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Abstract

Administrative agencies rely heavily on the foundational legal mechanisms of the administrative state – rulemaking, licensing, and enforcement adjudication – to pursue their statutory objectives. These foundational mechanisms differ from each other in critical ways, including the applicable procedures (and the participatory rights that accompany them), the legal effect of their use, and the nature and extent of oversight (including judicial oversight) that accompany their use. As a result, an agency's choice of which mechanism(s) to use to implement its statutory mission has significant impacts on key legitimizing features and values of the administrative state.

Despite its importance, agency mechanism choice occurs largely in the shadows of the administrative state. Congress typically gives agencies considerable autonomy to choose among legal mechanisms, and none of the three branches whose actions legitimize agency action pays much attention to how agencies make those choices. Scholars' traditional conception of "canonical administrative law" similarly has generally given short shrift to agency mechanism choice. This neglect is a prominent example of the symptomatic lack of attention to what some have referred to as internal administrative law.

This Article helps to fill this gap in the literature through an empirical case study of how one agency, the U.S. Environmental Protection Agency (EPA), has used regulations, permitting, and enforcement adjudication to reform its enforcement program through implementation of an initiative called "Next Generation Compliance" (Next Gen). The case study demonstrates that at least five variables have influenced EPA's agency mechanism choices to advance Next Gen – the key actors that participate in programmatic design and implementation (both within and outside the agency), the agency's goals, the governance tools at its disposal, its authority under different statutory regimes, and what we refer to as "intra-mechanism" features (differences, for example, between administrative and judicial enforcement adjudication). Ours is the first empirical study in the law review literature of which we are aware that seeks to unpack an agency's mechanism choices to advance understanding of the choices an agency made, why it made them, and what effects those choices had. Because we examine factors that have not been considered before in the literature, the Article holds special promise for significantly extending and enriching our understanding of critical factors that influence agency mechanism choice decisions. The provisional assessment of the implications of our findings that we provide should help guide policymakers interested in driving agency mechanism choices toward strategies most likely to accomplish statutory goals while promoting the legitimacy of administrative decisionmaking.

I. Introduction

This Article explores questions at the heart of the operation of the federal administrative state that relate to agencies' choice of legal mechanisms to carry out their statutory missions. Three types of legal mechanisms – rulemaking, licensing, and enforcement adjudication – are the basic legal instruments that administrative agencies use to do their work and pursue their statutory objectives.[1] The factors that govern agency mechanism choice, and the implications of

[1] The administrative law casebooks and treatises highlight the central role these mechanisms play in agency work. *See, e.g.*, ROBERT L. GLICKSMAN & RICHARD E. LEVY, ADMINISTRATIVE LAW: AGENCY ACTION IN LEGAL CONTEXT

such choices for agencies' ability to promote the goals of the statutes they administer, are worthy of close attention for at least two reasons. First, agencies would be able to accomplish little without recourse to one or more of the three basic mechanisms and the administrative state would largely grind to a halt without their use. It is therefore important to understand the manner in which these mechanisms operate and how and why agencies choose among them.

Second, these fundamental building blocks for the operation of the administrative state differ from each other in critical ways, including in the procedures agencies must follow in using them (and the participatory rights that accompany them), the legal effect of their use, and the nature and extent of oversight (including judicial oversight) that accompany their exercise.[2] Because of these significant differences,[3] an agency's choice among available legal mechanisms to advance a policy goal has significant implications for fundamental administrative law values such as transparency, accountability, participation, deliberation, fairness, and consistency, and therefore for the legitimacy of the administrative state.[4] Thus, it is incumbent on anyone interested in understanding how the administrative state operates, and in assessing its legitimacy, to give close attention to an agency's use of its available legal mechanisms to carry out its mission.[5]

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chs. 3-5, 7 (2d ed. 2015); WILLIAM F. FUNK & RICHARD H. SEAMON, ADMINISTRATIVE LAW 13 (3d ed. 2009); JOHN F. MANNING & MATTHEW C. STEPHENSON, LEGISLATION AND REGULATION 546 (2nd ed. 2015); *see also* Robert L. Glicksman & David L. Markell, *Unraveling the Administrative State: Mechanism Choice, Key Actors, and Regulatory Tools*, 36 VA. ENVTL. L.J. 318 (2018) [hereinafter *Unraveling*]. Agencies also rely on other mechanisms to advance their agendas, including nonbinding actions such as guidance documents. Nicholas R. Parrillo, *Federal Agency Guidance: An Institutional Perspective* 4, 7 (Admin. Conf. of the United States, Oct. 12, 2017), https://www.acus.gov/sites/default/files/documents/parrillo-agency-guidance-final-report.pdf (stating that "[g]uidance . . . is a ubiquitous and essential feature of countless agency programs," and noting that guidance is "conventionally said to be nonbinding"). The debate about the binding character of guidance is longstanding and we do not address it here. The Trump Administration has mandated that agencies reduce their reliance on informal mechanisms such as guidance documents. *See, e.g.*, Memorandum for All Components from the Attorney General, Prohibition on Improper Guidance Documents (Nov. 16, 2017), https://www.justice.gov/opa/press-release/file/1012271/download.

[2] M. Elizabeth Magill, *Agency Choice of Policymaking Forum*, 71 U. CHI. L. REV. 1383, 1384 (2004) (pointing out that "[t]he agency's choice among these policymaking forms matters because . . . each is distinct" in terms of the three factors cited in the text). The third variable, judicial oversight, may be further unpacked into two sub-parts – whether and when agency action is judicially reviewable and the standard of review a court will use when review is available. *Id*. at 1396.

[3] Differences between legal mechanisms can be overstated. *See* Anaconda Co. v. Ruckelshaus, 482 F.2d 1301 (10th Cir. 1973) (considering whether an agency should have used adjudication rather than rulemaking in a particular situation); David L. Shapiro, *The Choice of Rulemaking or Adjudication in the Development of Administrative Policy*, 78 HARV. L. REV. 921, 924 (1965) [hereinafter Shapiro, *Choice*] (noting that it is not always easy to distinguish between rulemaking and adjudication).

[4] Magill, *supra* note 2, at 1396 (noting that "the agency makes an important choice when it selects the policymaking form its action will take"). The concept of governmental (and particularly agency) legitimacy has received considerable treatment. *See, e.g.*, Seymour Martin Lipset, *Some Social Requisites of Democracy: Economic Development and Political Legitimacy*, 53 THE AM. POL. SCI. REV. 69, 86 (1959) ("Legitimacy involves the capacity of a political system to engender and maintain the belief that existing political institutions are the most appropriate or proper ones for the society."); Emily Hammond & David Markell, *Administrative Proxies for Judicial Review: Building Legitimacy from the Inside-Out*, 37 HARV. ENVTL. L. REV. 313, 316 (2013). *See generally* Jeremy Kessler, *The Struggle for Administrative Legitimacy*, 129 HARV. L. REV. 718 (2016).

[5] There is often a significant interaction between the mechanisms. For example, an unclear rule may complicate subsequent enforcement or permitting efforts. *See. e.g.*, JOEL A. MINTZ, ENFORCEMENT AT THE EPA 110-111

Despite the significant implications that accompany mechanism choice, agencies enjoy broad autonomy to decide how to use the ones that are available to them to implement the statutes they administer. They are constrained only by very limited *ex ante* direction (*e.g.*, through statutory provisions defining the parameters of delegated discretionary authority or budgeting) or *ex post* scrutiny (*e.g.*, through oversight) from the three branches of government whose oversight is critical to ensuring agency accountability. Congress typically gives agencies considerable autonomy to choose among legal mechanisms.[6] The Executive rarely intervenes in agency mechanism choice. Although it has the potential indirectly to influence mechanism choice, the limited direction provided by presidential oversight of agency rulemaking conducted by the Office of Management and Budget's Office of Information and Regulatory Affairs (OIRA) by its terms is focused on the merits (or demerits) of particular rules, not on the underlying choice of rulemaking as the vehicle through which to pursue statutory goals.[7] The courts, often characterized as the legitimizer of agency action through review of its validity,[8] have traditionally shown little interest in assessing agency mechanism choice or directing agencies to use one mechanism rather than another.[9] As Elizabeth Magill observes, "the judicial reaction [to an agency's choice of mechanisms] can be simply described: hands-off. An agency can choose among its available policymaking tools and a court *will not* require it to provide an explanation for its choice."[10] She concludes that agency choice of policymaking form is "not now considered worthy of notice."[11] Taking advantage of this largely hands off posture from the

(revised ed. 2012) (noting that unclear rules "come[] home to roost when the Agency tries to write a permit or take an enforcement action").

[6] *See, e.g.*, NLRB v. Bell Aerospace Co., Div. of Textron, Inc., 416 U.S. 267, 293 (1974) (emphasizing the National Labor Relations Board's broad discretion under the National Labor Relations Act to adopt policy either through rulemaking or adjudication); *but cf.* Chamber of Commerce of the U.S. v. NLRB, 721 F.3d 152, 158 (4th Cir. 2013) (narrowly construing the scope of the NLRB's rulemaking authority). *See generally* 1 RICHARD J. PIERCE, JR., ADMINISTRATIVE LAW TREATISE § 6.9, at 502 (5th ed. 2010) ("Most agency-administered statutes . . . leav[e] the agency with discretion to choose any combination of rulemaking and adjudication it prefers.").

