Frontiers in Public Management
ISSN Print: 3104-4441
ISSN Online: 3104-445X
CD ISSN: 3104-4468
https://doi.org/10.63313/FPM.9005

Government Environmental Attention and Urban Carbon Emissions: A Governance-Based Interpretation from the Perspective of Harmonious Human–Nature Coexistence

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How to cite this paper: Wang, Q. Y. (2026). Government Environmental Attention and Urban Carbon Emissions: A Governance-Based Interpretation from the Perspective of Harmonious Human–Nature Coexistence. *Frontiers in Public Management*, 1(2), 52–61. ISSN Print: 3104-4441; ISSN Online: 3104-445X.
https://doi.org/10.63313/FPM.9005
Published: 2026-04-10

Abstract

In the context of China's pursuit of the "dual carbon" goals and the broader modernization agenda centered on harmonious coexistence between humanity and nature, the role of local governments in carbon mitigation has become increasingly important. Existing studies have primarily focused on the effectiveness of specific policy instruments, such as environmental regulation, carbon taxation, emissions trading, and fiscal subsidies, while paying comparatively less attention to a more fundamental issue: how local governments' environmental attention shapes the governance process prior to the implementation of concrete policies. This paper argues that governmental environmental attention should be understood as a prior governance variable that influences policy priorities, resource allocation, enforcement preferences, and ultimately urban carbon emissions. Rather than assuming a simple linear relationship, the paper emphasizes that governmental environmental attention may generate both restraining and promoting effects on carbon emissions through multiple channels, including regulatory constraint, market-based incentives, green investment, industrial restructuring, and governance capacity. These effects are further conditioned by development stage, industrial structure, regional competition, and institutional capacity. The paper therefore proposes a governance-based analytical framework for understanding the complex relationship between governmental environmental attention and urban carbon emissions. Its central argument is that environmental attention matters not because it is merely discursively present in official texts, but because it determines whether environmental concerns are effectively incorporated into local development priorities and transformed into institutionalized governance arrangements.

Keywords

Governmental Environmental Attention; Urban Carbon Emissions; Local Governance; Environmental Regulation; Low-Carbon Transition

1. Introduction

As China continues to advance its "dual carbon" agenda and promote a development model grounded in harmonious coexistence between humanity and nature, understanding the role of local governments in carbon mitigation has become an issue of growing academic and policy significance. Existing research in environmental economics and development economics has devoted substantial attention to the effectiveness of concrete policy instruments, including environmental regulation, carbon taxation, emissions trading systems, and fiscal subsidies. By comparison, less attention has been given to an earlier and more foundational question: how local governments prioritize environmental issues in the first place, and how such priorities shape subsequent governance outcomes.

This omission is nontrivial. Local governments are not merely passive implementers of national environmental goals. They occupy a central position in the transmission, adaptation, and execution of policy, especially at the prefecture level, where developmental pressures, industrial restructuring, environmental governance, and administrative accountability intersect most directly. National carbon reduction targets must ultimately be translated into concrete policy actions by local governments, yet local governments also face strong incentives related to growth, fiscal revenue, employment, and investment attraction. As a result, the degree of environmental attention exhibited by local governments is neither politically neutral nor administratively trivial. Rather, it is a meaningful governance variable that reflects policy salience, strategic prioritization, and the allocation of state attention within local development agendas.

In this sense, governmental environmental attention should not be interpreted as a purely rhetorical phenomenon. While official documents such as government work reports do contain symbolic language, they also reveal how local governments rank competing policy objectives and signal their intended direction of governance. Environmental attention thus matters because it precedes policy choice: it shapes whether environmental goals are incorporated into development strategies, how governance resources are allocated, and how strictly environmental targets are enforced.

Yet the impact of governmental environmental attention on urban carbon emissions is unlikely to be straightforward. On the one hand, greater attention to environmental issues may strengthen regulation, improve policy coordination, promote green innovation, and accelerate industrial upgrading, thereby contributing to emissions reduction. On the other hand, such attention may remain largely rhetorical, be undermined by local growth imperatives, or be distorted by weak implementation capacity and policy inconsistency. Under these conditions, heightened environmental attention may coexist with unchanged or even rising carbon emissions. The relationship is therefore likely to be mediated, conditional, and potentially nonlinear, rather than uniformly negative.

Against this backdrop, this paper addresses three questions. First, why can governmental environmental attention be conceptualized as an important determinant of urban carbon emissions? Second, through what mechanisms does governmental environmental attention influence carbon outcomes? Third, why is this influence constrained by broader development conditions, institutional arrangements, and structural characteristics, thereby generating complex and potentially non-monotonic effects?

