in selected climate-conscious technologically advanced countries, mindful of potential issues around integration into the current policy mix, privacy concerns and distributional impacts.

Climate change could undermine the achievement of at least 72 Targets across the Sustainable Development Goals (SDGs)[1]. The development of a just and equitable transition to a net-zero society is vital to avoiding the worst impacts of climate change[2]. However, by May 2021, Climate Action Tracker[3] estimated that climate policies implemented across the world at present, including the effect of the pandemic, will lead to a temperature rise of 2.9 °C by the end of the century. Thus, although many countries have made pledges of net-zero emissions by 2050, implemented policies and pledges are insufficient to deliver the Paris Agreement ambition of limiting global warming to well below 2 °C (ref. [3]). To take a national example, the United Kingdom has made strong progress in reducing carbon emissions, and was an early adopter of a net-zero by 2050 target. However, the government's independent advisory climate body advises that policy steps taken so far "do not yet measure up to meet the size of the net-zero challenge"[4].

In this context, the introduction of personal carbon allowances (PCAs), a mitigation policy proposal developed in the 1990s[5], is ripe for revisitation. This policy aims to link personal action with global carbon reduction goals. A PCA scheme would entail all adults receiving an equal, tradable carbon allowance that reduces over time in line with national targets. In its original design, the allowance could cover around 40% of energy-related carbon emissions in high-income countries, encompassing individuals' carbon emissions relating to travel, space heating, water heating and electricity[6]. Allowances were envisioned to be deducted from the personal budget with every payment for transport fuel, home-heating fuels and electricity bills. People in shortage would be able to purchase additional units in the personal carbon market from those with excess to sell. New, more ambitious PCA proposals include economy-wide emissions, encompassing food, services and consumption-related carbon emissions[7], for example.

Several variations of mandatory PCAs or personal carbon-trading schemes have been proposed in the literature under different names[8]. For instance, centrally allocated and tradable PCAs have were proposed to be sold by individuals via banks and post offices to fossil fuel companies[11]. In California, household carbon trading was proposed for household energy, and managed by the utilities[12]. In France, centrally managed tradable transport carbon permits were assessed related to private transport[13]. Scholars from the University of Groningen have proposed European Union (EU)-wide emissions trading for households and transport, embedded in the EU Emissions Trading Scheme (ETS) design. In this design, free carbon allowances are allocated to each category of small emitters on the basis of their historic emissions (grandfathering), then surrendered with the purchase of energy from distributors, which in turn give them up as they obtain fuel from fuel producers and importers, who then have to match with allowances their supply of fuel[14]. Furthermore, tradable consumption quotas have been proposed to cover all consumption emissions related to manufacturing processes[15]. The mandatory nation-wide designs described above are complemented by voluntary schemes, some of which have been trialled in several locations[8].

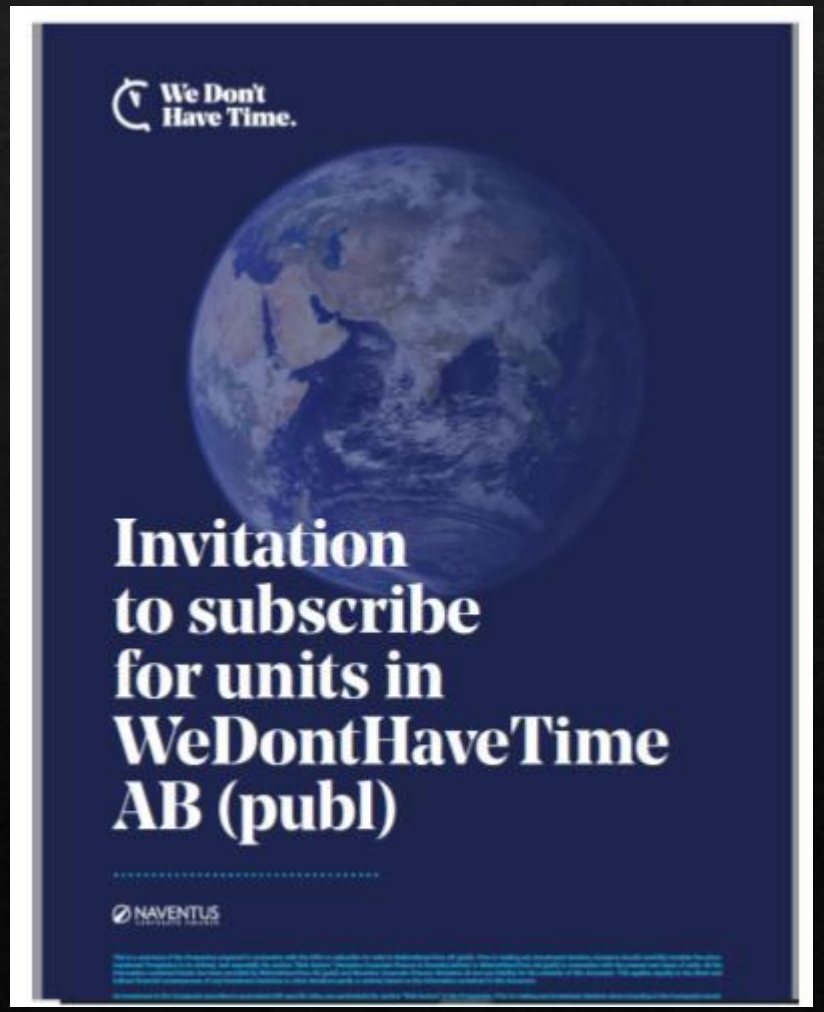
The literature highlights the importance of economic incentives, cognitive awareness, prevailing social norms and education as drivers for pro-environmental decision-making and behaviour[16,17]. Research indicates that behavioural change could be engendered by creating a direct and visible incentive to reduce carbon emissions[14,18]. Studies show that people tend to adhere to the prevailing norm and that descriptive social norms and comparison with others influence decisions about electricity use[19,20] and mode of transport[21]. Building on this literature, PCAs are envisaged to deliver carbon-emissions-related behavioural change via three interlinked mechanisms: economic, cognitive and social[22] (Fig. 1). Similar to a carbon tax, a policy with which it is often compared, the economic mechanism of PCAs is envisaged to influence decision-making by assigning a visible carbon price to the purchase and use of fossil-fuel-based energy in the first instance, and possibly also to consumption-related emissions in more advanced PCA designs. However, in addition to the economic mechanism, PCAs aim to