At a more nuanced level, each mechanism comes in various shapes and sizes, and agencies often have the freedom to decide how best to employ a particular mechanism. *See. e.g.*, Eric Biber & J.B. Ruhl, *The Permit Power Revisited: The Theory and Practice of Regulatory Permits in the Administrative State*, 64 DUKE L.J. 133 (2014) (analyzing the flexibility agencies may have in permitting, including the discretion to issue general permits by rule or to permit on a case-by-case basis).

[7] *See, e.g.*, Exec. Order No. 12866, 58 Fed. Reg. 51,735 (Oct. 4, 1993). *See generally* Cass R. Sunstein, T*he Office of Information and Regulatory Affairs: Myths and Realities*, 126 HARV. L. REV. 1838 (2013) (discussing OIRA's role).

[8] Hammond & Markell, *supra* note 4, at 314.

[9] *See, e.g.*, Whitman v. Amer. Trucking Ass'ns, 531 U.S. 457 (2001) (rejecting claim that broad delegation of authority to EPA to adopt air quality standards violated the nondelegation doctrine); Securities and Exchange Commission v. Chenery Corp., 332 U.S. 194 (1947) (recognizing the SEC's authority to apply newly adopted standards in an adjudicatory proceeding).

[10] Magill, *supra* note 2, at 1385 (emphasis in original); *id*. at 1384 (also noting that an agency's "choice about which tool [rulemaking or adjudication] to rely on appears, at first glance, to be unregulated by courts"). Magill notes that this approach is inconsistent with the usual judicial requirement "that agencies provide reasoned explanations for their discretionary choices." *Id*. at 1385. Courts nevertheless indirectly influence agency mechanism choices by "adjusting the consequences of choosing one form or another – for instance, intensifying the standard of review, permitting a party to sue at a particular point, or shaping the procedures that must be followed. . . ." *Id.* In the enforcement arena, the Supreme Court has famously held that courts have virtually no role in reviewing agency decisions about whether to pursue enforcement in particular cases. Heckler v. Chaney, 470 U.S. 821, 831 (1985).

[11] Magill, *supra* note 2, at 1386. One of the purposes of her article was to begin to "notice" such choices. *Id.* The limited judicial attention to agency mechanism choice undoubtedly contributes to the lack of scholarly attention.

three branches, agencies have "gone about their business" of using the diverse set of policymaking mechanisms at their disposal in "varying ways."[12]

A significant challenge for those interested in these dynamics is that agency mechanism choice occurs largely in the shadows of the administrative state, despite its importance. Perhaps as a result, scholars' traditional, narrow conception of "canonical administrative law" has typically given short shrift to agency mechanism choice.[13] The two principal questions we address in this Article are meant to shed new light on this critical feature of agency decisionmaking. First, we assess what mix of mechanisms the U.S. Environmental Protection Agency (EPA) used in implementing a novel enforcement and compliance promotion initiative.[14] Second, we explore why agencies chose one mechanism rather than another and what factors influenced those choices. The limited analysis of this second question that appears in the literature more generally has largely focused on a few key features of rulemaking and adjudication. These include the potential of different mechanisms to influence the scope, cost effectiveness, consistency, accessibility, flexibility, responsiveness, and capacity to address uncertainty of regulatory initiatives. The scholarly literature suggests that agencies' choice of mechanism is likely to be heavily influenced by those features.[15]

We believe that agency mechanism choice is influenced by a more complicated set of factors and relationships than is commonly appreciated. At least five interrelated aspects of regulatory design are critical to achieving regulatory goals, and all of these likely bear on mechanism choice.[16] The first involves the manner in which different actors that participate (or

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[12] *Id*. at 1384; Shapiro, *Choice*, *supra* note 3, at 921 (noting that agency flexibility to choose among mechanisms "is not . . . an unmixed blessing"). Professor Shapiro also observes that the "[t]he problem of choice . . . is one confronting practically every agency. . . ." *Id*. at 923.

[13] *See, e.g.*, William H. Simon, *The Organizational Premises of Administrative Law*, 78 L. & CONTEMP. PROBS. 61, 62 (2015) (defining "canonical" administrative law, which "occupies the largest and most prominent positions in treatises and the casebooks," as "largely concerned with the role of the courts (1) in policing administrative rulemaking and formal adjudication and (2) in enforcing agency compliance with statutes and their own rules"); David Zaring, *Administration by Treasury*, 95 MINN. L. REV. 187, 236 (2010) (arguing that "administrative law conventionally understood misses a great swath of actual administration"). We suggest that administrative law's reach, and the focus of administrative law scholarship, should extend well beyond the role of the courts to encompass internal agency operations and the other key elements of policy design, such as those we discuss here. The literature's lack of consideration of mechanism choice is a prominent, and critical, example of the symptomatic lack of attention to what other scholars have referred to as "internal administrative law." *See* Gillian E. Metzger & Kevin M. Stack, *Internal Administrative Law*, 115 MICH. L. REV. 1239 (2017).

[14] In this Article, we use "EPA" as an umbrella term for both EPA and analogous state-level environmental enforcement. See note 42, *infra*.

[15] We review this literature, and explore the theoretical benefits and disadvantages of these two mechanisms, in a previous Article. *See Unraveling*, *supra* note 1, at 328-49. For a relatively early review of an agency's choice between rulemaking and adjudication, see Shapiro, *Choice*, *supra* note 3, at 929-42 (offering several reasons why agencies ought to use rulemaking more than was occurring at that time); *see also* DANIEL A. FARBER & ANNE JOSEPH O'CONNELL, RESEARCH HANDBOOK ON PUBLIC CHOICE AND PUBLIC LAW 7 (2010) (noting that "little work investigates the origins of private and public actors' preferences in public law").

[16] *See Unraveling*, *supra* note 1, at 335-49 (identifying and elaborating on each of these features of effective governance). Our five components are not intended to be exclusive. For example, budgetary resources shape agency mechanism choice. *See, e.g.*, Jeremy Remy Nash, J.B. Ruhl & James Salzman, *The Production Function of the Regulatory State: How Much Do Agency Budgets Matter*, 102 MINN. L. REV. 695 (2017); Eloise Pasachoff, *Controlling Agencies through the President's Budget Process*, ADMIN & REG. L. NEWS 8 (Winter 2018); *cf.* U.S. Gov't Accountability Office, *Federal Regulations: Key Considerations for Agency Design and Enforcement*

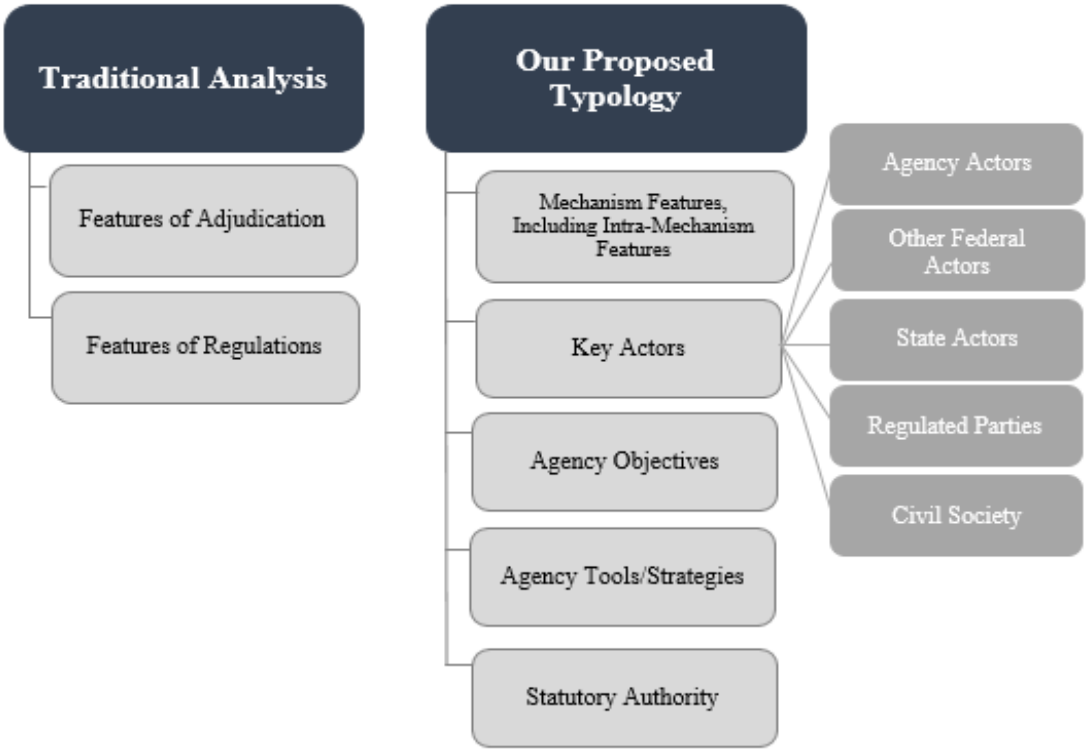
have the potential to participate) in the implementation of regulatory programs may influence mechanism choice. These include actors internal to the agency, other federal actors, other government actors (especially in cooperative federalism systems such as those that the nation's environmental regulatory schemes employ),[17] regulated entities, and regulatory beneficiaries. Second, the goals an agency is supposed to achieve under its authorizing legislation have the potential to influence mechanism choice. Third, we consider governance tools that may be available for use by different regulatory actors, which will necessarily differ in varying regulatory contexts. Fourth, the scope of an agency's statutory authority (and the constraints imposed on its exercise) can narrow or expand the range of mechanism choices available to the agency and the relative attractiveness of these mechanisms. Finally, a series of what we refer to as "intra-mechanism features" form part of the decisionmaking calculus.

