COMMENT

Climate Exactions: One Tool in a City's Toolbox

by Adam Freed and Jake Elder

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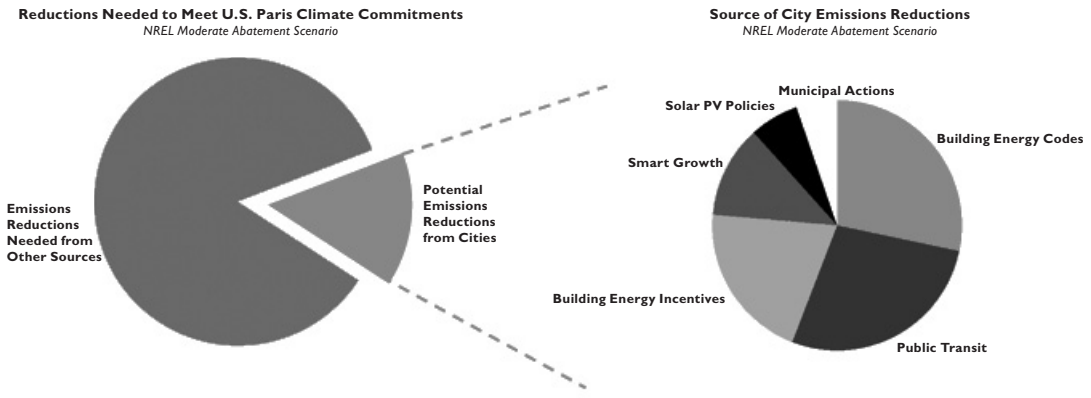
I. The Role of Cities in Addressing Climate Change

Climate change is a real and present danger that must be aggressively addressed to protect people, ensure economic growth, and preserve our natural systems. Reducing greenhouse gas (GHG) emissions and protecting communities from natural hazards requires rethinking every facet of the built environment. From where and how we build, to how we generate energy and move goods and people, to how we integrate nature into our cities, we must fundamentally change our approach to development and infrastructure investments. Local governments are a critical player in this effort.

Local governments—particularly cities—have many of the tools and powers needed to cut carbon emissions. A report by the National Laboratory for Renewable Energy (NREL) estimates that cities can contribute approximately 15–35% of the remaining carbon reductions needed to achieve the U.S.'s COP21 target.[1] Local governments are also on the frontlines of responding to climate hazards when they occur and have a tremendous stake in reducing climate risks. Cities have also demonstrated a willingness to take action on climate change; more than 130 U.S. Mayors have signed on to the Global Covenant of Mayors, committing their cities to take action to reduce carbon emissions.

J. Peter Byrne and Kathryn Zyla offer an intriguing new mechanism for municipalities to address climate change. They propose that local governments levy a climate exaction, or fee, on new developments to offset the increased GHG emissions or climate risks caused by the new development. This fee is modelled on exactions commonly used to mitigate issues such as traffic congestion or infrastructure needs. Following legal precedent, climate exactions would need to be "roughly proportional" to the impact of new development and used to fund actions that have an "essential nexus" to offset the harm caused by the developments to which they are applied.[2]

The National Renewable Energy Lab estimates that city actions could account for 15-35% of the GHG reductions necessary for the U.S. to meet its Paris Climate Commitments



Source: Bloomberg Associates (based on data from Eric O'Shaughnessy et al., Estimating the National Carbon Abatement Potential of City Policies: A Data-Driven Approach (National Renewable Energy Laboratory 2016)).

1. Eric O'Shaughnessy et al., Estimating the National Carbon Abatement Potential of City Policies: A Data-Driven Approach vi (National Renewable Energy Laboratory 2016), http://www.nrel.gov/docs/fy17osti/67101.pdf.

2. As outlined by Byrne and Zyla, the courts have ruled that exactions must meet two critical thresholds to be legal: they must "have an 'essential nexus' with a public harm justifying regulation" and "the value of the property exacted be 'roughly proportional' to the degree of harm threatened by the proposed development." *See* Dolan v. City of Tigard, 512 U.S. 374 (1994) (establishing rough proportionality requirement); Nollan v. Cal. Coastal Comm'n, 483 U.S. 825 (1987) (establishing "essential nexus" requirement).

II. Making Climate Exactions Work

Under Byrne and Zyla's proposal, climate exactions could achieve three key goals. First, they could discourage sprawl and lower-density new development far from transit by putting a price on carbon. Second, they could discourage new development in areas vulnerable to natural hazards or in sensitive areas where new development could exacerbate risks to others. Third, they could generate funding for climate mitigation and adaptation efforts to offset the impacts of new development.

