



Minutes – Friday, August 25, 2023
Video Conference
9 am to 11 am

Attending: Paul Moore, Alice Green, Dawn Montanye, Dave Bradley, Aaron Fernando, Dan Lamb, Gerri Wiley, Guillermo Metz, Ingrid Zabel, Jack Wright, Janelle Bourgeois, Karim Beers, Jerry, Leigh Miller, Marie McRae, Nick Goldsmith, Sara Hess, Scott Doyle, Andrew Gil, J. Christopher Skawski, Jon Jensen, Irene Weiser, Peter Bardaglio

Climate Change in the News – Peter Bardaglio

In keeping with past tradition, Peter reviewed the year's most significant climate change developments for the August meeting. The main theme: extreme weather events have become so frequent in the past several months that the climate crisis, unfortunately, has become climate chaos.

- Atmospheric CO₂ hit another record high in 2023
- In May, Mauna Loa Observatory in Hawaii recorded average concentration of atmospheric CO₂ at 424 ppm, compared to 315 ppm in 1958
- Increase of 3.0 ppm since May 2022 – fourth-largest annual increase and 50% higher than pre-industrial levels
- CO₂ levels were consistently around 280 ppm for almost 6,000 years of human civilization
- Rate of increase in emissions over past 60 years more than 100 times faster than when last ice age ended
- Annual emissions have increased every decade since mid-20th century – from 11 billion tons of CO₂ per year in 1960s to over 36 billion tons in 2022
- Now in territory not seen for more than 3 million years – at that time global surface temperature was 4.5-7.2°F warmer than during pre-industrial era
- Despite decades of negotiation, global community unable to significantly slow, let alone reverse, annual increases in atmospheric CO₂ levels
- July 2023 warmest July in 174-year NOAA record – January-July global surface temperature ranked as third warmest on record
- Global surface temperatures last month 2.02°F above 20th-century average – very likely 2023 will be among top 5-warmest years on record
- July 2023 marked 47th consecutive July with temperatures above 20th-century average – for fourth consecutive month, global ocean surface temperature hit record high
- UN Secretary-General António Guterres last month: “The era of global warming has ended; the era of global boiling has arrived. Leaders must lead. No more hesitancy. No more excuses. No more waiting for others to move first. There is simply no more time for that.”
- Dr Joëlle Gergis, climate scientist at Australian National University, also in July: “What is playing out all over the world right now is entirely consistent with what scientists expect. No one wants to be right about this. But if I’m honest, I am stunned by the ferocity of the impacts we are currently experiencing.”
- Climate apartheid: top 10% of world’s carbon emitters responsible for almost 50% of global greenhouse gas emissions
- Top 1% of global emitters generate more emissions than the entire bottom half
- Carbon inequalities within countries now bigger than between countries
- High concentration of global GHG emissions among relatively small fraction of population in both emerging and rich countries
- Agricultural productivity has declined by 30% in many low-income regions due to climate change, aggravating poverty and food insecurity