https://www.nature.com/articles/s41893-021-00756-w.pdf

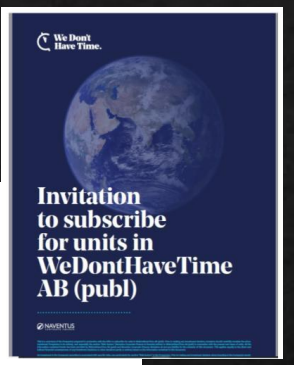
Greta was backed by Carbon Offset Kings

Greta Thunberg and George Monbiot make short film on climate crisis - video

Environmental activists Greta Thunberg and George Monbiot have helped produce a short film highlighting the need to protect, restore and use nature to tackle the climate



We Don't Have Time IPO

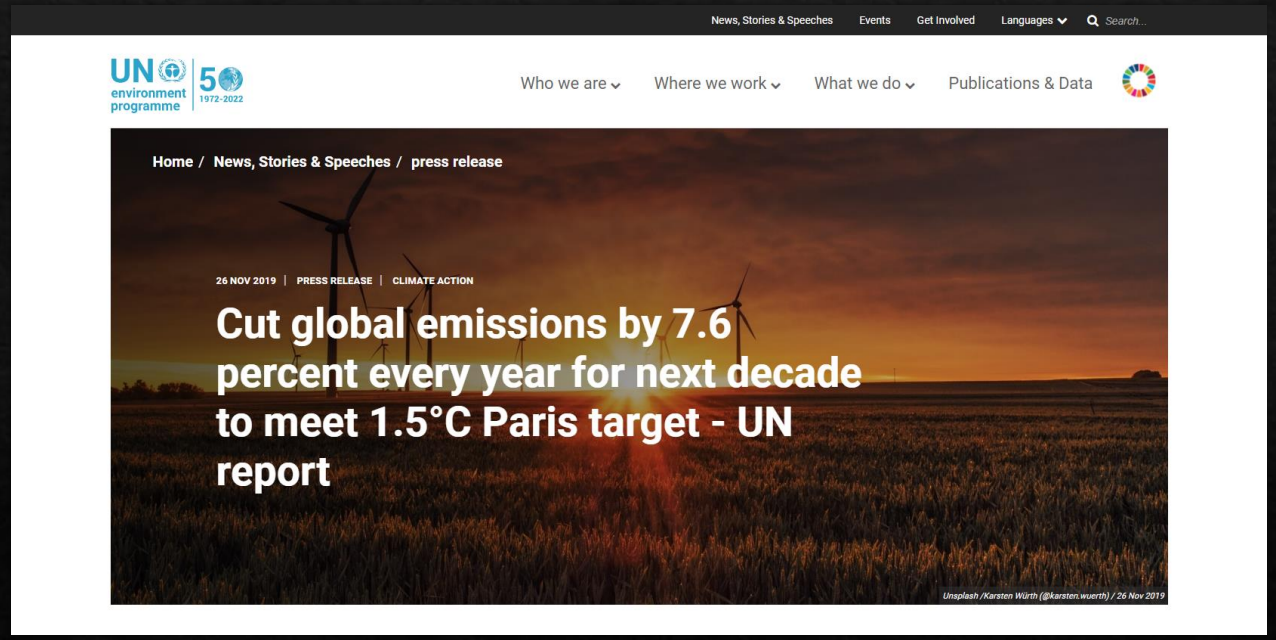


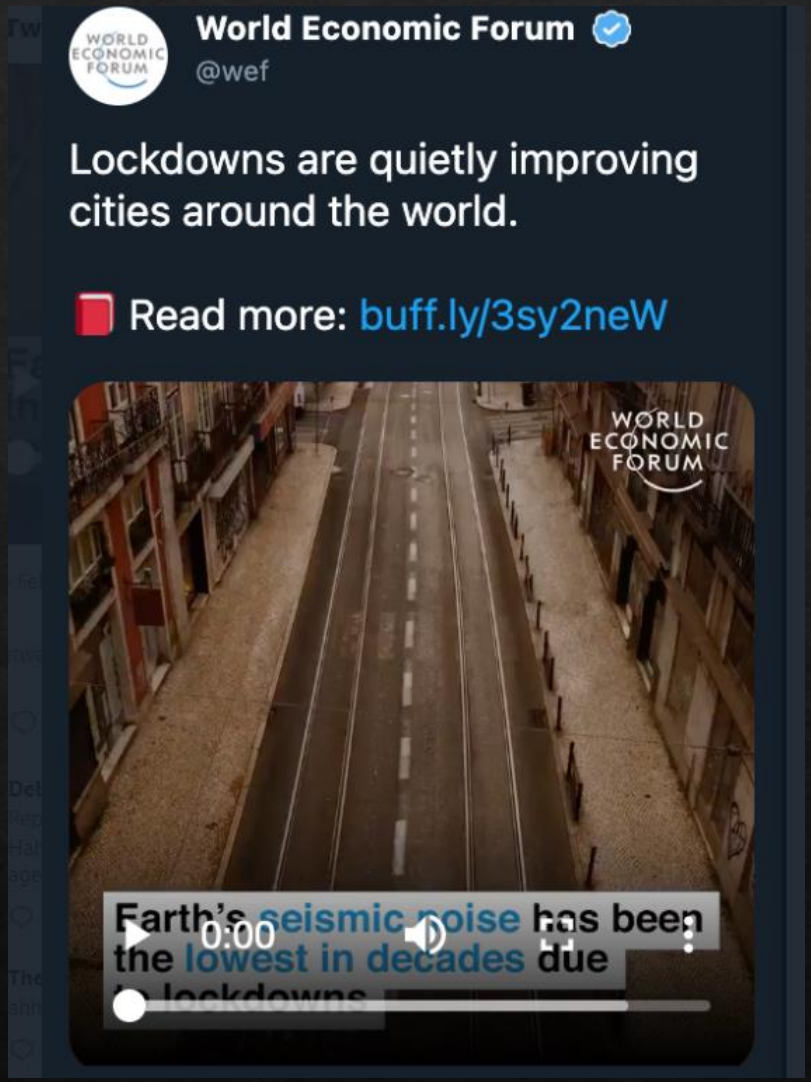
> *"Our goal is to become at least 100 million users. It is an eighth of all who have climbed on social media. Only last month we managed to reach 18 million social media accounts according to a media survey that Meltwater news made for us. At Facebook, we are currently seven times the number of followers among the world's all climate organizations. We are growing with 10,000 new global followers per day on Facebook." — Ingmar Rentzhog interview with Miljö & Utveckling, October 15, 2018*

