CARBON-INDUCED CLIMATE CHANGE, AND WHAT WE CAN DO ABOUT IT

– John E. Hancock | Adult Encounters, Mount Auburn Presbyterian Church | January 27, 2019

The headlines get more dire all the time – shrinking glaciers, monster storms, rising seas, dying coral, droughts, and wildfires, yet the facts about the cause and overall trends are still buried on page 11. Climate Change is big and scary, yet also vague and incomprehensible. It leaves us feeling helpless, and probably guilty. What to do?

First, we need to ***understand the problem.*** I'll try doing that here by citing some specific numbers that clarify what's happening to our planet. Yes, the dire environmental and human damage is being caused by increased (mainly, about 80%) atmospheric carbon from the use of fossil fuels – but how much, how fast, and from where?

We in the USA put out by far the most carbon per capita (5 times that of France!). Much of the world's carbon is now also coming from the rapidly growing economies; global poverty rates have been plummeting; those people and countries are now joining the carbon economy. Yet carbon-induced climate change continues to have its most severe impact on the world's poor, who did not cause it. (That's why climate is a justice issue, even if we still have a "humans only" definition of justice.)

So here are some numbers to help with ***understanding***, and ***to motivate action***.

356 Gigatons: amount of carbon added by human activity to the earth's atmosphere since the dawn of the Industrial Revolution in 1751. (A gigaton is one billion metric tons; a metric ton is 1000 kilograms or 2200 pounds.) ***HALF OF THAT AMOUNT* has been added *only since 1980*!**

565 Gigatons: a "budget" (as of 2012) of how much more carbon can be added and still keep the earth's average temperature rise below 2 degrees Celsius (the goal re-affirmed in the Paris agreement).

9 Years (2028): When we (i.e., "we humans"), at current rates, will blow through this "budget."

2,795 Gigatons. That's how much carbon would enter the atmosphere if the global fossil fuel Industry sells us their currently-known reserves; their profits and business plans depend on us burning it all. ***THAT'S FIVE TIMES* the budget for that 2-degrees of global warming.**

11 Degrees Farenheit: Average global temperature increase by the end of this century without major changes in the world's energy policies and infrastructure.

350 PPM: Another way to measure the carbon as "parts per million"—there were 350 parts per million of carbon in the atmosphere for many thousands of years – sustaining the climates to which all current life on earth is adapted. ***WE ARE NOW OVER 410 PPM*** and climbing at a rate of *2 PPM per year*.

THE "HOCKEY STICK" GRAPHS: After many millennia in steady patterns, both CARBON CONCENTRATION and AVERAGE GLOBAL TEMPERATURE climb into all-new territory – together and quickly – since the 1950's.

MEANWHILE HERE AT MT AUBURN: our church facility's carbon-footprint

144 metric tons: Our church's annual carbon emissions (2016) based on our gas and electricity use. That's 100,000 cubic yards, the volume of a three-story building covering a full-city-block – every year.

$30,000. Amount we paid for those gas and electricity bills (2016).

$600,000. At level rates, the minimum we will pay for fossil fuel energy over the next 20 years.

THIS LAST NUMBER points to the beginnings of an answer to ***"What we can do"*** about climate change. It's a three-part answer:

1 Building Efficiency Improvements. Many of the windows in the church facility are now stormed and sealed; nearly all of the lighting is now converted to LED. The "Investing in a Just Future" campaign proposes to move us closer to our Net Zero Carbon initiative, by funding new windows in the office building and new high-efficiency heating/AC in the office and education buildings. Consultations are in progress towards a solar electricity generating system. All these could reduce our carbon footprint significantly, while saving much of that $600,000.

TO "BE THE CHANGE" the world needs, means getting our facility to Net Zero Carbon.

DOING THIS COSTS NOTHING: Much of that $600,000 is money we will spend on utility bills, ***UNLESS*** we spend it instead on reducing the facility's dependence on climate-changing energy.

2 Purchasing Carbon Offsets. Since no one can realistically get to "Zero" carbon, "Net Zero" involves calculating the carbon load of our life choices and actions, and then investing in equivalent, certified carbon reduction projects on an open market. These vary in cost but seem to go as low as $10 per metric ton.

3 Advocacy. Since climate change is a problem that needs national and global solutions, our governments need persuasion. It's not politics, it's physics – but fossil fuel interests make it political by lobbying for their ability to sell, unimpeded, all 2,795 Gigatons-worth of their product. Besides urging elected officials to prioritize the interests of planetary health, we can divest from the fossil fuel industry, and join the call to "keep it in the ground" – which of course will mean more after we've reduced our own need for it.

RESOURCES:

Climate Science Summaries:
http://www.climateconsent.org/pages/carbonmaths.html (Cites among others the work of Bill McKibben (*Rolling Stone* and *New Republic*) also see his latest in the *New Yorker* last December).

Basic Intro to Carbon Footprints and Offsets:
https://www.cartalk.com/content/global-warming-and-your-car-0

A Carbon Footprint Calculator: http://www.carbonfootprint.com/calculator.aspx

Bi-Partisan Advocacy Organization: https://citizensclimatelobby.org/