- Death toll from extreme weather disasters 15 times as high in vulnerable nations as in wealthier parts of world
- Most sobering climate change news of year: system of ocean currents regulating climate in North Atlantic could collapse by end of century due to global warming
- Last time major slowdown took place in Atlantic circulation, 12,800 years ago, it pushed Europe into deep cold for over 1,000 years
- Study by Denmark researchers published at end of July
- As Gulf Stream moves north it becomes colder and denser, causing it to sink to deep ocean and move back toward the equator
- Melting of Greenland ice sheet adding huge amounts of fresh water to North Atlantic, disrupting balance of heat and salinity that keeps overturning moving
- One of key climate tipping points scientists are watching closely, along with thawing of Arctic permafrost, loss of Amazon rain forest, collapse of West Antarctic ice sheet, etc.
- Close runner up: global fossil fuel subsidies
- International Monetary Fund report this week: Fossil fuels subsidized at rate of \$13 million a minute in 2022
- Total subsidies for oil, gas, and coal in 2022 were \$7 trillion
- Equivalent to 7% of global GDP – almost double what world spends on education
- Biggest subsidizers of fossil fuels: China, US, Russia, EU, and India – ending subsidies should be centerpiece of climate action, according to IMF
- Would put world on track to keep global heating below 2°C, prevent 1.6 million air pollution deaths a year, and increase government revenues by trillions of dollars
- G20 nations cause 80% of global carbon emissions – spent record \$1.4 trillion on fossil fuel subsidies in 2022
- Recent extreme weather events once again called attention to accelerating climate crisis
- Millions endured record temperatures this summer in Europe, US, and China
- Intense heatwaves in these regions “not rare anymore,” climate scientists have concluded
- China especially hard hit by extreme heat – country registered all-time high temperature of 126°F on July 16 in NW China village – Beijing has posted record number of days at or above 95°F this summer
- Heatwave in China was “at least 50 times more likely” due to climate change, according to World Weather Attribution service
- Chinese cities opened air raid shelters to provide relief and employers ordered to restrict outdoor work due to soaring temperatures – electricity production reached record highs
- Boiling the ocean: Earth’s oceans hottest they’ve been in modern history by large margin
- Average sea surface temperature spiked to record high in April – it’s remained exceptionally warm ever since
- In late July water off Florida Keys reached 101.1°F
- El Niño has contributed to spike in ocean temperatures, but influence of human-driven climate change undeniable
- Global sea surface temperatures increasing since early 20th century – extreme heat destroying coral reefs and other marine ecosystems
- Ocean covers about 70% of world’s surface – it’s absorbed more than 90% of heat generated by human activity
- Water has much higher capacity than land to absorb and store heat – big cost, however: as ocean stores more heat, it expands, leading to higher sea levels
- Wildfires in Canada: 2023 Canadian wildfire season largest and most devastating on record
- Nearly 38 million acres have burned – area almost size of Georgia
- Double size of previous Canadian record – more than dozen fatalities and thousands of evacuations
- Smoke turned sky in NYC red and spread as far south as Atlanta – more than 1,000 active wildfires now burning – more than 650 considered out of control
- Scientists found conditions setting off Quebec fires earlier this summer twice as likely to occur due to climate change – also made those conditions 20% to 50% more intense
- Historic wildfire season expected to continue and may become even worse in coming weeks
- Flash floods in NY and Vermont: intense storms in early July dropped more than month’s worth of rain overnight in NY’s Hudson Valley and Vermont

- Caused historic flooding that killed at least one person, trapped dozens of others, and washed away major roads
- Vermont saw flooding greater than during Tropical Storm Irene, one of worst floods in 100 years
- Washington Post analysis of data indicated 100-year storm can now be expected to occur once every 19 years in parts of NY – parts of Vermont could face extreme rain events twice as often
- Makes clear no place entirely safe from extreme weather caused by climate change – instead, more about picking extreme weather you can tolerate
- Climate scientists have predicted for years global warming would lead to more extreme weather
- IPCC synthesis report released in March concluded climate change impacts already more far-reaching and extreme than anticipated
- Global warming of 1.1°C has already set off unprecedented changes to Earth's climate – 3.3 billion to 3.6 billion people currently live in countries highly vulnerable to climate impacts
- IPCC Sixth Assessment Report
 - Concentrations of CO₂ unmatched for at least 2 million years
 - Glacial retreat unmatched for +2 million years
 - Last decade warmer than any period for about 125,000 years
 - Sea level rise faster than any prior century for 3,000 years
 - Summer Arctic ice coverage smaller than anytime in last 1,000 years
 - Ocean warming faster than at any time since last Ice Age
 - Ocean acidification at highest level of last 26,000 years
- Rapid decarbonization only way out – to limit global warming to 1.5°C GHG, emissions need to peak before 2025 at very latest, get cut in half by 2030, and reach net zero by 2050
- Global use of coal must fall 95% by 2050, oil must decline by 60%, and gas by about 45%
- Path to net zero narrow but achievable – annual clean energy investment worldwide needs to increase between 3 and 6 times by 2030
- Funding for adaptation as well as loss and damage also needs to rise dramatically – developing nations will need \$127 billion per year by 2030 and \$295 billion per year by 2050
- How do Americans view climate change in 2023?
- Yale annual survey, “Climate Change in the American Mind”: about three in four Americans (74%) think global warming is happening
- Only 15% of Americans think global warming is not happening – 11% say they don't know if global warming is happening
- More than half of Americans (53%) are either “extremely” or “very” sure global warming happening
- Far fewer (8%) are “extremely” or “very” sure global warming isn't happening
- 6 in 10 Americans (61%) understand global warming is mostly human caused
- Less than 1 in 3 (28%) think it's due mostly to natural changes in environment
- Almost 6 in 10 Americans (58%) understand most scientists think global warming is happening – has trended upward since survey began in 2008
- About one in five (22%) still think lots of disagreement persists among scientists about whether global warming is happening – only 2% believe most scientists think it's not happening
- Two-thirds of Americans (66%) say they are at least “somewhat worried” about global warming
- 30% of Americans say they are “very worried” about global warming – has trended upward since survey began in 2008
- 2 in 3 Americans (66%) say they “rarely” or “never” discuss global warming with family and friends
- 1 in 3 (34%) say they discuss global warming “occasionally” or “often”
- Washington Post-UMD Poll, July 2023: 74% of Americans say they've experienced extremely hot days in past 5 years
- Only 35% of Reps/Lean Reps say climate change major factor – 85% of Dems/Lean Dems say so
- Partisan divide persists with other extreme weather events – droughts severe storms, flood, and wildfires
- Republican views have changed little since 2019, while Democratic percentage has increased from 79% to 85%
- Pew Research Center Survey, May-June 2023: two-thirds of Americans say US should prioritize developing renewable energy sources over expanding fossil fuel production
- Nine-in-ten Dems and Lean Dems say US should prioritize developing renewable energy sources