Our contention is that both regulatory effectiveness and legitimacy are influenced by an agency's mechanism choices and the factors that influence them. Figure 1 below depicts the factors that the traditional scholarship tends to highlight in considering why agencies use particular legal mechanisms to pursue their policy agendas, and the additional factors that we believe deserve closer attention.

Figure 1
An Expanded Array of Factors that Influence Agency Mechanism Choice

Decisions, GAO-18-22 (2017), https://www.gao.gov/assets/690/687875.pdf (identifying key elements of regulatory design, including (1) regulatory objectives; (2) options for achieving them; (3) potential effectiveness; (4) risks associated with each option; (5) enforcement implications; and (6) performance evaluation). *See also* David L. Markell & Robert L. Glicksman, *Dynamic Governance in Theory and Application, Part I*, 58 ARIZ. L. REV. 563, 618 n.272 (2016) [hereinafter *Dynamic Governance*] (identifying other efforts to explore elements of policy design).

[17] Under most of the federal pollution control statutes, Congress has carved out a significant role for state participation. The allocation of authority between the federal government and the states under these laws is often described as a form of "cooperative federalism." States play an especially significant role in permitting and enforcement, two of the three mechanisms that are the focus of this Article. *See* Robert L. Glicksman, *From Cooperative to Inoperative Federalism: The Perverse Mutation of Environmental Law and Policy*, 41 WAKE FOREST L. REV. 719, 727-54 (2006); David L. Markell, *States as Innovators: It's Time for a New Look to Our "Laboratories of Democracy" in the Effort to Improve Our Approach to Environmental Regulation*, 58 ALB. L. REV. 347, 353-54 (1994).



A framework of this kind extends beyond the limited scope of most treatments of mechanism choice in the literature.

To test the value of our conceptual framework, we conducted an empirical study that tracks an agency's actual mechanism choices as it sought to advance a specific initiative.[18] We reviewed an effort by EPA to transform how it enforces and seeks to improve compliance with the environmental laws it administers. Acknowledging significant shortcomings in the agency's efforts in this arena,[19] in 2013 EPA leaders launched the agency's Next Generation Compliance (Next Gen) initiative because of their judgment that "pollution challenges require a modern approach to compliance, taking advantage of new tools and approaches while strengthening vigorous enforcement of environmental laws."[20] While Next Gen itself concluded as a discrete

[18] Our previous work, *Unraveling*, *supra* note 1, supplies the theoretical foundation for the conceptual framework we apply here for improving regulatory governance. This Article supplies empirical analysis of how EPA has actually implemented a novel initiative to enhance compliance with regulatory duties and the extent to and manner in which each of the factors in our framework has influenced that initiative.

[19] *See* U.S. Gov't Accountability Office, GAO-13-115, *Environmental Protection: EPA Should Develop a Strategic Plan for Its New Compliance Initiative* 1 (2012), https://www.gao.gov/assets/660/650711.pdf [hereinafter GAO-13-115] (noting that EPA has reported that it is not achieving anticipated environmental and public health benefits because of substantial noncompliance rates in some programs); David L. Markell & Robert L. Glicksman, *A Holistic Look at Agency Enforcement*, 93 N.C. L. REV. 1, 45, 63-64 (2014) [hereinafter *Holistic*] (quoting EPA Administrator's acknowledgment that the agency's clean water enforcement programs were ineffective and that noncompliance levels were unacceptably high); *Dynamic Governance supra* note 16, at 586, 591-92, 594 (discussing information deficiencies, shortcomings in coordination and effectuation by states, and inadequate resources).

[20] Cynthia Giles, *Next Generation Compliance*, 30 ENVTL. F. 22, 22 (Sept.–Oct. 2013) [hereinafter Giles, *NGC*] (noting that EPA launched Next Gen because of the need for dramatic change). According to Giles, who was then

initiative in fiscal year 2017, "many of the tools and approaches continue to be relevant and useful," as EPA has noted.[21] As a result, our findings continue to be relevant to EPA's enforcement-related mechanism choices. Moreover, and more importantly, our findings provide critical insights into the factors that influence mechanism choice that are relevant to similar choices by other agencies. We believe that our framework, and the analysis of its application to Next Gen, can provide valuable assistance to any agency as it considers which of the mechanisms available to it are likely to be best suited to achieving regulatory goals, and to those overseeing agency mechanism choices and scholars reviewing their efficacy.

The vision behind EPA's commitment to Next Gen was that it could improve enforcement, and compliance more generally, by advancing five objectives, some of which took advantage of dramatic developments in technological capacity: (1) increased deployment of *advanced monitoring*, to improve detection of pollution generally and legal violations in particular; (2) greater *transparency*, to expand the accessibility of salient compliance-related information; (3) *electronic reporting* (e-reporting), to streamline and improve the gathering and dissemination of compliance-related information; (4) use of *innovative enforcement strategies*, such as third-party monitoring, to improve understanding of compliance concerns and incentivize actions to address them; and (5) *clearer rules* that make compliance easier (what EPA has referred to as "compliance built-in").[22]

Our findings validate the conceptual framework for analyzing mechanism choice reflected in Figure 1 by showing a relationship between EPA's mechanism choices and each of the variables in that framework. In particular, we find a relationship (which in many cases is statistically significant) between EPA's use of its legal mechanisms and each of the other aspects of regulatory design in our conceptual framework. We explore whether the identity of the actors involved affects EPA's use of the different mechanisms. Here, we evaluate the possible impact on mechanism choice of the involvement of different EPA officials and the Department of Justice (DOJ).[23] In addition, given that EPA issues permits to and pursues enforcement actions

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the head of EPA's Office of Enforcement and Compliance Assurance (OECA), Next Gen would "mov[e] our compliance programs into the 21st century." *Id*. Next Gen was also motivated by resource shortages. *See* U.S. ENVTL. PROTECTION AGENCY, NEXT GENERATION COMPLIANCE: STRATEGIC PLAN 2014-2017, 3-7 (2014), http://www2.epa.gov/sites/production/files/2014-09/documents/next-gen-compliance-strategic-plan-2014-2017.pdf [hereinafter EPA, NGC 2014-2017] ("Budget uncertainties and constrained resources only reinforce the imperative to move forward with Next Generation Compliance."); *EPA Official: 'Next Generation' Improving Compliance*, 47 ENV'T REP. (BNA) 1742 (2016) (quoting EPA official acknowledging limited inspection resources). For more on the genesis and components of Next Gen, see *Dynamic Governance, supra*, note 16, at 610; David L. Markell & Robert L. Glicksman, *Next Generation Compliance*, 30-Winter NAT. RESOURCES & ENV'T 22, 22 (2016).

[21] *See* U.S. EPA, Next Generation Compliance, https://www.epa.gov/compliance/next-generation-compliance (last visited Feb. 3, 2019).

[22] Cynthia Giles, NGC, *supra* note 20, at 22; Christina Baptista, *Next Generation Compliance: EPA embraces technology and transparency to promote compliance with environmental laws*, TRENDS, Jul.-Aug. 2016, at 10, 11 (characterizing rules with compliance built in as "designing rules and permits that are clear, easy to implement, and contain self-reinforcing drivers, such as third-party verification").

[23] We also would like to have reviewed the impacts of actors' roles in ways the data available to us did not allow. For example, states play a critical role in environmental regulation, and we hoped to consider consistencies and differences between and among states, but we lacked enough data about state involvement. *See, e.g.*, Office of Technology Assessment, *Environmental Policy Tools: A User's Guide*, OTA-ENV-634 130-31, at 591-94 (1995), https://ota.fas.org/reports/9517.pdf [hereinafter OTA User's Guide] (discussing limited data on state performance). Our empirical results suggest that the challenge of understanding state activity qualifies as an

against both municipal and industrial parties, we evaluate whether the identity of the regulated party affects how EPA has used these two mechanisms.

Second, we assess whether EPA uses its legal mechanisms differently to advance its objectives – for example, whether it uses rulemaking more to advance one goal, such as expanding e-reporting, while using enforcement to advance a different objective, such as increased use of advanced monitoring. As far as we know, no one has tried to connect an agency's use of particular mechanisms to the use of particular regulatory tools and the achievement of specific objectives in this way.[24]

Third, we evaluate whether statutory authority might affect mechanism choice. Here, we test whether EPA's use of mechanisms is consistent across statutory authorities, or whether mechanism use varies depending on the statute involved. We found, for example, that EPA used a different mix of mechanisms to enforce and foster improved compliance with different organic statutes (e.g., more enforcement settlements and fewer regulation and permitting actions under some statutes than others).