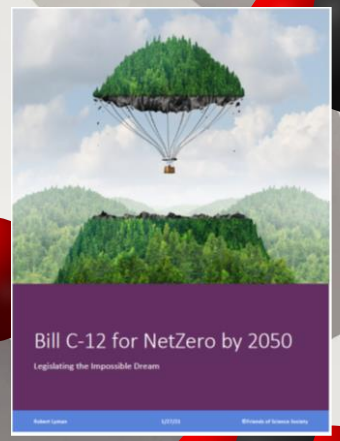
We Don't Have Time identifies itself as a movement and tech start-up that is currently developing "the world's largest social network for climate action". The "movement" component was launched on April 22, 2018. The web platform is still in the progress of being built, but is to launch on April 22, 2019 (coinciding with Earth Day). "Through our platform, millions of members will unite to put pressure on leaders, politicians and corporations to act for the climate." The start-up's goal to rapidly achieve 100 million users has thus far attracted 435 investors (74.52% of the company's shares) via the web platform FundedByMe.

https://blog.friendsofscience.org/wp-content/uploads/2019/12/Greta_prospectus_short_eng.pdf

Climateers Love Lockdowns







Métro

Emergency measures inspired by the pandemic to fight climate change

https://journalmetro.com/societe/environnement/2686632/mesures-urgence-lutte-changements-climatiques/