As stated earlier, city leaders need to use every tool at their disposal to put the U.S. on a pathway to keep global temperature changes below 2°C. Accomplishing this objective requires fundamentally rethinking all aspects of our urban systems and operating procedures. An effectively designed climate exaction program could be a useful tool in this endeavor. To further refine the concept, the authors and others should work to address three big questions.

First, additional clarification is needed regarding the timing—and time scale—of payments. The "harm" caused to society from a new development is not a point in time event; it will continue for as long as the development continues to exist. The authors do not state how such a fee would be calculated and how many years out the payment would need to cover. The risk here is that to properly account for the lifespan of a development, the fee might need to cover 30 to 50 years of potential harm. That raises a second question related to timing: how the fee is paid. On one hand, requiring developers to pay an exaction for the entire lifespan of a development up front could be cost prohibitive and raise questions as to the "proportionality" of the payment. On the other hand, if exaction payments were made on an annual basis, the local government may struggle to raise a critical mass of dollars to fund large scale mitigation or adaptation measures.

Second, climate exactions should be structured in a way that acknowledge the uncertainty around climate change impacts and provides the flexibility needed to account for the risk that impacts occur faster than anticipated or in unexpected ways. The authors overlook the complexity related to this topic. Exactions agreed upon at the time of development will struggle to account for changes in emissions over time as building infrastructure deteriorates, citizen behavior shifts, and new technologies are adopted. Not only can emissions change, the "harm" associated with those emissions will also change. As one example, a property on the fringe of a floodplain might not require a climate exaction; however, risks will change as sea levels rise. As a result, an exaction agreed upon at the time of development would no longer be relevant or proportional to the harm that development has caused. Lastly, the authors note that "it is relatively easy to quantify the GHG emissions associated with traffic." While this may be the case in the very short run, it becomes much more difficult over a 30 to 50 year time scale. Traffic patterns can shift and new technologies will be adopted, both of which can dramatically alter the GHG emissions from a forecast.

Third, climate exactions will only be successful if developers do not have a reasonable alternative outside of a local government's jurisdiction. If a development can be moved to a location outside the localities' jurisdiction and thus not subject to a fee, then developers could be faced with a perverse incentive to move their project further away from an urban center. 2016 population estimates from the U.S. Census Bureau are already showing a shift in population trends away from denser urban areas towards lower density suburbs.[3] In 2016, lower-density suburbs in the U.S. grew by 1.3%, while higher density suburbs grew by about 1% and urban counties saw less than a 0.5% increase in population. Unless there is a regional approach, exactions could have the unintended consequence of pushing development to the peri-urban areas outside of a city's boundaries, intensifying urban sprawl rather than mitigating its impacts.

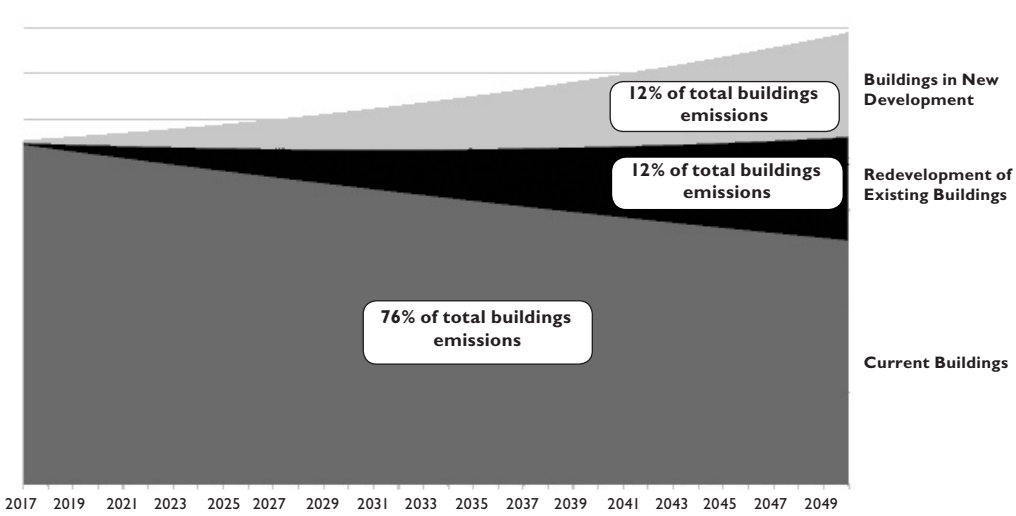
III. Established Pathways to Higher Impact