Finally, moving to a more nuanced level of analysis, we assess the impact on EPA mechanism choice of "intra-mechanism" differences. For example, in some enforcement cases EPA includes a Supplemental Environmental Project (SEP) as a "beyond compliance" strategy to commit an alleged violator to agree to certain types of injunctive relief, while in others it does not. We evaluate the impact of this intra-mechanism variation on other factors, such as the types of objectives EPA sought to achieve, and the types of defendants involved in the cases.[25] The empirical findings in Part II of this Article support our hypothesis that more factors than those that are the focus of the conventional administrative law literature affect mechanism choice.

In short, we consider mechanism choice from the perspective of not only features of the mechanisms themselves, but also taking into account the intersection of the use of different legal mechanisms with the other key features of administrative governance we identify above – the actors, objectives, tools, statutory authority, and more subtle "intra-mechanism features."[26] This analysis enriches understanding of the different dimensions that influence agency mechanism

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Achilles heel for those interested in truly grappling with the workings of the administrative state. Similarly, significant regional differences exist within EPA, but data on regional participation in Next Gen is limited. While we offer a few observations about regional differences, this is another area that holds promise for additional research.

[24] While EPA identified five objectives in its Next Gen initiative, other objectives or strategies are possible, too. *See, e.g.*, OTA User's Guide, *supra* note 23 (considering options for regulatory reform and innovation); U.S. Government Accountability Office, *Federal Regulations: Key Considerations for Agency Design and Enforcement Decisions*, GAO-18-22 (2017), https://www.gao.gov/assets/690/687875.pdf (discussing strategies such as relatively flexible performance designs that "establish an outcome but allow flexibility in how to achieve it," more prescriptive design-based regulations that "specify "a certain technology, and compliance assistance).

[25] *See infra* Part IIB.8.

[26] Brian Galle has suggested that "[g]overning in the twenty-first century . . . is a problem of incentive design. Regulators often know what they want, but not how best to achieve it." Brian Galle, *In Praise of Ex Ante Regulation*, 68 VAND. L. REV. 1715, 1716 (2017). Mechanism choice is one dimension of this challenge. Our conceptual framework, supported by our empirical findings, reinforces the complexity of the challenge. Our study reveals other challenges to effective governance as well, including challenges due to less-than-complete data, and significant coordination barriers.

choice and paves the way for further research aimed at increasing understanding of these dimensions and their implications for the effectiveness and legitimacy of regulatory governance.

Part II of the Article provides our case study of EPA's use of its legal mechanisms to implement Next Gen. After explaining our methodology, this Part provides our findings concerning how EPA used the legal mechanisms available to it to implement Next Gen. It shows the significant relationship between EPA's choice of mechanisms to advance Next Gen and the variables we identify in our conceptual framework.

In Part III we consider possible motivations for EPA's mechanism choices, in an effort to explain why EPA made the decisions it did. Further, we explain why it is important to understand what drives agency mechanism choice because of its implications for core values of the administrative state such as transparency, accountability, participation, deliberation, effectiveness, and efficiency.

Part IV concludes by highlighting that the fundamental value of this project lies in the importance of the questions it raises even more than in the specific answers available at this point to explain EPA's actions in its implementation of Next Gen. Although the components of other regulatory programs will differ from the use of EPA's enforcement and compliance-related authorities, our study of Next Gen provides a template (or at least a starting point) for similar analysis of mechanism choice in other regulatory contexts.[27]

II. A Case Study of EPA's Use of Legal Mechanisms in a Novel Enforcement and Compliance Venture

This Part explains our methodology in identifying legal mechanisms (rules, enforcement settlements, and permits) that EPA or a state has used to advance EPA's Next Gen initiative. It then details how EPA and the states have used these mechanisms to advance Next Gen.

A. *Methodology*

We identified 130 instances in which EPA or a state used enforcement, rulemaking, or permitting to advance Next Gen objectives – 87 enforcement settlements, 26 regulations, and 17 permits.[28] EPA posted 84 of the 87 settlements in a series of eight compilations of Next Gen

[27] We agree with the cautionary note expressed by Professors Farber and O'Connell about the importance of context. *See* Daniel A. Farber & Anne Joseph O'Connell, *Introduction: A Brief Trajectory of Public Choice and Public Law*, *in* FARBER & O'CONNELL, *supra* note 15, at 8-9 (recommending that "any normative analysis should be particularized to specific institutional arrangements and actors…. [W]e should be wary of normative recommendations that fail to pay close attention to context."); *cf*. Jacob E. Gersen, *Designing Agencies*, *in id*. at 345 ("the best public choice scholarship shows that global claims about the normative status of delegation are nonsensical. Evaluation must be localized and sensitive to the institutional variation . . . . ").

[28] We refer to these 130 instances as "instruments" throughout this Article. On December 30, 2018, we ran a search with the terms "Next Generation" /s enforcement compliance in the following databases: All States (Cases), EPA Title V Final Orders, EPA Regional Decisions, EPA Environmental Appeals Board, and APA Administrative Law Judge Decisions. This search turned up no relevant documents. We also searched the All Federal (Cases) database using the terms EPA and "Next Generation" and turned up no relevant decisions.

activity that it issued beginning in 2015.[29] We identified three additional settlements that include Next Gen features through our own research.[30] EPA has posted five compendia that list legal

[29] EPA designates four of these as "Settlement Highlights" for Next Gen. These four lists only include settlements that incorporate Next Gen features, and do not include permits or regulations. The lists include settlements under the range of statutes EPA administers. U.S. EPA, *Next Generation Compliance: Enforcement Settlement Highlights* (last edited Jan. 12, 2015), https://www.epa.gov/sites/production/files/2015-01/documents/nextgen-enfsettlementhighlights.pdf [hereinafter *Settlement Highlights*, Jan. 2015]; U.S. EPA, *Next Generation Compliance: Enforcement Settlement Highlights* (last edited May 23, 2016) [hereinafter *Settlement Highlights*, May 2016]; U.S. EPA, *Next Generation Compliance: Enforcement Settlement Highlights* (last edited Sept. 8, 2016) [hereinafter *Settlement Highlights*, Sept. 2016]; U.S. EPA, *Next Generation Compliance: Enforcement Settlement Highlights* (last edited December 20, 2016), https://www.epa.gov/sites/production/files/2016-05/documents/nextgen-enfsettlementhighlights.pdf [hereinafter *Settlement Highlights*, Dec. 2016].

The other four compilations are statute-based. Each lists the suite of Next Gen enforcement settlements, permits, and regulations undertaken under a particular statute. Two of the compilations list Next Gen matters under the Clean Water Act, U.S. EPA, *Appendix to NPDES Compendium of Next Generation Compliance Examples* (last edited Sept. 29, 2015) [hereinafter *NPDES 2015 Compendium Appendix*]; U.S. EPA, *NPDES Compendium of Next Generation Compliance Examples* (last edited Sept. 2016), https://www.epa.gov/sites/production/files/2015-06/documents/npdesnextgencomplcompendium.pdf [hereinafter NPDES 2016 Compendium]; U.S. EPA, *Appendix to NPDES Compendium of Next Generation Compliance Examples* (last edited Sept. 2016), https://www.epa.gov/sites/production/files/2015-06/documents/npdesnextgencomplcompendium-appendix.pdf [hereinafter NPDES 2016 Compendium Appendix]. A third compilation is for Next Gen activity under the Resource Conservation and Recovery Act (RCRA), U.S. EPA, *RCRA Compendium of Next Generation Compliance Examples* (last edited Sept. 2016), https://www.epa.gov/sites/production/files/2016-09/documents/rcranextgencomplcompendium.pdf [hereinafter *RCRA Compendium*]; U.S. EPA, *Appendix to RCRA Compendium of Next Generation Compliance Examples* (last edited Sept. 2016), https://www.epa.gov/sites/production/files/2016-09/documents/rcranextgencomplcompendium-appendix.pdf; [hereinafter *RCRA Compendium Appendix*]. The fourth compilation is for such activity under the Clean Air Act. U.S. EPA, *Compendium of Next Generation Compliance Examples in Clean Air Act Programs* (last edited Sept. 2016), https://www.epa.gov/sites/production/files/2016-09/documents/caanextgencomplcompendium.pdf [hereinafter *CAA Compendium*]; U.S. EPA, *Appendix to Compendium of Next Generation Compliance Examples in Clear [sic] Air Act Programs* (last edited Sept. 2016), https://www.epa.gov/sites/production/files/2016-09/documents/caanextgencomplcompendium-appendix.pdf; [hereinafter *CAA Compendium Appendix*].

In reviewing EPA's compilations, we noted that six settlements appear on earlier lists but not on later lists: In the Matter of Wilcox Farms, Inc.; Alpha Natural Resources; City of Fall River; CITGO; U.S. v. Titanium Metals Corp., U.S. v. Roquette America. We included these six in our data base based on our understanding that EPA believes the six continue to qualify as Next Gen settlements. Jon Silberman, Feb. 8, 2017 e-mail to David Markell. We also reviewed two articles that EPA officials have published concerning Next Gen, neither of which identified any settlements not included on one of EPA's eight lists. Giles, *NGC*, *supra* note 16; David A. Hindin & Jon D. Silberman, *Designing More Effective Rules and Permits*, 7 GEO. WASH. J. U. J. ENERGY & ENV'T 103 (2016).