Pascal Gaxet

Emergency measures inspired by the pandemic to fight climate change

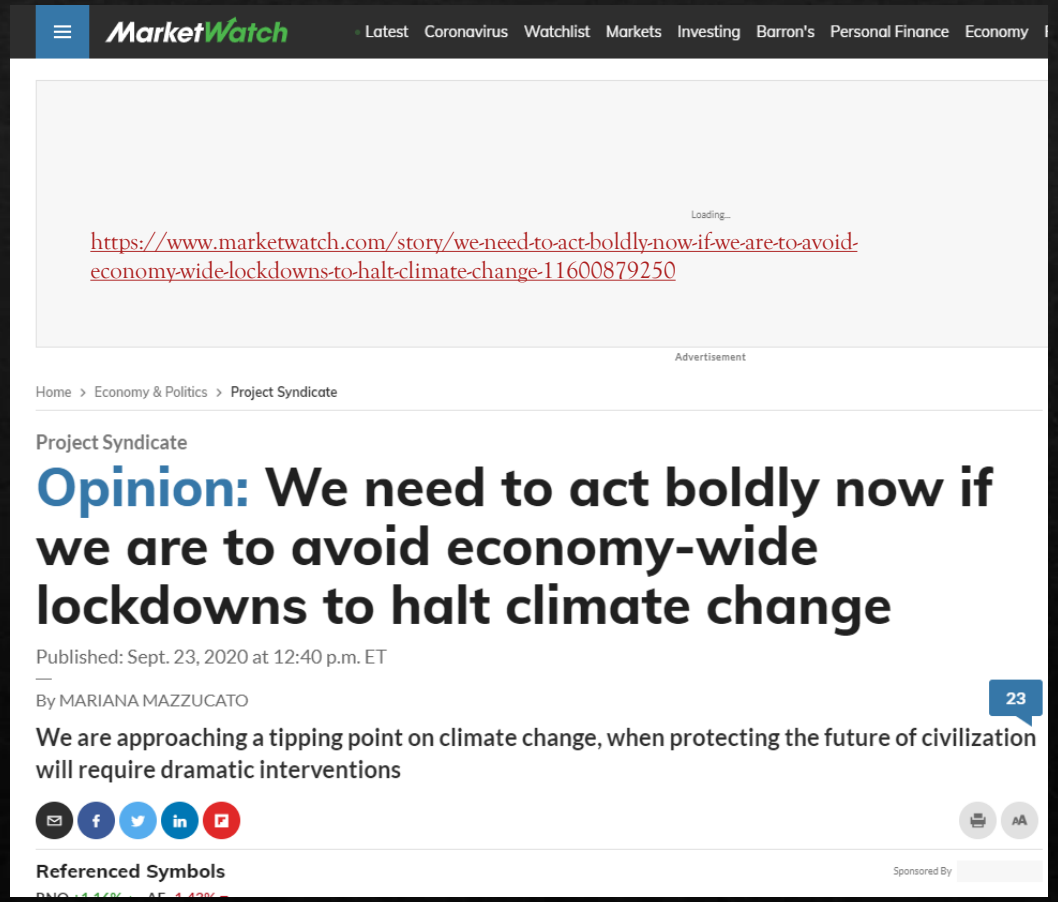
- After nearly two years of the COVID-19 pandemic , Quebec, Canada and the world have had a glimpse of the possibilities that open up when a war effort is applied to a major problem. What would a war effort look like, with the application of emergency measures, in the fight against climate change?...
- He claims:
- The sixth report of the Intergovernmental Panel on Climate Change (IPCC) is damning. Almost all of global warming is due to human activity, and **the world has only four years to begin a major reduction in greenhouse gas (GHG) emissions**.

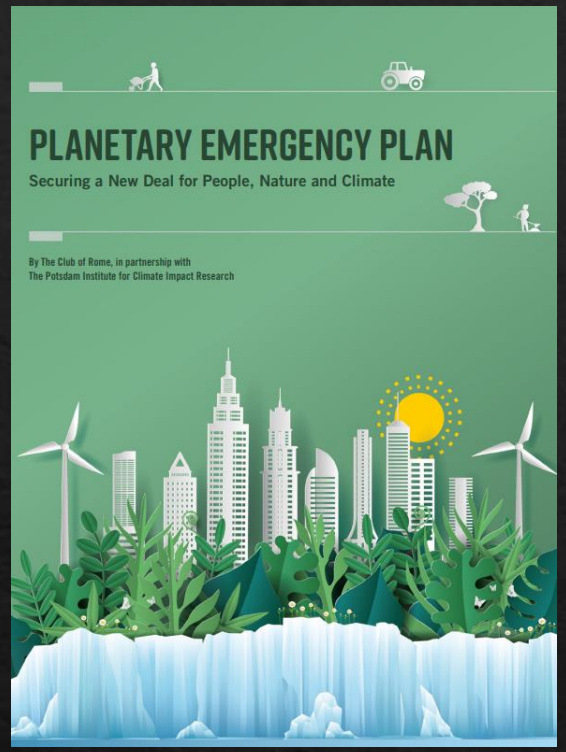
War Measures Act?

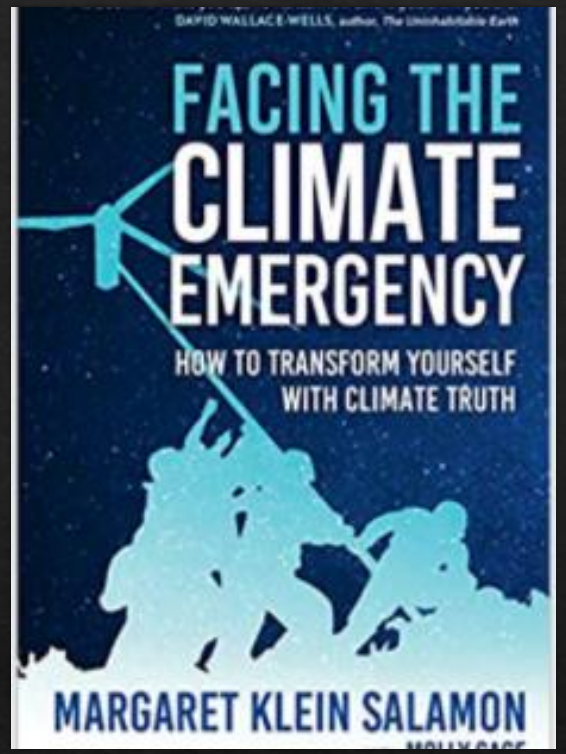
- However, it is at the federal level that the room for maneuver is greatest since it has “emergency” competence. The Emergency Measures Act gives the government broad powers. The government can then, by decree or regulation, limit gatherings or travel. During the pandemic, the government did not use this law to limit the movement of Canadians, but rather applied the Quarantine Act to control arrivals in the territory.
- But decrees or regulations related to this law, formerly known as the War Measures Act, are subject to parliamentary approval. Moreover, the law has not been used since the crisis of October 1970.

