

Presenter Information and Supplemental Resources

Our Expert Presenters

- Joyce Coffee, President, Climate Resilience Consulting joyce@climateresilienceconsulting.com
- Andrew Eil, Consultant, Andrew Eil Consulting andrew.eil.consultant@gmail.com

Links shared in the chat

- Playbook 1.0: How Cities Are Paying for Climate Resilience: <https://www.climateresilienceconsulting.com/s/Playbook-10-How-Cities-Are-Paying-for-Climate-Resilience-July-2019.pdf>
- Climate Bonds Initiative: <https://www.climatebonds.net/>
- Catastrophe Bonds: <https://www.bloomberg.com/news/articles/2015-12-07/how-cities-can-avert-financial-ruin-after-a-natural-disaster#:~:text=%E2%80%9CCat%20bonds%E2%80%9D%20work%20a%20lot,%2C%20tornado%2C%20earthquake%2C%20etc>
- MBTA Bonds: <https://www.mbta.com/sustainability/sustainability-bonds>
- Colorado's Future Avoided Cost Explorer: <https://cwcb.colorado.gov/FACE>
- Coalition for Green Capital: <https://coalitionforgreencapital.com/>
- Green Bank Network: <https://greenbanknetwork.org/>

Presenter Q&A's - July 27 Session

Q: Many people on this webinar are from Michigan. Is there a case to be made that if one bond is started in the state other investors will follow?

A: I answered this live, but let me see if I can provide more useful information. Because the answer to your question is yes, there is actually sort of a movement to increase the number of green bonds in a state once they've gotten started. For instance: [Green Bond Pledge Signatories](#) e.g. • California State Treasurer, City and County of San Francisco, San Francisco Public Utilities Commission, State of New Mexico Treasurer's Office, State of Rhode Island Office of the General Treasurer, King County, Washington, City of Asheville, North Carolina. Your question reminds me that I should have pointed out in my presentation that one reason why local government finance officer's might be convinced to issue a "green" bond, (even if that's just a name, not actually a certification), is that it draws attention from investors that might not have otherwise considered the state or local government that makes the finance officer's job easier because, as the bond sponsor, they want increased investor competition for their bond offering. Once these investors (I'm generally meaning large investment houses) have had success with a green investment in Michigan, (meaning, in part, that the bond repaid its debt so they got their money plus interest back), they include that in their criteria for selecting the next bond to invest in.

Q: Low uptake of flood insurance - especially in low-income, vulnerable populations. Beyond cat bonds and parametric ins, progress on community-based insurance?

A: I agree that cat bonds or parametric policies are not an immediate solution for LMI vulnerable populations in the US. (In the global south, the World Bank has structured risk pooling parametric policies that help poorer communities, but not without controversy, - namely that the relatively poorer communities still see less benefit AND the policies have, in certain extremes, not made much of a dent in helping the communities recover. I wish I knew more about community-based insurance. I'll leave this question unanswered in case others do. FYI that I am sometimes in conversations with a large insurance brokerage firm and delighted to hear them talk about micro-insurance. If you are in a position to meet with your City's insurance broker, you might ask them to speak with the sustainability people on their team. Your average insurance broker is not going to know what we are talking about vis a vis resilience, but increasingly there are people within the company that do, and my understanding is they are waiting for your type of question.

Q: Can you talk about the relationship between Cat bonds and parametric insurance? They sound very similar.

A: Insurance Linked Securities (ILS). Over the last two decades, the insurance industry's risk analysis innovations have improved quantification of extreme event impact through the building of stochastic meteorological models. This, coupled with rising hazard and

exposure levels, has facilitated the emergence of Insurance-linked Securities (ILS), such as catastrophe bonds, and parametric (index or trigger based, vs indemnity) insurance policies. These modern products help utilities and local governments to transfer catastrophe and natural hazard risk from their balance sheets, providing budget stability, financing for resilience projects, and risk management for public entities.