[30] EPA is clear in its compilations that its lists are "illustrative, not exhaustive." *See, e.g.*, *Settlement Highlights*, Dec. 2016, *supra* note 29; Silberman email, *supra* note 29. We conducted searches for additional Next Gen settlements in three EPA websites, through January 31, 2017: EPA.gov, ECHO Enforcement Case Search https://echo.epa.gov/facilities/enforcement-case-search?srch=adv, and EPA Enforcement Civil Cases and Settlements, https://cfpub.epa.gov/enforcement/cases/. We searched the EPA databases using "Next Generation" and "Next Gen" to see if any summaries or press releases specifically used this terminology. We also searched Westlaw and Bloomberglaw's dockets using search terms "next gen!," "advanced monitoring," "e-reporting," and variations of these terms. We are grateful to Katie Miller, reference librarian, Florida State University College of Law, for conducting these searches. The three settlements we discovered through this series of searches involve U.S. v. Tonawanda Coke Corp., Consent Decree, (W.D.N.Y. May 11, 2015), https://www.justice.gov/sites/default/files/enrd/pages/attachments/2015/05/11/tonawanda_consent_decree_with_appendices.pdf; U.S. v. HollyFrontier Refining & Marketing LLC., Consent Decree (1:15-cv-02024) (D.C. Dist. Nov. 19, 2015); U.S. & The Commonwealth of PA, Dept. of Env. Prot. v. DE County Reg. Water Quality Control Authority (DELCORA) Consent Decree, (E.D.P.A. Aug. 17, 2015), https://www.epa.gov/enforcement/delaware-county-regional-water-quality-control-authority-clean-water-act-settlement. The EPA press releases and summaries

mechanisms that include Next Gen features, two for actions under the Clean Water Act (CWA),[31] a third for actions under the Clean Air Act (CAA),[32] a fourth for actions under the Resource Conservation and Recovery Act (RCRA),[33] and a fifth for actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), RCRA, and state clean-up authorities.[34] These Compendia provided the starting point for our effort to identify rules that advance Next Gen ideas, listing a total of twelve rules that include Next Gen features. Of those, nine are state regulations.[35] We identified an additional fourteen federal regulations that include Next Gen features through a search of the Federal Register, and additional legal research.[36] EPA's five statute-specific Compendia identified 17 permits that use Next Gen tools.[37]

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announcing the HollyFrontier and DELCORA settlements specifically reference the Next Gen character of the settlements. https://www.epa.gov/enforcement/reference-news-release-us-settles-gasoline-refiner-reduce-emissions-utah-facility; https://www.epa.gov/enforcement/delaware-county-regional-water-quality-control-authority-clean-water-act-settlement#nextgen. We determined that the Tonawanda Coke settlement included Next Gen features based on our review of John Haerzfeld, *Tonawanda Coke Agrees to Pay $12 Million in Civil Case, Brings Total to $42 Million*, 46 ENV'T REP. 1470 (May 15, 2015) (describing the third-party auditing features as consistent with Next Generation enforcement). While our database includes more Next Gen settlements than EPA has posted in its compilations, we recognize that we may not have found them all.

[31] *NPDES Compendium*, Sept. 2015, *supra* note 29; NPDES *Compendium*, Sept. 2016, *supra* note 29.

[32] *Clean Air Act Compendium*, *supra* note 29.

[33] *RCRA Compendium*, *supra* note 29. These statutes are the major federal pollution control regulatory statutes.

[34] U.S. EPA, *Next Generation Cleanup Compendium of Examples* (last edited Sept. 2016), https://www.epa.gov/sites/production/files/2016-10/documents/cleanupnextgencomplcompendium.pdf.

[35] The affected states are California, Connecticut, Colorado, Indiana, Massachusetts, New Jersey, New York, Ohio, and Oregon. All but the Colorado, California, Massachusetts, and New Jersey regulations are listed in the NDPES Compendium & Annex. The Colorado regulation is listed in the RCRA Compendium and Appendix, and the other three states' regulations are listed in the Cleanup Compendium.

[36] To find the rules and regulations with Next Gen features, first we reviewed each of the following documents: *Next Generation Cleanup Compendium of Examples*, *supra* note 29; *Settlement Highlights*, Dec. 2016, *supra* note 29; *Clean Air Compendium*, *supra* note 19; *Clean Air Compendium Appendix*, *supra* note 29; *RCRA Compendium supra* note 29; *RCRA Compendium Appendix*, *supra* note 29; *NPDES 2016 Compendium*, *supra* note 29; *NPDES 2015 Compendium Appendix*, *supra* note 29; *NPDES 2016 Compendium*, *supra* note 29. We also referred to Giles, *NGC supra* note 20; Hindin & Silberman, *supra* note 29; and *Dynamic Governance*, *supra* note 29. We searched the following websites: federalregister.gov, epa.gov (including EPA's nascent (beta stage) "Professional Search" function"), nepis.gov.epa, fdsys.gov, ecfr.gov, and reginfo.gov using each of the following terms: "Next Gen," "Next Generation," "fence line," "fenceline," "fence-line," "emissions," enhanced monitoring," "advanced monitoring," "e-reporting," and "electronic reporting." In addition, we searched Westlaw's Administrative Decisions Environmental Protection Agency materials for one of the foregoing terms occurring within the same document as rul!, regul!, or settl! (where ! represents all letters after the root of the searched term, thereby capturing all variations). Further, we searched the Federal Digital System (www.gpo.gov/fdsys) (currently found at https://www.govinfo.gov) and ecfr.gov (electronic version of the Code of Federal Regulation but not the official C.F.R.) to provide a cross-check on what we found in the Federal Register. Barbara Kaplan, Research Librarian, Florida State University College of Law, conducted this search and we are grateful for her efforts. We identified several proposed rules that incorporate Next Gen tools, but we have only coded the rules that are final.

Because, according to EPA officials, the Compendia are not intended to provide comprehensive lists of the use of the three key legal mechanisms to advance Next Gen goals, we did not expect the Compendia to include all of the rules that use Next Gen tools. *See* Silberman email, *supra* note 29.

[37] A member of EPA's Next Generation Compliance Team advised us to rely on the Compendia for information on permits that include Next Gen features. Christina Baptista, EPA Next Generation Compliance Team, e-mail to Katrina M. Miller (Sept. 8, 2016) (noting, in response to an e-mail from Ms. Miller asking if there is a comprehensive list of permits that use Next Gen tools, that she did not believe EPA has a comprehensive list of permits with Next Gen, and that once the Compendia are available, "you will be able to see what EPA HQ is aware of in terms of permits with Next Gen"). We asked EPA for advice about how best to search EPA databases

We coded each enforcement settlement, regulation, and permit identified as relevant to Next Gen to reflect each instrument's incorporation of one or more of EPA's five Next Gen tools: (1) advanced monitoring, (2) e-reporting, (3) transparency, (4) compliance built in, and (5) innovative enforcement.[38] EPA itself documents the Next Gen features for 25 of the 87 settlements, and EPA documents the Next Gen features in all of the permits in our database.[39] In our coding we largely deferred to EPA's characterizations of these settlements and permits, although we conducted our own independent review of these items. We coded the remaining settlements and regulations, for which EPA did not provide any guidance, ourselves.[40]

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including Enforcement and Compliance History Online (ECHO) and the Permit Compliance Systems and Integrated Compliance Information System (PCS-ICIS) databases for permits that include Next Gen tools. The ECHO website allows users to search facilities to determine compliance with environmental regulations and allows facilities to be narrowed by water or air permits. ECHO contains the PCS-ICIS databases, which contain information about companies holding National Pollutant Discharge Elimination System (NPDES) permits under the CWA. EPA officials advised us that the agency does not require states to identify Next Gen features in permits, so that its databases do not include that information. *See, e.g.*, Katrina M. Miller e-mail to Catherine Tunis, EPA Next Generation Compliance Team (Sept. 8, 2016); Catherine Tunis e-mail to Katrina M. Miller (Sept. 8, 2016) (also recommending the Compendia as sources of information about the use of permitting to advance Next Gen tools). This sub-total of permits obviously represents an extremely small subset of permits issued by EPA and the states. *See, e.g.*, Analyze Trends: State Water Dashboard, http://echo.epa.gov/trends/comparative-maps-dashboards/state-water-dashboard?state=National&view=activity.

We note that, because Next Gen is a relatively new regulatory innovation, and because of the exploratory nature of our analysis, our sample sizes are small. In particular, we note that the sample includes only 17 permits, many of them state-issued (as are many of the regulations that we uncovered). The nature of the sample limits some of the empirical analyses that we can perform, and we urge caution in interpreting these exploratory findings.

[38] These are the categories Assistant Administrator Giles used in the article that helped launch Next Gen. Giles, *NGC*, *supra* note 20, at 22-24.

[39] Each compendium contains a chart that specifies the Next Gen feature(s) EPA identifies as included in each settlement. *NPDES 2015 Compendium Appendix*, *supra* note 29; *NPDES 2016 Compendium Appendix*, *supra* note 29; *Clean Air Act Compendium Appendix*, *supra* note 29; *RCRA Compendium Appendix*, *supra* note 29. We coded one case, Lynx Enterprise, which was discussed in the text of the RCRA compendium, but was not listed on the RCRA compendium appendix.