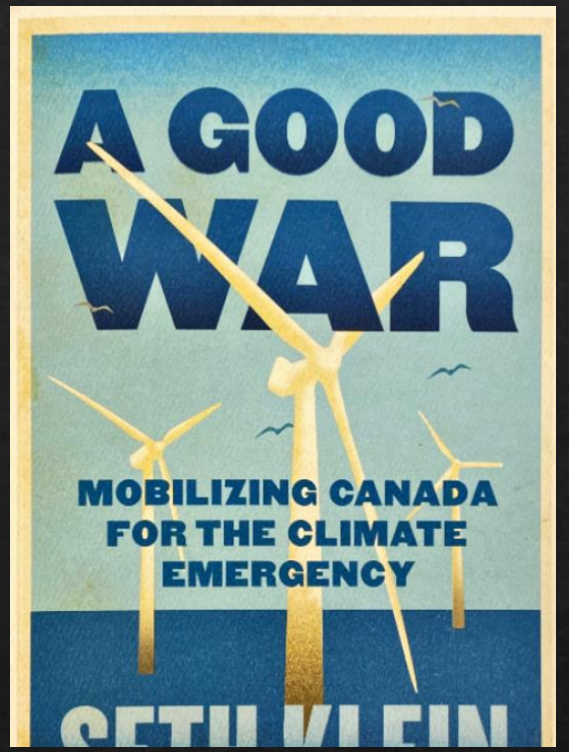
Four anti-covid measures to fight GHGs

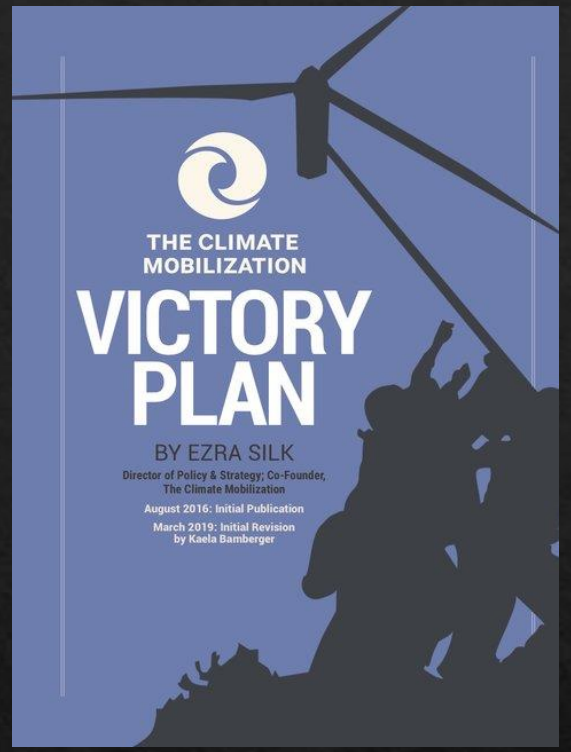
- Mandatory telework
- Car curfew
- Limited international travel
- “Environmental” passport
- Aka Personal “Carbon Ration”









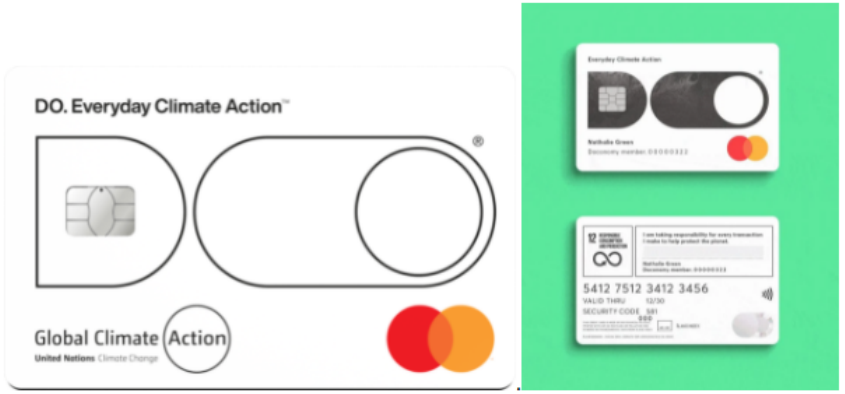


Climate Emergency Planned for Some Time

DO monitors and cuts off spending, when we hit our carbon max - WEF

https://www.climatedepot.com/2021/09/13/new-co2-monitoring-credit-card-enables-tracking-of-carbon-footprint-on-every-purchase-monitors-cuts-off-spending-when-we-hit-our-carbon-max-mastercard-un-join-forces/

carbon footprint on every purchase." The credit cards feature the slogan on them reading "DO. Everyday Climate Action" and have a personal pledge on the rear of the card boasting: "I am taking responsibility for every transaction I make to help protect the planet." The Mastercards feature the UN "Global Climate Action" logo on them as well.