- Among Reps and Lean Reps, 42% support developing renewable energy sources, while 58% say US should prioritize expanding fossil fuel exploration and production
- Ready for some good news?
- Inflation Reduction Act turned one-year old this month – clear success so far
- Has spurred investment in massive buildout of battery and EV manufacturing across country
- Nearly 80 major clean energy manufacturing facilities have been announced – investment equal to previous 7 years combined
- Overall, more than 270 new clean energy projects in pipeline, with private investments totaling around \$132 billion
- Congressional Budget Office projected IRA would result in roughly \$400 billion in government spending, but it's on track to be at least three times that
- IRA and related 2021 infrastructure law could reduce overall US electricity costs between \$27 billion and \$38 billion through 2030, according to Energy Department
- The global renewables landscape: renewables will be largest source of global electricity generation by early 2025, surpassing coal
- Cost of generating electricity from solar and wind falling fast – now cheaper than gas, oil, or coal in many areas
- Record \$1.7 trillion worldwide expected to be invested this year in technologies such as wind, solar, EVs, and batteries – compared with \$1 trillion in fossil fuels
- China projected to double its wind and solar capacity by 2025, 5 years ahead of schedule
- In Britain, roughly one-third of electricity now generated by wind, solar, and hydropower
- Most inspiring news of 2023: victories of young climate activists in court
- Youth in Montana won landmark lawsuit this month – judge ruled state's failure to consider climate change when approving fossil fuel projects unconstitutional
- Federal judge ruled in June that young climate activists in Oregon can go to trial years after lawsuit first filed – attempt to hold nation's leadership accountable for its role in climate change
- Part of wave of litigation related to climate change targeting companies and governments around globe
- Ecuador voted earlier this week to halt oil drilling in one of most biodiverse places on earth – 59% of voters sided with young activists who spent decade fighting for referendum – first time citizens voted to leave country's oil in ground
- Katherine Hayhoe, climate scientist, Texas Tech University and Nature Conservancy: "Sharing scary facts about climate change won't motivate people to take action. If we don't know what to do, scary facts don't activate us, they just paralyze us."
- "What works is talking about how climate change affects us here and now, in ways that are relevant to our lives today. And then we start to look for solutions ... Then people will feel empowered and keep pushing for more change."

Discussion and Roundtable Updates – All

- Peter asked group what jumped out from his presentation
- Dawn Montanye raised issue of climate grief – psychological impact of global warming, especially on younger people
- IMF report on global fossil fuel subsidies very striking – cheap oil has been propping up economy and now IMF saying end of subsidies and cheap oil would better serve economy in long run because of costs associated with climate breakdown and extreme weather events
- Peter: When IMF calls for end of fossil fuel subsidies, that's a big moment – useful information in report to use in advocating for end of at least some of fossil fuel subsidies in NY
- Nick Goldsmith asked for clarification about point that carbon inequalities within countries now bigger than between countries
- Peter explained that as developing nations industrialize and increase their GHG emissions, elites in those countries are generating by far larger proportion of these emissions than majority of population
- Irene Weiser: Good news shared in presentation mostly about potential – so many logjams and obstructions halting progress
- Utilities and PSC in NY, for example, dragging their feet – political will is still lacking
- Peter pointed out that anger, not despair, should be part of response – but anger that leads to action, not paralysis