[40] Coding was conducted by Professors Glicksman and Markell and two law librarians. A pilot study of inter-coder reliability sampled 414 points of agreement or disagreement across approximately 30% of the 130 Next Gen items in our database and revealed an inter-coder reliability of 91.30%. Accounting for chance agreement among coders, the Cohen's Kappa value was 0.83, suggesting no significant reliability problems. Any coding disagreements were later resolved through mutual consultation and cross-checking. We reviewed the EPA summaries in the agency-posted Settlement Highlights and, as necessary, the EPA press release and other materials for which EPA provided links in those Highlights. We coded a settlement as including the "e-reporting" Next Gen tool if the settlement required the regulated party to report to EPA electronically, such as by submitting the discharge monitoring reports (DMRs) required under the CWA to EPA electronically. *See, e.g.* U.S. and State of Maine v. City of Bangor, which requires electronic data submission with real-time data on electronic-flow monitoring from all of the City's significant CSO outfalls. We coded a settlement as including the "transparency" tool if it required the regulated party to post information that would be available to the public via a website or otherwise. *See, e.g.*, In the Matter of: Wal-Mart Stores, Inc., which requires maintaining a hazardous waste electronic database available to all workers to help identify hazardous wastes. We only coded a settlement as involving a supplemental environmental project (SEP) if the SEP itself required the Next Gen feature. For example, we coded U.S. v. Total Petroleum Puerto Rico as including a SEP because EPA's settlement highlight states, "Total Petroleum agreed to pay a $426,000 penalty, implement compliance measures valued at approximately $1 million, and undertake a $600,000 Supplemental Environmental Project (SEP). Consistent with Next Generation Compliance principles, the injunctive relief requires Total Petroleum to install fully-automated electronic release detection monitoring systems at 137 of its facilities with USTs." We confirmed in the consent decree that this injunctive relief is the SEP. In contrast, we did not code U.S. v. County of Westchester (Westchester Co., NY), as having a SEP because the SEP does not contain any Next Gen

We coded several additional variables for each instrument in order to evaluate possible relationships between use of legal mechanisms by relevant governmental actors and other features of our conceptual framework. We coded the regulatory program(s) in play for each mechanism to assess whether there are variations in how legal mechanisms implement regulatory policy objectives (Next Gen tool advancement) under different statutes (in the vast majority of cases, settlements were negotiated under the CAA, CWA, or RCRA).[41] For enforcement settlements, we coded the government actors involved in each settlement (EPA, in some cases DOJ, and in some cases specific EPA Regions) in an effort to explore whether the identity of these actors influences policy implementation (here, incorporation of Next Gen tools in settlements). In addition, we coded the identity of the settling party (industrial or municipal). We coded permits in the same manner with respect to the identity of the party.

Finally, we included an additional coding item for enforcement settlements to capture whether EPA included a SEP.[42] As with coding for the particular actors involved in each settlement (EPA alone vs. EPA/DOJ, the particular EPA region involved, and identity of the defendants), this more nuanced coding makes possible an "intra-mechanism" comparative analysis of EPA's use of different forms of enforcement settlements.[43]

B. *A Comparative Assessment of the Three Key Legal Mechanisms*

This Section details eight sets of key findings about EPA's use of its legal mechanisms to advance Next Gen that emerged from this study. These findings are novel for two reasons. First, as indicated above, we have explored factors that have the capacity to influence mechanism choice that have not been studied before, at least not in a systematic effort to assess how they affect the use of a particular set of agency tools or the pursuit of identified policy objectives. Second, we have made a first cut at applying our conceptual framework's five variables that may influence mechanism choice to each of these findings. Thus, for example, in addition to our finding that EPA has used enforcement settlements far more than any other mechanism to advance Next Gen (Finding 1), we have provided a provisional explanation for this finding by

features (the SEP involved "(i) increas[ing] the number of days during which unused pharmaceuticals and hazardous household chemicals will be accepted from residents of Water District No. 1 at Westchester's Household Materials Recovery Facility or at other designated sites and (ii) . . . purchas[ing] at least $100,000 worth of 55-gallon rain barrels for residential collection and storage of roof rainwater runoff, to be distributed to residents of Water District No. 1." https://www.justice.gov/usao-sdny/pr/manhattan-us-attorney-announces-consent-decree-resolving-westchester-county-s.

We only coded cases with the "compliance built in" designation if EPA indicated that the case included compliance built in. *See* https://www.epa.gov/sites/production/files/2015-01/documents/memo-nextgen-useinenfsettlements.pdf (defining each of the tools).

[41] For this reason, we do not analyze instruments created under CERCLA in the remainder of this Article. We coded the date of each settlement to explore whether EPA's approaches to policy implementation (advancement of Next Gen tools) has evolved over time. We excluded from our analyses use of Next Gen tools that involved more than one statute.

[42] *See infra* note 105 and accompanying text for a discussion of SEPs.

[43] In addition to EPA Next Gen items, our database includes a small number of state-related Next Gen items. When we say "EPA's" use of Next Gen tools, "EPA" is an umbrella term for both EPA and analogous state-level environmental enforcement, unless we have specifically excluded the state items in our database from the analysis.

linking it to the five key factors that we believe deserve a closer look for their potential influence on mechanism choice.[44]

Finding 1. ***Relative Use of the Different Legal Mechanisms*****.** Of the 130 instances in which EPA or a state used enforcement, rulemaking, or permitting to advance Next Gen objectives, 87 were enforcement settlements, 26 were regulations,[45] and 17 were permits, as noted above.[46] Thus, EPA used enforcement far more than either of the other mechanisms to advance its Next Gen objectives.[47]

Finding 2. ***Mean Incorporation of Next Gen Tools Per Instrument.*** We did not find a meaningful difference in the mean number of Next Gen tools EPA used based on the type of instrument involved.[48] The mean number of tools used per enforcement settlement was 1.47,

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[44] We cannot overstate the provisional and tentative nature of this initial effort. Our explanations are intended to be illustrative rather than comprehensive or final. For example, our data set is limited, especially in the context of permitting, given that the number of permits containing Next Gen features is miniscule in relation to the number of permits issued each year by EPA and the states under the statutes we studied. For another, the time period in which Next Gen was in effect as an ongoing agency initiative was relatively short, which may have limited the initiative's capacity to filter down from EPA, its creator, to the states, which handle the lion's share of permitting and enforcement actions. In light of EPA's statement that it anticipates further use of individual Next Gen components, *see supra* note 21 and accompanying text, the data we explore likely do not comprise the final universe of the use of Next Gen tools in rulemaking, permitting, or enforcement. Finally, we expect others would have filled in the boxes in Figure 2 below differently than we have done. Compiling similar summaries of the relationship between agency mechanism use and the features of regulatory design reflected in Figure 1 above requires an understanding of the factors that influence mechanism choice that we hope our project will help to foster. The combination of our conceptual framework and case study provide a basis for strengthening that understanding.

[45] EPA has long-embraced rulemaking as a centrally important policymaking mechanism. GLICKSMAN & LEVY, *supra* note 1, at 267 ("EPA is one of the most prolific sources of regulations . . . ."). The agency's track record during the time period covered by this case study – proposing 238 rules and finalizing 190 rules between Fall 2013 and Fall 2016 – reflects its extensive use of this mechanism. Historical Unified Agenda and Regulatory Plan, http://www.reginfo.gov/public/do/eAgendaHistory. [KM, need to use same time period]. From the inception of Next Gen, EPA has embraced rulemaking as a critical legal mechanism for advancing Next Gen ideas. It identifies the use of rules as one of the five central elements of the Next Gen initiative. Giles, *NGC*, *supra* note 20, at 22-24.

[46] *See supra* note 28 and accompanying text. We used January 31, 2017 as the cut-off date for finding new Next Gen cases, rules, or permits. Our references to Fall 2016 in footnote 45 refer to the EPA's Unified Agenda, which is published only in the fall and spring of each year. The statistics in the Fall 2016 issue of the Unified Agenda were the latest before our January 31, 2017 cut-off date.

[47] During the time period we cover in our study, from January 1, 2013, through January 31, 2017, EPA finalized a total of 9,493 civil administrative and judicial cases. We found these statistics by searching the EPA's ECHO database of enforcement cases, https://echo.epa.gov/facilities/enforcement-case-search. We searched for civil cases, with EPA as the case lead, in which either a final order was entered in a judicial case or a final order was issued in an administrative case between January 1, 2013 and January 31, 2017.

[48] Wald (2, N = 130) = 1.15, p = .562. We analyzed the data using a specialized Poisson regression for "count" data. *See, e.g.*, A. COLIN CAMERON & PRAVIN K. TRIVEDI, REGRESSION ANALYSIS OF COUNT DATA (2d. ed. 2012) (providing detailed commentary on the Poisson regression). This type of regression produces a "Wald value" with an associated "p-value," to determine whether the differences among the count data from specific groups is statistically meaningful. *Id*. Wald tests, t-tests, chi-square tests, and F-tests (which are also included in the analyses that follow) are all test statistics that yield p-values.