This paper does not seek to offer a causal identification strategy or an econometric test. Instead, it develops a largely text-based and theoretically oriented interpretation of the relationship between governmental environmental attention and urban carbon emissions. Its objective is to provide a governance-centered analytical framework that complements the existing literature on environmental policy tools and broadens the discussion from policy effectiveness to policy formation, attention allocation, and governance capacity.

The paper contributes to the literature in three respects. First, it conceptualizes governmental environmental attention as a prior governance variable rather than a merely textual or discursive indicator. Second, it supplements the existing emphasis on policy instruments by examining the role of policy attention and governance intention in shaping environmental outcomes. Third, it argues that the relationship between governmental environmental attention and urban carbon emissions is best understood in terms of dual mechanisms, conditional effects, and institutional constraints, thereby offering a more nuanced perspective on local low-carbon governance.

The remainder of the paper is structured as follows. Section 2 reviews the relevant literature and develops the analytical framework. Section 3 discusses the main mechanisms through which governmental environmental attention affects urban carbon emissions. Section 4 examines the internal tensions and constraint conditions embedded in local low-carbon governance. Section 5 concludes with key implications for theory and policy.

2. Literature Review and Analytical Framework

Research related to governmental environmental attention and urban carbon emissions can be broadly grouped into two strands. The first focuses on the effectiveness of environmental policy instruments. This literature examines how tools such as command-and-control regulation, carbon taxes, emissions trading schemes, and fiscal support influence pollution abatement, energy structure, industrial upgrading, and emissions reduction. The main concern in this strand is whether and to what extent a given policy instrument works.

This literature has yielded important insights, especially regarding the comparative strengths and weaknesses of different policy tools. However, it generally treats the government as an already activated actor, that is, as a policymaker whose

environmental objectives are taken as given. In doing so, it often leaves underexplored the upstream question of how environmental concerns enter the local policy agenda in the first place. Put differently, even if one knows which policy instruments are effective, this does not by itself explain why some local governments prioritize environmental issues more than others, or why similar policy tools may yield different outcomes across jurisdictions.

The second strand of literature focuses on governmental attention, policy priorities, and text-based analysis. Studies in this tradition often rely on official reports, speeches, and policy documents to identify the relative salience of issues in governmental agendas. Such approaches have been applied to topics including intergovernmental coordination, innovation policy, macroeconomic expectations, and green development. This body of work provides useful methodological tools for measuring policy attention and opens an important avenue for examining the pre-policy stage of governance.

Nevertheless, this literature also has limitations. First, many studies focus on national or provincial governments, while relatively less attention is paid to prefecture-level governments, despite their importance in practical policy implementation. Second, some text-based studies remain methodologically coarse, relying heavily on manual coding or simple word-frequency approaches that may introduce subjectivity and measurement inconsistency. Third, and more importantly, the literature has not sufficiently integrated textual measures of governmental attention with substantive questions in environmental governance, particularly carbon emissions.

More broadly, the literature still leaves unresolved a key puzzle: why does greater environmental concern on the part of local governments not always translate into better carbon outcomes? In practice, local governments often operate under multiple and competing objectives. Economic growth, fiscal sustainability, investment attraction, employment stability, and environmental protection are rarely aligned in a straightforward manner. As a result, environmental attention may matter, but its effects are unlikely to be uniform across contexts.

Based on these observations, this paper proposes a governance-based analytical framework. Governmental environmental attention does not directly determine emissions outcomes. Rather, it first affects the salience of environmental goals within the local policy agenda, which in turn shapes the selection of policy instruments, the allocation of administrative and fiscal resources, the intensity of enforcement, and the willingness to pursue industrial restructuring. Through these intermediate processes, governmental environmental attention influences the trajectory of urban carbon emissions.

At the same time, the transmission from environmental attention to actual emissions outcomes is conditioned by several structural and institutional factors, including development stage, industrial composition, fiscal capacity, market

development, and regional competitive pressure. The relationship between governmental environmental attention and urban carbon emissions should therefore be understood not as a simple one-step causal link, but as a multilayered process involving attention allocation, policy transmission, institutional constraints, and realized outcomes.

In this framework, governmental environmental attention is defined as the degree to which local governments prioritize environmental issues within their broader hierarchy of development objectives. It is reflected in the prominence of environmental themes in official discourse, the importance assigned to environmental targets in governance practice, the allocation of policy resources toward environmental governance, and the responsiveness of local administrative systems to environmental concerns. Its significance lies not in symbolic expression alone, but in its potential to shape the institutional and policy conditions under which low-carbon governance becomes possible.