Local governments already have well-established pathways to achieve deep reductions in GHG emissions by fully leveraging their control of building and energy codes, zoning regulations, infrastructure investments, and incentive programs. Given that we do not expect significant action on climate from the current Congress or White House, it is critical that we expand the tools available to municipalities to address climate change. As cities need to take an "all of the above" approach to achieve an 80% reduction in GHG emissions by 2050—the level needed to keep us to 2°C of warming—"climate exactions" should be further explored and tested in jurisdictions with a receptive regulatory system and legal structure. If successful, exactions could be a useful tool to prevent additional damage beyond that which we are already on pace to inflict.

We need to be careful, however, about overpromising what exactions can deliver compared to other policy levers already available to cities. Many of the outcomes Byrne and Zyla hope that climate exactions will achieve can be more effectively met through energy and building codes, zoning regulations, prioritization of infrastructure investments, and energy conservation programs in existing buildings. For example, under Mayor Michael Bloomberg New York City enacted new building codes to reduce energy use in the city's largest buildings. These laws, part of the City's Greener, Greater Buildings Plan, are projected to cut the city's GHG emissions by 5% between 2014 and 2030. The NREL analysis similarly estimates that cities can reduce their emissions by approximately 5 to 10% through stronger building codes and incentives that apply to all building, not just new developments.[4]

3. Jed Kolko, *Americans' Shift to the Suburbs Sped Up Last Year*, FiveThirtyEight (Mar. 23, 2017), https://fivethirtyeight.com/features/americans-shift-to-the-suburbs-sped-up-last-year/.
4. O'Shaughnessy et al., *supra* note 1, at 12, 18.

Policies targeted at new development are important for cities: however, new construction will only comprise a small portion of total buildings-related emissions over the next 30 years.



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New developments alone will have a marginal impact on the overall emissions profile of our cities. The NREL estimates that city smart growth policies for new development, of which climate exactions are just one tool, could reduce a municipality's carbon emissions by 0.8–2.5% by 2030.[5] One key driver of this projection is that new development represents a small fraction of future emissions. Due to technological advances and new construction methods and materials, new development generally has a lower carbon intensity than existing buildings—with new buildings consuming nearly 30% less energy on average than the existing building stock.[6] As new buildings are built over time, their contributions to U.S. emissions will gradually make up a greater portion of our building-related emissions. But by 2050, this percentage will still be quite small—about 12% of all building-related emissions.[7]

One must also consider the extent to which revenues from climate exactions would enable a locality to make significant progress towards climate change mitigation or adaptation. Byrne and Zyla rightly note that exactions levied on a development must be "roughly proportional" to the impacts of that development. As a result, exactions, by nature and design, will only prevent new development from occurring in suboptimal locations (e.g., far from transit or in a floodplain) or provide funding to reduce emissions equal to those generated from a new development. While the authors argue that new revenue generated by climate exaction fees could be better reallocated to emissions reductions efforts in other areas of a city, it is important to keep in mind that the funding required to produce transformational change in our infrastructure and transportation systems is significant. At best, exactions will help cities lower the arc of their business as usual trajectory, but they will not be a major contributor to lowering a locality's baseline emissions.

As our communities continue to grow, we need to ask hard questions about how and where growth occurs. Local governments need to aggressively reduce emissions to achieve the ambitious goals that many have established and to avoid the worst impacts of climate change. They also need to prevent risky development that harms environmentally sensitive areas or increases our exposure to climate risks.

If the authors are able to address the questions outlined in this article, exactions could help prevent increases in GHG emissions caused by new development, discourage sprawl and development in environmentally-sensitive areas, and provide financing for climate adaptation and mitigation activities. However, exactions will not produce significant reductions in GHG emissions from current levels. Exactions are a tool that should be explored, but other local policy mechanisms already exist and should be more widely and aggressively applied.

5. *Id.* at 24.
6. *Id.* at 9.
7. Based on Bloomberg Associates analysis. O'Shaughnessy et al. estimate that new buildings are 73% as energy intensive as existing buildings stock. Assuming that new development in cities expands the housing stock by 1% per year; housing in new developments will make up 27% of a city's housing stock by 2050. The greater efficiency of that housing along with the delayed emissions from buildings that are built in later years means that new residential development will cumulatively account for only 12% of cities' building-related emissions between 2017 and 2050.