Differences between groups are significant if the statistical tests indicate that the likelihood that the difference observed would occur by chance is 5% or less (as indicated by the p-value as $p < 0.05$). A difference is "marginally significant" if the likelihood of seeing such a difference by chance is greater than 5% but less than 10%. Jennifer K. Robbennolt, *Apologies and Legal Settlement: An Empirical Examination*, 102 MICH. L. REV. 460, 485 n.117 (2003) (citing BARBARA G. TABACHNICK & LINDA S. FIDELL, USING MULTIVARIATE STATISTICS (2d ed.

with a range of 1 to 3. The picture looks much the same for rulemaking (mean of 1.77 tools per rule) and permitting (mean of 1.53 tools per permit). EPA typically was quite selective in its incorporation of Next Gen objectives into its legal mechanisms.[49] Because this finding does not suggest that any particular factor was especially salient as an influence on the mean use of tools in a particular mechanism, we do not discuss it further.

Finding 3. ***Association of Instrument Identity and Next Gen Objectives Advanced.***[50] As Figure 2 indicates, we found that EPA's use of different Next Gen tools varies significantly by mechanism. In other words, there is a statistically significant interaction between the type of legal mechanism used and the likelihood of specific tool usage.[51] Table 1 provides the details. With settlements, EPA was significantly more likely to use advanced monitoring (used in 66.7% of settlements) and transparency (included in 43.7% of settlements) than all other Next Gen tools (used in only 15, 12, and 6 percent of settlements).[52] For permits, in contrast, EPA was more likely to include advanced monitoring, transparency, and e-reporting (as a group, each in the 40-60 percent range), than innovative enforcement and compliance built in (as a group, each is included in less than 6 percent of the permits).[53] For regulations, EPA included transparency, compliance built-in, and e-reporting regularly (each is included in more than 40 percent of the Next Gen rules), more than it has incorporated advanced monitoring or innovative enforcement (each less than 25 percent of the time).[54] Thus, EPA included advanced monitoring as a

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1989)). Because of the small size of our database, we also report "trending" effects, which are not quite marginal. We would need more data for those "trending" differences to reach statistical significance, because we lacked the statistical power with this data set to claim that they are reliable. Other researchers may be able to do so with larger data sets if Next Gen tools are employed more frequently in the future. *See, e.g.*, Jacob Cohen, *Statistical Power Analysis*, 1 CURRENT DIRECTIONS IN PSYCHOL. SCI. 98 (1992).

[49] The choice of whether to include any tools and, if so, which ones, in particular instruments was by no means EPA's alone. In judicial settlements, DOJ obviously also had a voice on behalf of the government. For settlements generally, the alleged violators' agreement to incorporation of particular tools was also an indispensable element of each of the settlements, and permit applicants similarly potentially had some say. The question of how much EPA/DOJ pushed particular tools in specific situations, and the extent and strength of NGO preferences, deserve further attention. The same is true for permitting.

[50] In this section, we analyzed the presence or absence of particular Next Gen tools via a series of binomial probit regressions (with the five Next Gen tools serving as repeated measures, and their presence or absence serving as the binary outcome measure, in a mixed design). We performed these calculations via the Generalized Estimating Equations function of the SPSS statistical software. Where applicable, the models that follow include main effects as well as the predicted interaction effect. For purposes of simplicity, where we have predicted an interactive effect in this section, we report only the results of the test for the interaction.

[51] Wald (7, N = 650) = 51.40, $p < .001$ (interaction effect). Advanced monitoring was more likely to be used than innovative enforcement (95% confidence interval: 0.33, 0.54), e-reporting (0.29, 0.50), transparency (0.01, 0.24), and compliance built-in (0.29, 0.50). Transparency was more likely to be used than innovative enforcement (0.20, 0.41), e-reporting (0.16, 0.38), and compliance built-in (0.16, 0.38). We note that our dataset contained, in addition to data from EPA, 14 state-level Next Gen items. None of these items was a settlement, nine were regulations and the other five were permits.

[52] Wald (4, N = 435) = 97.08, $p < .001$ (simple effect). Advanced monitoring was included in 58 out of 87 settlements and transparency in 38 out of 87 settlements. Innovative enforcement, compliance built-in, and e-reporting were included much less often.

[53] Wald (3, N = 85) = 7.86, $p = .049$ (simple effect).

[54] Wald (4, N = 130) = 12.94, $p = .012$ (simple effect). E-Reporting is part of a larger initiative known as E-Enterprise for the Environment. *See* Memorandum from Bob Perciasepe to Assistant Administrators, etc., E-Reporting Policy Statement for EPA Regulations (Sept. 30, 2013), https://www.epa.gov/sites/production/files/2016-03/documents/epa-ereporting-policy-statement-2013-09-30.pdf (noting that "[m]oving from paper to electronic reporting is a key component of E-Enterprise. . . ."). EPA has noted that "[w]hile e-reporting reduces paper

requirement in over half of Next Gen settlements and permits, but in less than a quarter of regulations. EPA only included e-reporting in 5.7 percent of enforcement settlements, while it included e-reporting as a requirement in roughly 40 percent of Next Gen regulations and permits. Similarly, EPA rarely included compliance built-in as a requirement in its settlements and permits, but compliance built-in tied with transparency as the most prevalent requirement in Next Gen regulations.

Figure 2
Likelihood of Tool Usage (by Mechanism and by Next Gen Tool/Objective)

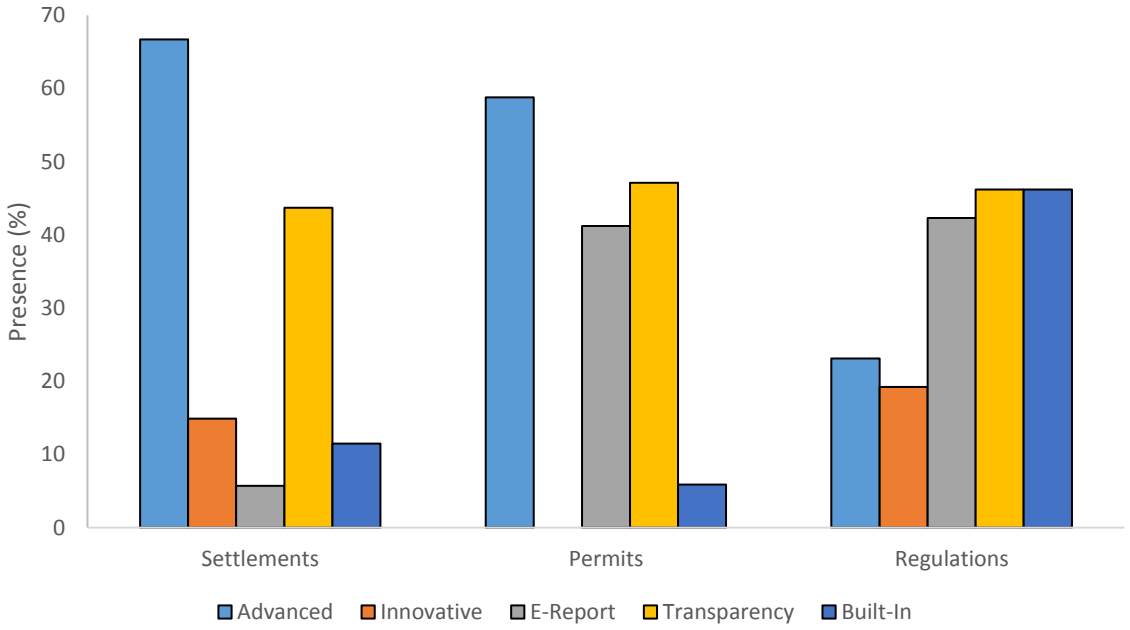


Table 1
Likelihood of Tool Usage (by Mechanism and by Next Gen Tool/Objective)

	Advanced	Innovative	E-Report	Transparency	Built-In
Settlements	66.7	14.9	5.7	43.7	11.5
Permits	58.8	0.0	41.2	47.1	5.9
Regulations	23.1	19.2	42.3	46.2	46.2

Our finding that there are statistically significant variations in how an agency used different legal mechanisms to advance its objectives supports our hypothesis that there is far more to agency mechanism choice than the traditional mechanism-feature factors that scholars

transaction costs associated with creating, mailing, entering, and error correction, it also necessitates new efforts to create the necessary tools to assist the regulated source in submitting quality reports and software to accept the electronic submittals." *NPDES 2015 Compendium Appendix*, *supra* note 29, at 13.

have highlighted.[55] It appears that not only did mechanism-specific features influence how EPA has used different tools to advance Next Gen, but also that differences in the tools themselves may have influenced how EPA has used its legal mechanisms to advance the tools. We are not aware of any other effort to assess possible links between an agency's choice of legal mechanism and a particular agency objective, such as EPA's effort to advance the use of the five Next Gen tools. These findings take us into uncharted waters, at least in the law review literature, and reinforce the value of considering a far broader, and more nuanced, set of factors that may motivate agency mechanism choice than we have seen in previous analysis.