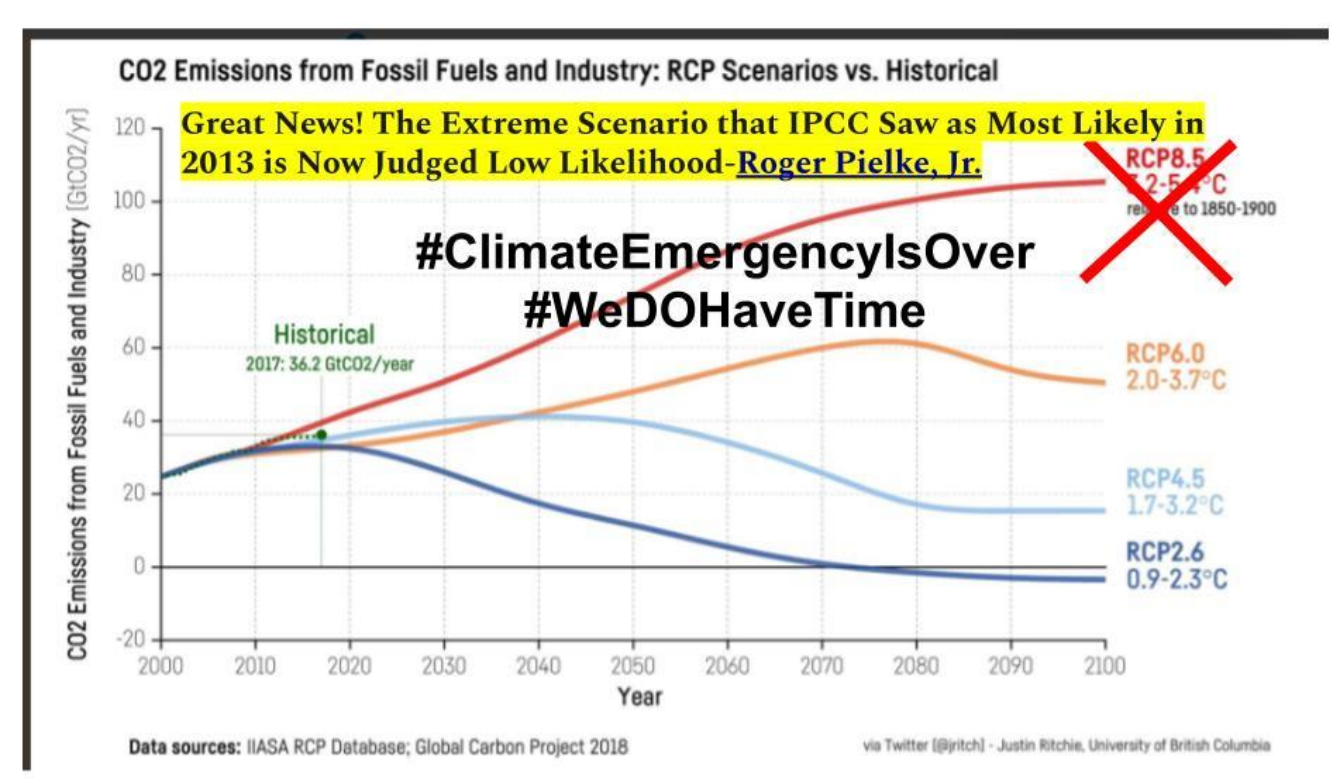


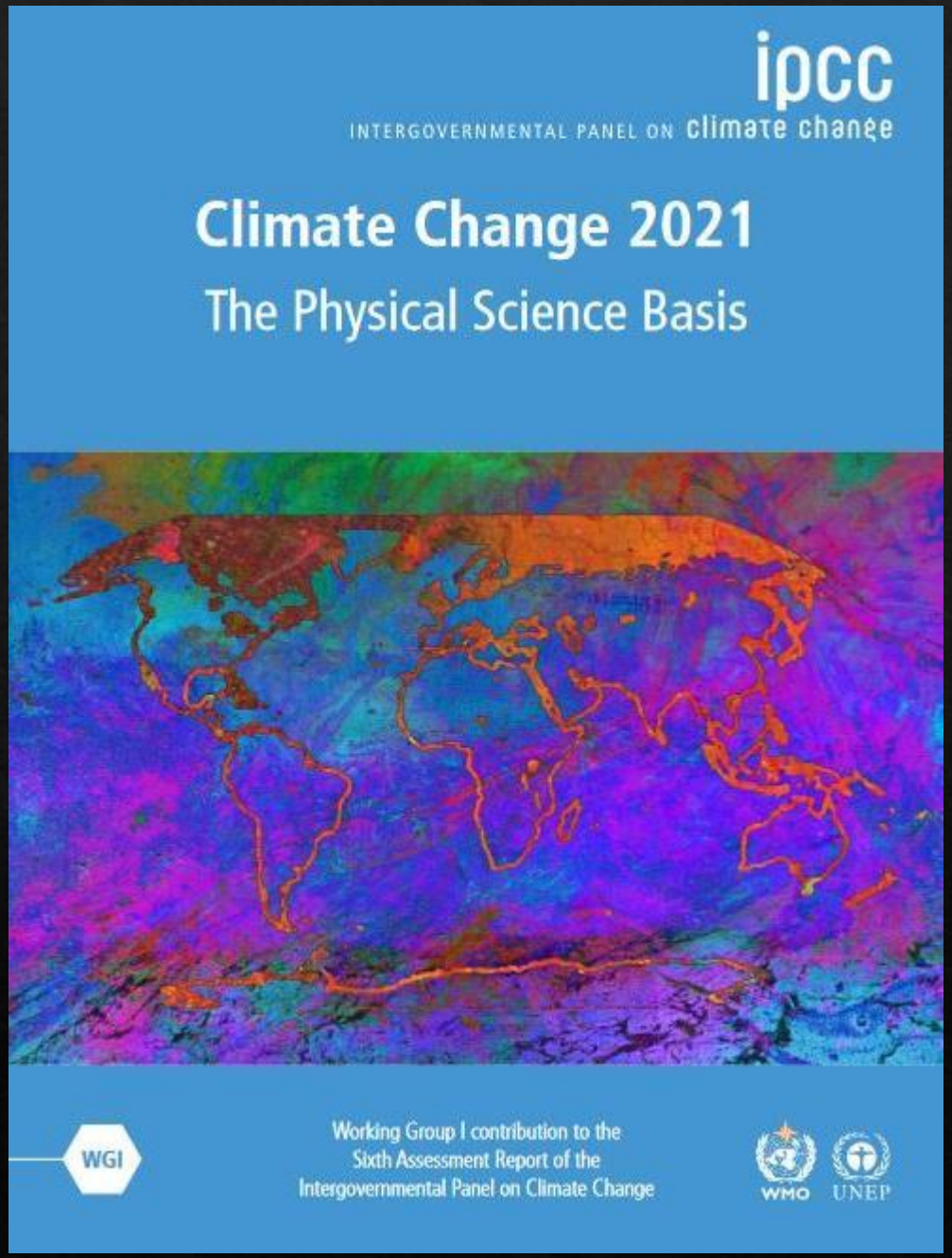
The World Economic Forum praised Doconomy. "While many of us are aware that we need to reduce our carbon footprint, advice on doing so can seem nebulous and keeping a tab is difficult. DO monitors and cuts off spending, when we hit our carbon max," the World Economic Forum wrote on the Doconomy CO_2 monitoring website.

