

# CARBON TRANSITION: Risk & Opportunity for U.S. Public Finance

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The recent global climate summit in Glasgow, Scotland, known as “COP26”, has brought the issue of “carbon transition” back to the top of policymakers’ agenda. In fact, according to Google Trends, the term “carbon transition” reached its peak as a search term from November 7th to November 20th, coinciding with the date of the Conference.

Since the United States has officially rejoined the Paris Agreement this past February, with a goal of achieving carbon neutrality “no later than” 2050, it is clearly time for our industry to start pondering what decarbonization will mean for issuers in the municipal market. In this article, we will examine the components of the rising “carbon transition risk” for state and local governments, draw some parallels to the public pension crisis and explore how this will translate into potential opportunities for the public finance sector.

### **Why Carbon Transition Matters**

Concurrent with the escalating interest in sustainable investing in the tax-exempt market, municipal analysts and traders are increasingly concerned about one particular aspect of climate risk: the so-called “transition risk”, defined as the risk stemming from the transition to carbon neutrality by the target date of 2050.

A recent [paper](#) from the Principles For Responsible Investment Group (“PRI”) further elaborates on the issue as follows

*“Transition risks arise from measures taken to*

*mitigate the impact of climate change or from policy responses to climate change (...) Many of these changes will require upfront investment, with [a recent] study estimating at least US\$2.5 trillion of additional capital spending towards energy supply, industry, building and vehicles by 2030. As the ultimate guardians of land use planning and public investment, as well as the first responder to climate-related events, local governments, counties and municipalities are responsible for the planning and implementation of adaptation practices.*

*Changes to policy and spending priorities will have repercussions for sectoral economic activities and for state and local governments’ budgets, especially for those reliant on economic activities that are vulnerable to transition risks, such as in the utility sector.”*

Given the above framework, transition risk may impact municipal creditworthiness in several ways:

1. Localities who are reliant on a fossil fuel based electric utility as a leading taxpayer may experience tax base erosion as the utility struggles with competition from renewables-based producers. The same utility may also be forced to either invest in new carbon capture and storage facilities or incur a rising carbon tax burden.
2. Municipal electric utilities will be faced with the same stark choices as their investor-owned counterparts.
3. There is evidence that issuers with high carbon emissions level are also more exposed to climate-related physical risk (as in natural disasters). In the long run, this may also lead to tax base erosion from loss of economic activity and outmigration.
4. The local municipality itself may incur more debt to finance carbon mitigation projects for physical facilities that it owns or controls.
5. Non-profit entities which issue bonds in the tax-exempt market (e.g. healthcare, private higher education) will be fully exposed to transition risk, with less potential for state or federal support.

## Estimating Greenhouse Gas Emissions

In practical terms, the first step in figuring out the total cost of decarbonization efforts is to come up with a methodology to estimate the actual carbon footprint for each municipal or non-profit entity. The commonly used Greenhouse Gas (“GHG”) Protocol classifies emissions into three categories, or “scopes”:

1. Scope 1: direct emissions from fuel burned by sources owned or controlled by the reference entity, e.g. buildings, vehicles and equipment etc..
2. Scope 2: indirect emissions from purchased electricity, steam, heat and cooling, i.e. emissions from what the entity “consumes”.
3. Scope 3: all other indirect emissions attributable to the entity’s supply chain or operations

These categories were initially developed for corporate entities, but one can reasonably expect Scopes 1 and 2 to apply to municipal entities, depending on the nature of the entity. In our opinion, Scope 1 would make the most sense for a municipally-owned utility or for a community which is heavily reliant on fossil fuel based electric production, whereas both Scope 1 and 2 arguably should apply to local government entities and non-profit entities as consumers of GHG-producing energy sources.

As you can imagine, attributing GHG emissions to each state and local entity is not a trivial exercise, and the methodology can vary depending on which data source you use. From our experience, some data vendors use a “top down” approach, based on satellite data, and others take a “bottoms up” approach by rolling up the carbon footprints for all identifiable physical assets on the ground.