Catastrophe Bonds (Cat bonds) are a type of ILS that allows the asset owner to access capital when a pre-defined loss event occurs. Like insurance policies, but in the form of debt, these risk-linked securities transfer risks from an asset owner to investors. For the contract, a special purpose vehicle is set up explicitly to pay out in the event of a catastrophe. Catastrophe bonds are modern finance tools based on the recent evolution of catastrophe modelling within the insurance industry that provide a deep understanding of the impacts of extreme risks such as pandemics and natural catastrophes.

Parametric insurance policies differ from traditional indemnity insurance policies in that the pay-out is based on an index capturing the impactful risk event, rather than on an evaluation of the actual loss. Such policies can help to fill protection gaps alongside traditional physical asset coverage; e.g. a burnt area index can be a good proxy for excess wildfire response expenditure, and an index comprising rainfall intensity and/or streamflow rate can proxy the financial impacts of flash flooding beyond just physical damage. Parametric products eliminate the costs and delays of investigating and adjusting loss following an event, bringing both speed and cost-effectiveness to the risk transfer structure.

Q: Who's "job" is it to identify climate resilience funding and or financing and determine the optimal mechanisms? local Govt. staff-who?

A: Just like many leaders are responsible for resilience, many local government leaders are responsible for actions leading up to resilience funding and finance. For instance, revenue generating departments in a City government (transportation, water, electric if it is City owned). Sustainability/environment or planning departments, "sister" agencies like schools or parks. In the local government, the finance/treasurer/budget leader (often all one person, but in a larger city likely the finance officer) identify and prioritize mechanisms for City finance. But they are generally not looking for climate resilience funding or finance, which is why the other leaders I mentioned are so important. If the question is does this Job go beyond the local government, it can if for instance there is a Green Bank in the state (and I think the person asking this question was associated with Green Banks) a regional entity that has influence and interest (like a metro transportation agency or the unusualor the unusual Regional Plan Association of NY, NJ, CT.

Q: Can you repeat how Green Bonds are funded? You labeled them as revenue bonds but what is the revenue source?

A: Green bonds in the government sector are revenue bonds that are funded by revenue like e.g. utility rate payer revenue, City fees, special taxes, legal settlements etc. In the

corporate sector, revenue bonds are funded by the revenue from the sale of goods and services. This is what the debtor (e.g. an issuer like the city) uses to pay back the investor. If your question is how are green bonds funded by investors, investors loan money, via investment houses, to the bond so that the public or corporate entity can do the project. Also, just to clarify, a green bond is a revenue bond that funds a sustainable project. Your community may have bonds that could be called "green" already, even if they are not certified green or not reporting their greenness to investors or constituents. Generally these are some types of "green bond" projects, Renewable energy and/or energy efficiency (including efficient buildings) Sustainable waste management Sustainable land use (including sustainable forestry and agriculture) Biodiversity conservation Clean transportation Clean water and/or drinking water Climate change adaptation

Q: Is there a requirement when using Catastrophe Bonds that they will be used to build back more resilient?

A: No. An issuer/sponsor (like a City) could make that a part of their plan and could sell that to their City council to convince them to go for it, but there are no programmatic requirements on this sort of money.

Q: Can community members or CBO's initiate or identify these sort of funding mechanisms to center equity and social impact, and if so how?

A: Yes, in that the information is out there and available to all but no in that most CBOs have too much on their plate to inform themselves of them. A community leader interested in this might reach out to with a local LISC.org or CDFI, a metropolitan planning council, a transportation agency (for instance in Chicago the Chicago Metropolitan Agency for Planning) or a group like Finance New Orleans or the equivalent in their community. So as not to be given a meeting with an intern, they could say e.g. they were interested in understanding what green bonds the institution had been a part of or had contemplated and that they had a project idea that might lend itself to a green bond - or something like that. Local government environment leaders should also take meetings like this. Since those leaders rarely have budgets of their own, they are not going to be as familiar, but the community leader can give that government leader a reason to be in touch with the finance department.