3. Mechanisms Linking Governmental Environmental Attention to Urban Carbon Emissions

Governmental environmental attention may influence urban carbon emissions through several interrelated mechanisms. The first is the regulatory channel. When local governments place greater emphasis on environmental issues, they are more likely to tighten industry entry standards, strengthen environmental monitoring, increase enforcement intensity, and impose more stringent penalties on polluting activities. These measures directly raise the cost of pollution-intensive production and compress the operating space of high-emission firms and sectors. Through this channel, governmental environmental attention can contribute to emissions reduction by strengthening formal regulatory constraints.

The second mechanism operates through market-based incentives. Local governments with stronger environmental attention may be more willing to adopt or support policy instruments such as carbon pricing, emissions trading, green finance, and targeted subsidies for low-carbon transition. Unlike purely administrative commands, market-based mechanisms reshape firms' incentives by altering relative prices, expected returns, and cost structures. In doing so, they help redirect capital, labor, and technology toward more energy-efficient and less carbon-intensive activities. Governmental environmental attention therefore matters not only because it may increase the stringency of governance, but also because it may improve the choice and deployment of policy instruments.

The third mechanism concerns green investment and technological change. Greater environmental attention may induce local governments to direct more public resources toward green infrastructure, low-carbon technologies, research support, and innovation systems aligned with environmental objectives. This, in turn, may lower the cost of green transformation, facilitate technological upgrading, and

improve carbon efficiency over time. Unlike the regulatory channel, which often works through direct constraint, the green investment channel operates more through capability formation and long-term structural change.

The fourth mechanism is industrial restructuring. Local governments that assign higher priority to environmental concerns may be more likely to restrain the expansion of energy-intensive sectors and encourage the development of services, advanced manufacturing, and environmentally friendly industries. In this way, environmental attention may reshape the industrial composition of the city and gradually reduce aggregate emissions intensity. The effectiveness of this channel, however, depends heavily on existing industrial structure. In cities dominated by heavy industry or resource-intensive production, environmental attention may initially generate substantial adjustment costs. By contrast, in cities where service sectors and high-value-added activities already occupy a larger share, environmental attention may more easily reinforce an ongoing process of green restructuring.

At the same time, governmental environmental attention may also generate outcomes that are less favorable, or at least less straightforward, from the perspective of carbon mitigation. One possibility is that environmental attention remains largely rhetorical and is not matched by real institutional capacity. Under such conditions, official emphasis on environmental issues may not significantly alter firm behavior or local development trajectories. Another possibility is that environmental attention coexists with strong growth-oriented pressures. In periods of economic expansion, local governments may continue to prioritize infrastructure construction, industrial investment, and employment stabilization, all of which may entail substantial increases in energy use and carbon emissions. In these cases, environmental attention may fail to dominate competing policy goals.

A further complication arises from governance deficiencies and policy distortions. Where regulatory systems are weak, administrative coordination is poor, or official incentives are misaligned, environmental attention may not be translated into coherent and sustained governance. Instead, it may produce ad hoc campaigns, selective enforcement, or even rent-seeking opportunities. Under such circumstances, heightened environmental attention may increase administrative activity without necessarily improving emissions outcomes.

Time lag also matters. Policies related to green innovation, technological diffusion, and industrial restructuring often take time to generate measurable environmental effects. Even where environmental attention is genuine and institutionalized, carbon emissions may not decline immediately. Transitional investment, technological substitution costs, and short-run structural adjustment may initially lead to rising emissions before longer-term gains emerge. This implies that the relationship between governmental environmental attention and urban carbon emissions may be dynamic and stage-dependent rather than contemporaneously observable in a

simple manner.

Taken together, these considerations suggest that governmental environmental attention has the potential to produce both restraining and promoting effects on carbon emissions. Which effect dominates depends on the interaction between policy attention and the broader institutional, developmental, and structural conditions under which local governance operates. The relationship is therefore best characterized as mediated and conditional, rather than as uniformly linear or deterministic.

4. Internal Tensions and Constraint Conditions in Local Low-Carbon Governance

The central reason why governmental environmental attention cannot be mechanically equated with lower carbon emissions is that local low-carbon governance is embedded in a set of structural tensions. The first tension arises from the coexistence of economic and environmental objectives. Local governments must often pursue fiscal revenue, employment creation, investment expansion, and urban development alongside environmental protection. These goals may be mutually reinforcing in some contexts, but they are often in conflict, especially in regions where economic growth remains closely tied to high-energy-consuming industries. Under these conditions, environmental attention may be present, yet repeatedly subordinated to growth imperatives.

The second tension is rooted in regional competition. Environmental governance has strong externality and public-good characteristics, which creates incentives for local governments to free ride on the efforts of others. If one locality imposes strict environmental constraints while neighboring jurisdictions maintain looser standards, firms and investment may relocate rather than transform. This weakens the incentive for any single local government to implement stringent environmental governance unilaterally. As a result, the effect of governmental environmental attention depends not only on local intention, but also on the broader interjurisdictional environment in which local governments compete.