The Doconomy credit card website explains: "With fat, sugar and salt levels labeled on food we buy, why shouldn't our CO2 emissions be just as visible?" asks the Doconomy website. "This type of information shouldn't be a premium or luxury that consumers pay for, but rather an essential part of every shopping journey." The website details how the credit card will help consumers "understand their impact by presenting their carbon footprint on every purchase."

Mathias Wikström, the CEO of Doconomy, explained, "Reducing carbon emissions needs to be prioritized by all parties. At Doconomy we are proud to engage and educate around our lifestyle's impact on the planet...The financial sector has developed a tremendous efficiency. Now that same force can address the planetary fragility."

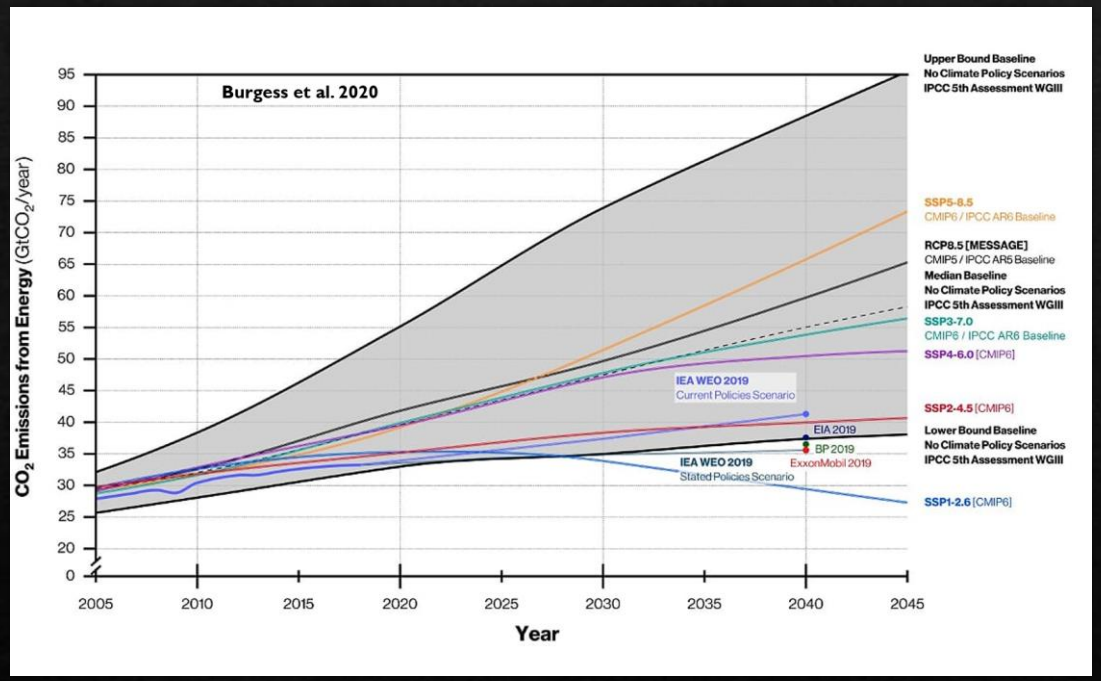
Climate Emergency is Over





https://rogerpielkejr.substack.com/p/how-to-understand-the-new-ipcc-report

Trouble Turning the Green Titanic



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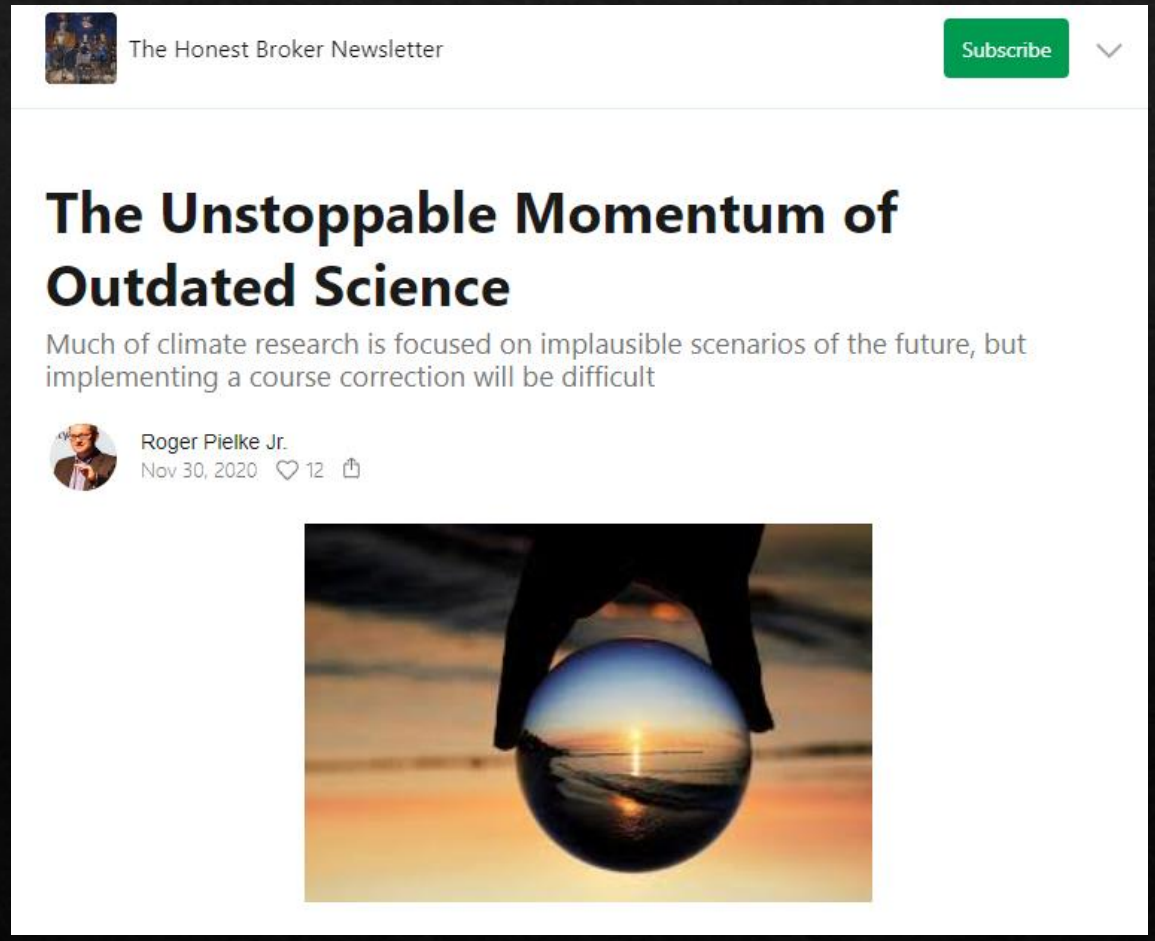

Lockdowns are Deadly

Covid Lockdown Cost/Benefits: A Critical Assessment of the Literature

Douglas W. Allen*

April 2021

ABSTRACT

An examination of over 80 Covid-19 studies reveals that many relied on assumptions that were false, and which tended to over-estimate the benefits and underestimate the costs of lockdown. As a result, most of the early cost/benefit studies arrived at conclusions that were refuted later by data, and which rendered their cost/benefit findings incorrect. Research done over the past six months has shown that lockdowns have had, at best, a marginal effect on the number of Covid-19 