Q: Do see green bonds being something that are gaining momentum equally across the whole country?

A: I do not have access to data that show green bond dispersion, though if you are a member of the Climate Bonds Initiative, they do have that database and could provide you with that information. My sense, based on working with communities in various parts of the US, is that green bonds are generally a Northeast and California phenomena. What the data would likely show is that states with green banks have a disproportionate share of green bonds. While researching to respond to another question, I came across this [link!](#) It's

a positive sign that not only CBI but now even NASDAQ are tracking the sort of data you are looking for!

Q: What are your solutions that reduce ghg so that we are simultaneously preventing additional climate change while adapting to the changes already occurring?

A: Countless solutions. Slido does not allow graphics, as we often discuss this with collaborators that way. A short list includes renewable distributed generation, urban forests and nature based solutions, water conservation, local food systems.

Q: Has GFOA started incorporating climate into their professional development or training? Did they help develop of the Ready-to-Fund Resilience Toolkit?

A: No. This is where they remain: Reporting environmental, social, and economic concerns. Analyzing both project/program impact and return on investment. Positive and negative effects on people, planet and profit. Proactive cost-savings and life-saving (preventative). They did not help with RFR. We've reached out in the past to suggest collaborations but we did not hear back.

Presenter Q&A's - August 10 Session

Q: Regarding the UNEP gap report, does the modeling of the gap assume NO mitigation (reduction goals) achieved-ie. 50% reduction in buildings sector?

A: Unfortunately, most of the climate impacts over the next 2-3 decades are already 'baked in' based upon historic emissions to date, inevitable emissions in the near future even under the most optimistic net zero pathways, and the fact that CO2 is a long-lived gas in the atmosphere. Consequently, the adaptation needs through 2050 (and attendant investment requirements) are not strongly influenced by the modeling of emissions pathways, whatever those pathways and models might be. The executive summary of the report notes, " The assessment report also documents how, even under the most optimistic emissions mitigation scenarios where net-zero is reached by around 2050, global warming will continue in the short to medium term, potentially levelling off at 1.5°C above pre-industrial levels. All this makes adaptation an increasingly urgent global imperative."

Further, on finance it notes, "[E]stimates of the economic costs of climate change in developing countries are now generally higher than indicated in earlier studies. This is true both later in the century, under higher warming scenarios, but crucially also over the next two decades even under ambitious mitigation scenarios." These estimates are based upon IPCC studies as well as assessments by countries themselves of projected adaptation finance needs and climate-related losses.

I encourage you to read the UNEP 2021 adaptation gap report, link here: [Adaptation Gap Report 2021 \(unep.org\)](https://www.unep.org/adaptation-gap-report).

Q: Funders talk a lot about using \$\$ to do the catalyst thing, incl. via revolving loans/impact investments, but still a lack of pvt investors ready. How [to] fix this?

A: The lack of private investors ready and interested to invest in adaptation projects is a function both of supply and demand. On the supply side, investors are historically unfamiliar with adaptation technologies and solutions and unaware of profitable investment opportunities. Also, historically many types of investors, including pension funds and insurers, have historically invested only a very small share of assets in infrastructure, which is where the greatest capital is needed.

On the demand side, there has historically been a deficit of attractive, investible climate resilience projects that are commercially and technically sound. This is why planning and capacity building to develop a project pipeline are so important. Luckily, there is growing appreciation of the need both for supply and demand -- and to match the two. Hence the effort by institutional investors to invest in green bonds, government's stimulus and infrastructure spending on climate resilience, the profusion of green banks investing in resilience, and efforts by states and cities to develop adaptation plans, to name a few important efforts that are changing the narrative and facts on the ground. Hopefully, these efforts will continue apace such that investors will become much easier to find for worthy projects.