The third tension concerns the gap between policy expression and policy implementation. Environmental themes may be prominent in government work reports and official discourse, but such prominence does not automatically imply administrative effectiveness. Fiscal limitations, insufficient enforcement resources, weak interdepartmental coordination, and dependence on incumbent polluting industries may all weaken implementation. In this sense, environmental attention should be distinguished from environmental capacity. The former concerns the allocation of political and policy salience; the latter concerns the ability to convert such salience into effective and sustained action.

The fourth tension derives from differences in industrial structure and local development stage. In resource-dependent or heavy-industrial cities, greater

environmental attention may entail painful restructuring, revenue loss, employment pressure, and political resistance. In more diversified or service-oriented cities, by contrast, environmental attention may align more easily with economic upgrading and innovation. The same level of policy attention may therefore produce very different outcomes depending on a city's structural conditions. This implies that governmental environmental attention is not a context-free variable; its practical effects are filtered through the local political economy.

The fifth tension concerns the choice of governance instruments. Stronger environmental attention does not necessarily imply better policy design. Administrative command-and-control measures may generate visible short-term action, but they can also produce campaign-style governance, selective enforcement, compliance games, and factor misallocation. Market-based mechanisms may be more efficient, but they require relatively mature institutions, credible enforcement, and transparent information. Fiscal subsidies and green investments may ease transition pressures, yet they can also foster rent-seeking, overinvestment, and inefficient allocation if not properly designed. Thus, the policy consequences of environmental attention depend crucially on the governance mode through which that attention is operationalized.

These tensions suggest that the effectiveness of governmental environmental attention depends on several enabling conditions. First, environmental goals must be institutionalized rather than treated as temporary political slogans. Second, local governments must possess the administrative and fiscal capacity needed to translate policy attention into implementation. Third, environmental governance must be integrated with industrial upgrading, technological transition, and regional coordination, rather than relying solely on short-term administrative mobilization. Without these conditions, stronger environmental attention may yield diminishing returns or even counterproductive outcomes.

5. Conclusion and Policy Implications

This paper has developed a governance-based interpretation of the relationship between governmental environmental attention and urban carbon emissions. Rather than treating local governments simply as executors of predetermined environmental policy, the paper has argued that governmental environmental attention should be understood as a prior governance variable that shapes policy salience, instrument choice, resource allocation, and implementation orientation. Through these channels, it affects the trajectory of urban carbon emissions.

The main conclusion is that governmental environmental attention matters, but not in a simple or unconditional way. It may reduce carbon emissions by strengthening regulation, promoting market-based environmental governance, supporting green investment, and facilitating industrial restructuring. At the same time, its effects may be weakened or even offset by growth-oriented pressures, regional

competition, weak implementation capacity, structural dependence on high-emission sectors, and inappropriate policy instruments. The relationship between governmental environmental attention and urban carbon emissions is therefore best understood as conditional, mediated, and potentially nonlinear.

Theoretically, the paper suggests that environmental governance research should move beyond a narrow concern with whether specific instruments work and devote greater attention to the upstream formation of policy priorities and the allocation of governmental attention. Understanding why some local governments treat environmental governance as central while others do not is essential to explaining variation in policy implementation and environmental outcomes.

From a policy perspective, several implications follow. First, environmental attention should be transformed from textual commitment into institutionalized governance. Environmental goals must be embedded in cadre evaluation, budgeting, project approval, and industrial policy rather than remaining confined to formal statements. Second, policy instruments should be matched to local structural conditions. Regions with a high concentration of energy-intensive sectors require stronger support for technological upgrading and transition costs, whereas structurally advantaged regions may rely more heavily on market-based instruments. Third, the continuity, predictability, and credibility of environmental policy should be strengthened so as to avoid campaign-style governance and short-term policy swings that undermine low-carbon investment. Fourth, regional coordination mechanisms should be improved to reduce beggar-thy-neighbor incentives and enhance the collective effectiveness of carbon mitigation governance.

More broadly, modernization based on harmonious human–nature coexistence is not merely a matter of deploying emissions-reduction technologies. It also requires a reordering of governance priorities and a restructuring of local development logic. The importance of governmental environmental attention lies precisely in whether environmental concerns can be substantively incorporated into local development agendas and translated into stable, institutionalized, and effective governance arrangements. In this sense, the study of governmental environmental attention offers a useful entry point for understanding the political and institutional foundations of urban low-carbon transition.

Acknowledgements

This work is supported by Innovation and Entrepreneurship Training Project for College Students of Anhui University of Finance and Economics in 2025, Project number: S202510378429.

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