## The “Social Cost of Carbon”

When it comes to estimating the potential financial impact of carbon neutrality, the most important number to keep in mind is the so-called “Social Cost of Carbon”. A recent [article](#) from Axios News summarizes the concept very succinctly:

*“The social cost of carbon reflects the ultimate estimated dollar price to society for every new metric ton of carbon dioxide emitted (...) It might be the single most important number on climate change, one that helps decide how much we’re willing to invest to slow global warming — and how much we actually value the future.”*

Initially conceived in academic circles, the social cost of carbon has become a widely used tool within the federal government to justify the potential cost (in dollar terms) of climate-related policy initiatives.

Because it is a net present value concept, this cost estimate depends critically on the discount rate assumption used to derive it. As we all know, using a lower discount rate would result in a higher dollar estimate, and vice versa. This, of course, opens the door for potential manipulation, depending on the politics of the moment. Under President Obama, a 3 percent discount rate was used, resulting in a social cost of carbon of about \$51 per metric ton. The Trump administration, in its efforts to downplay climate change risk, set the discount rate at 7 percent, which dramatically lowered the cost to only \$7 or less. The Biden team is now poised to reset the number to at least \$51 and potentially much higher.

Once you’ve decided on what social cost estimate to use, then you can come up with a projected total carbon transition liability simply by multiplying the cost per ton with the latest carbon emissions estimate for any entity that issues bonds in the municipal market.

## Similarities with Public Pension Liability

From a credit standpoint, the carbon transition “liability” and the public pension liability share some similarities. Both are actuarially derived present value concepts and, as mentioned above, critically dependent on discount rate assumptions. Just like pension liabilities, the carbon transition

cost estimate needs to be viewed in context: to say that the City of X has an estimated social cost of carbon liability of Y dollars doesn't really mean anything, unless you can compare such liability to the City's socio-economic indicators, its tax base or its annual budget etc...Cities and towns with weak socio-economic characteristics and/or weak fiscal resources should prove most vulnerable to transition risk.

Similar to a low pension funding ratio, a high transition risk score may also be a sign of weak governance. As the State of Illinois can attest to, a history of weak governance can prove extremely costly in terms of access to capital.

That said, we certainly don't want to stretch this comparison too far. Public pension funding is clearly the responsibility of state and local governments and it is reflected in their financial statements. At this point, we don't really know yet who will end up "owning" the carbon transition liability, although it's not unreasonable to assume that less affluent cities and towns will get help from the federal government while wealthier communities will have to shoulder a significant portion of this rising financial and economic burden.

### **Potential Opportunities for U.S. Public Finance**

Risk concerns aside, decarbonization should create new opportunities for U.S. Public Finance. The Carbon Capture Improvement Act, recently signed into law as part of the bipartisan Infrastructure Investment and Jobs Act (IIJA), should make it easier for power plants and industrial facilities to finance the purchase and installation of carbon capture, utilization, and storage equipment, as well as direct air capture (DAC) projects, through the expanded use of private activity bonds (PABs).

[Editor's Note: for more details, refer to Nixon Peabody's article ".....link....." in this issue]

Further down the line, one can also envision a surge in capital project financings to accommodate the rise in electric vehicles ("EV"), from installing charging stations to reconfiguring downtown areas in

response to changing traffic patterns.

Public finance professionals will also have the opportunity to assist and guide their clients in their climate mitigation efforts and in shaping their climate narrative to address rising concerns on the part of investors.

### **Conclusion**

As the race to Net Zero heats up (pun intended), the municipal sector will be increasingly subject to scrutiny as investors start to take into account transition risk.

It's fair to say that this potential transition risk is not yet priced into the municipal market, primarily due to the uncertainty surrounding the timing of top-down carbon transition policy and the direct and indirect impacts such policy would have on municipal obligors. The lack of market impact to date should not be an excuse to ignore this impending crisis, however. The tax-exempt market's currently favorable technicals (low rates and tight spreads) actually provides the ideal environment for investors to start mitigating their climate risk exposure without giving up much yield or credit quality. You certainly don't want to wait until the market actually reacts, because by then it would be too late.

The public pension funding crisis took more than two decades to have a significant effect on the borrowing costs of states with low funding ratios. Given the rising global concerns about ESG factors, the impending transition cost crisis is likely to unfold in much faster fashion.

On the flip side, our market will also be at the front line of any federal carbon reduction policy and this should create new avenues for creative financing, starting with private activity bonds for carbon capture projects. As the saying goes, "Risk" and "Opportunity" are usually two sides of the same coin.