- Irene will share talking points to persuade governor and PSC to deny rate increases requested by NYSEG
- Paul Moore: Carbon emissions in atmosphere have increased 21% just since 1990 – underscores need to act quickly to halt runaway climate change
- Peter agreed and pointed out need to quickly reduce emissions is why Bob Howarth has focused on methane – 80 times more powerful than carbon dioxide – reducing methane emissions dramatically would buy more time for us to make progress on carbon dioxide emissions
- Paul talked about his frustration over gap between what we say and what we do – what are most effective steps to take? Beliefs and vested interests get in way
- Peter reiterated importance of talking with friends, neighbors, and friends about climate and how dire situation is, at same time pointing out things we can do, both individual steps to reduce our carbon footprint and collective action
- Referenced Karim Beers' recent article in Tompkins Weekly, noting that technological change not sufficient to get where we need to go in terms of climate justice, in particular – cultural change is crucial
- Best way to mitigate climate despair is to take anger that we feel and turn it into action that connects with other people and builds community of activists to move forward together
- Can see this happening in Ithaca and Tompkins County, and it has made difference, but frustrating that it hasn't made more of difference
- Will be interesting to see how upstate NY, in particular, reacts to need to build utility-scale solar and wind projects – only way to meet goals of CLCPA
- Dave Bradley: Construction of large-scale renewable energy producers a kind of collective action – underscored potential of pumped hydro in region for energy storage
- Right wing organizations have been very effective in blocking these largescale projects
- Marie McRae: Part of group at Unitarian Church working with BlocPower to install heat pumps in at least one of buildings – hope it will get conversations going in congregation about other steps people can take
- Alice Green talked about how Clean Energy Community incentives in Dryden have qualified town for \$100,000 grant from NYSEDA to seal envelope and install heat pumps in DPW building – hope it can be model for other municipal buildings in state
- Also been able to connect with sustainability club at Dryden High School – two voting members of town's climate smart community task force are from the club – two of members will be talking about how young people can be involved in municipal decision making at upcoming NYSACC conference
- Next step they'll be helping with is creation of climate adaptation and resiliency plan – hope to get new plan adopted by end of year
- Peter: Very impressed with how young people in Dryden helping to build culture of change – started with opposition to fracking and now has become positive effort to reduce community's carbon footprint
- Important to recognize and celebrate community achievements without becoming complacent
- Ingrid Zabel: PRI has been focusing on education and outreach regarding climate change – recently expanded Earth@Home website to include sections on climate and biodiversity: <https://climate.earthathome.org/>
- Ingrid also noted feedback station at Museum of the Earth's new exhibit on climate change – every two weeks post news item about climate change and ask people to respond, either in video or text, and then post these responses
- Way to get people talking about climate change and seeing what other people are saying about it – also have it in online version of climate exhibit: <https://www.museumoftheearth.org/changing-climate/share-your-views>
- Peter remarked on terrific educators at PRI and their excellent work in this area, including Teacher-Friendly Guide to Climate Change: <https://climate.earthathome.org/teacher-friendly-guide/>
- Peter asked Dawn to talk about what's going on currently at CCETC
- Dawn: We have three programs that Environment Issues team is working on: transportation, electrification, and waste reduction/conversion
- New financial resources being channeled into effort to get off fossil fuels – Guillermo Metz and Karim Beers leading energy work, helping municipalities move towards electrification and reducing GHG emissions and working with individual homeowners to understand incentives and install air source heat pumps

- Also providing information on induction stoves and using PowerHouse to demonstrate energy issues with hands-on exhibits
- Working in transportation area to move people away from single-occupancy vehicles to multi-modal transportation as well as education about EVs and access to them for low to moderate income folks
- Food waste reduction and diversion another area of focus, both at individual household and large event levels
- Guillermo Metz: Working with municipalities across Southern Tier via Climate Smart Communities (climate adaptation and resilience) and Clean Energy Communities (GHG emission reductions in municipal operations)
- Also working behind scenes with City of Ithaca on Green New Deal – also working with cooperative extension educators across state – focused last three years on issues related to large-scale solar in rural areas and providing information to variety of stakeholders
- Jack Wright talked about PowerHouse – using it around eight counties of Southern Tier as part of outreach to community energy advisors in region connected with Clean Energy Hub – great tool to demonstrate some of energy choices in our homes such as LED lighting, energy efficient appliances, insulation, and heating systems
- Karim Beers: Things are going well with Southern Tier Clean Energy Hub – pretty much fully staffed at this point – core of staff are community energy advisors such as Leigh Miller and Jack – also have other staff working on communications, administrative support, and workforce training
- One of current challenges with transition involves carrying out commitment to lower income households, while at same time continuing work of various HeatSmart campaigns in region, which tended to focus on better-resource families
- Nick Goldsmith updated group on activities of Park Foundation’s Sustainable Ithaca – providing \$1.8 million in grants to local sustainability projects – providing \$30 million at national level to environmental, democracy, and independent media efforts
- Nick also noted Park’s recent successful efforts to diversify staff and board at foundation – equity effort somewhat more challenging when it comes to identifying and working with sustainability leaders
- Peter also highlighted importance of Park’s work regarding extension of no-interest loans to local nonprofits facing financial challenges
- Nick noted that loans can also be made available to organizations who receive reimbursement-type grants from state or federal government to help them bridge financial gap
- Nick and Peter both recognized and praised work of Jon Jensen in establishing Sustainable Ithaca program