deaths. Generally speaking, the ineffectiveness of lockdown stems from voluntary changes in behavior. Lockdown jurisdictions were not able to prevent noncompliance, and non-lockdown jurisdictions benefited from voluntary changes in behavior that mimicked lockdowns. The limited effectiveness of lockdowns explains why, after one year, the unconditional cumulative deaths per million, and the pattern of daily deaths per million, is not negatively correlated with the stringency of lockdown across countries. Using a cost/benefit method proposed by Professor Bryan Caplan, and using two extreme assumptions of lockdown effectiveness, the cost/benefit ratio of lockdowns in Canada, in terms of life-years saved, is between 3.6–282. That is, it is possible that lockdown will go down as one of the greatest peacetime policy failures in Canada's history.

http://www.sfu.ca/~allen/LockdownReport.pdf

There is no “Code Red” in the IPCC Report

https://blog.friendsofscience.org/2021/08/12/code-red-climate-con-and-magical-thinking-on-netzero/

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Author

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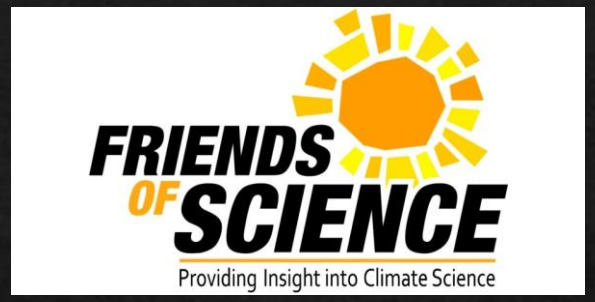
Thank you.



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- Friends of Science Society is an independent group of earth, atmospheric and solar scientists, engineers, and citizens that is celebrating its 19th year of offering climate science insights. After a thorough review of a broad spectrum of literature on climate change, Friends of Science Society has concluded that the sun is the main driver of climate change, not carbon dioxide (CO2).
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