Finding 4. ***Interaction Between the Mechanism Used and the Governing Statute.*** This finding breaks down EPA's use of different legal mechanisms to advance Next Gen tools and objectives by using a statutory lens. Our finding here is that an interaction exists between the mechanism used and the governing statute.[56] In other words, EPA used the available legal mechanisms to advance Next Gen tools differently under the three regulatory statutes that provide the legal landscape for Next Gen's development and implementation, the CAA, CWA, and RCRA. When EPA included a Next Gen tool under the CAA, it was very likely to use an enforcement settlement to do so (nearly 73% of the instruments under the CAA were settlements). It was much less likely to use a regulation (only 22.9% of the CAA mechanisms), or a permit (only 4.2% of the instruments used).[57] EPA used permits and rules more, and settlements less, under the CWA in comparison to its use of these mechanisms under the CAA. Approximately 56% of the instruments under the CWA were settlements, 31% were permits (31.3%), and only 12.5% were rules.[58] EPA's use of mechanisms under RCRA follows a pattern that is different in statistically significant ways from its approach under the CAA or CWA. Under RCRA, settlements were (again) used the most (66.7%), followed by rules (33.3%). No permits were employed under RCRA (0%) to advance the use of Next Gen tools.[59] Thus, while

[55] Though we focus here on the relationship between tool selection and mechanism choice, we do not mean to exclude the possibility that our other variables (e.g., different preferences by different regulated parties, the involvement of DOJ, differences in statutory authority, or intra-mechanism features) may have influenced the connection between mechanisms used and tools employed that Finding 3 reflects. Thus, we have been conservative in completing the charts in this Article in positing that particular factors have influenced EPA's mechanism choices.

[56] Chi-square (4, N = 111) = 20.09, $p < .001$. (Fisher's Exact Test = 17.20, $p = .001$). A chi-square analysis determines whether two or more proportions are statistically different from one another. When the proportions involve small sample sizes, the "Fisher's Exact Test" statistic is used instead. *See, e.g.*, R. A. Fisher, *On the Interpretation of χ2 from Contingency Tables, and the Calculation of P*, 85 J. OF THE ROYAL STATISTICAL SOC'Y 87 (1922). We excluded from the analysis 19 "hybrid" Next Gen cases that could not be classified as ones that were brought solely under the CAA, the CWA, or RCRA. We therefore evaluated 111 cases in this analysis.

[57] Settlements were more likely to be used under the CAA than were regulations (confidence interval: 0.33, 0.67) and permits (confidence interval: 0.55, 0.83). Regulations were used under the CAA more often than were permits (confidence interval: 0.06, 0.32). We again caution readers in interpreting the absolute percentages reported on account of the smaller sample size for permits. In smaller sample sizes, a one-unit increase or decrease in the number of permits will yield a more dramatic increase or decrease in the absolute percentages of permits compared to settlements, for example; nonetheless, the statistical tests we employed account for sample size, and the difference in proportions across legal mechanisms was statistically significant.

[58] Settlements were more likely to be used under the CWA than were permits (confidence interval: 0.06, 0.44) and regulations (0.27, 0.61). Permits were more likely to be used under the CWA than were regulations (confidence interval: 0.03, 0.35).

[59] Settlements were more likely to be used under RCRA than were permits (confidence interval: 0.43, 0.91). Regulations were more likely to be used under RCRA than were permits (confidence interval: 0.09, 0.57). There was no statistical difference, however, between the likelihood of the use of settlements and regulations under RCRA (confidence interval: -0.01, 0.67).

EPA used settlements most frequently under all three statutes, the percentage use of settlements was lower under the CWA than under the other two statutes. In addition, EPA used rules less frequently under the CWA than under the other two laws, and EPA's use of permits differed dramatically, comprising nearly a third of the uses of Next Gen tools under the CWA but not at all under RCRA. Figure 3 and Table 3 reflect these differences. The differences in how EPA used each mechanism under the different statutes to advance Next Gen tools are statistically significant.[60]

Figure 3
Next Gen Mechanism % by Governing Statute

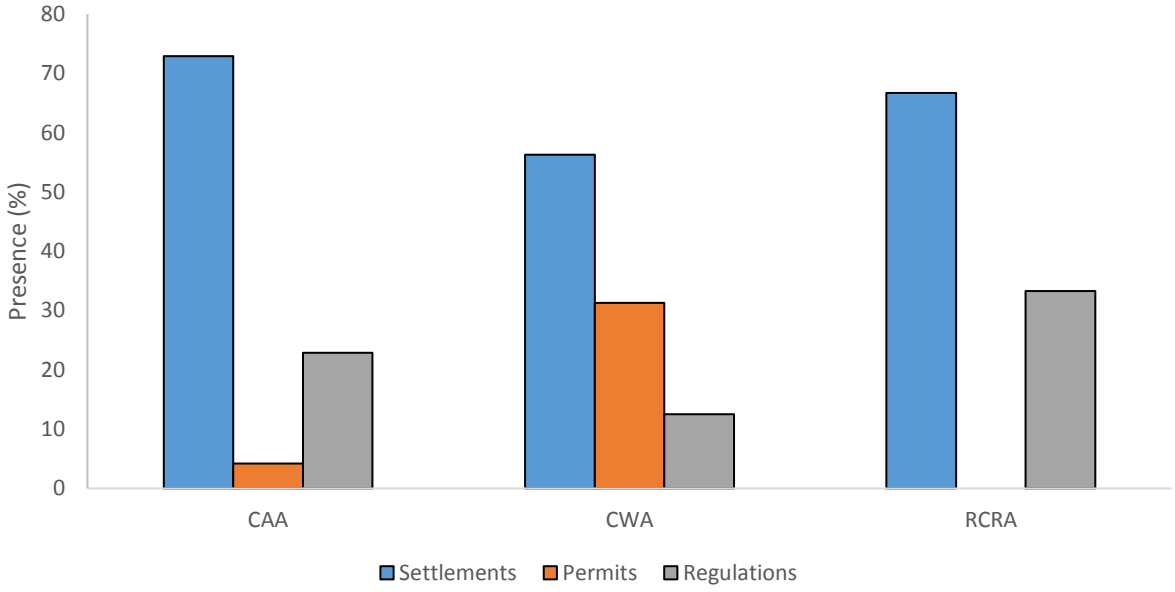


Table 2
Next Gen Mechanism % by Governing Statute

	Settlements	Permits	Regulations
CAA	72.9	4.2	22.9
CWA	56.3	31.3	12.5
RCRA	66.7	0.0	33.3

We also considered a more fine-grained question: whether EPA used each of its mechanisms to advance *particular Next Gen tools* differently under the statutes and found

[60] *See infra* notes 103-04 and accompanying text (describing differences in the distribution of EPA administrative versus judicial settlements under the different statutes (the CAA and RCRA are about 50-50 administrative versus judicial, while the CWA is only 4% administrative, with the remaining 96% of the settlements being judicial).

significant differences.[61] In other words, we know that EPA uses mostly settlements to advance Next Gen under the CAA. But in those settlements, is EPA more likely to rely on advanced monitoring than it is, for example, under the CWA?

For enforcement settlements, EPA is somewhat more likely to incorporate advanced monitoring features into settlements under the CAA than is the case for settlements under the CWA and RCRA.[62] In contrast, EPA is less likely to incorporate the Next Gen tool of e-reporting into CAA settlements than is the case for RCRA settlements.[63] For rulemaking, the only difference in tool usage by statute is the compliance built-in feature,[64] which is less likely to be used under the CWA than under the CAA and RCRA.[65] We found no general interactive effect of statute and tool usage with respect to permits.[66] The post-hoc analysis confirmed no meaningful differences in tool usage based on statute for permits.[67] While EPA's use of tools varies substantially by statute, the small sample size does not allow for any conclusions concerning the significance of such differences. We expect that additional sample data would produce significant findings that EPA's use of particular tools varies by statute.

Figure 4
Next Gen Tool Usage by Statute (Settlements)

[61] Wald (22, N = 555) = 1774.18, p < .001 (significant three-way interaction among relevant statute, legal mechanism, and Next Gen tool). We examined this interaction by examining the pattern of Next Gen tool usage under the different statutes first with respect to enforcement settlements, then regulations, and then permits.
[62] Wald (6, N = 360) = 318.32, p < .001 (simple interaction of statute and Next Gen tool); Wald (1, N = 72) = 7.00, p = .03 (simple effect of Next Gen tool); Wald (1, N = 72) = 6.73, p = .009 (planned comparison of advanced monitoring usage under the CAA and CWA).
[63] Wald (1, N = 72) = 2.98, p = .089 (planned comparison of transparency usage under the CAA and RCRA). We also note that the EPA used the compliance built-in tool under only the CAA.
[64] Wald (1, N = 22) = 4.67, p = .097 (simple effect of Next Gen tool).
[65] For example, B = 1.57, SE = 0.73, Wald (1, N = 22) = 3.00, p = .031 (planned comparison of compliance built-in under the CAA and the CWA with respect to rulemaking). We note that the EPA used the advanced monitoring tool only under the CAA (and not under CWA or RCRA) with respect to rulemaking.
[66] Because of the small size of our database, we were unable to compute any other calculations with respect to our data on permits.
[67] Although not a statistically significant finding in this sample of Next Gen permits, it is worth noting that e-reporting was required in roughly 30% of permits under the CWA; it was not required under any permits under the CAA or RCRA.

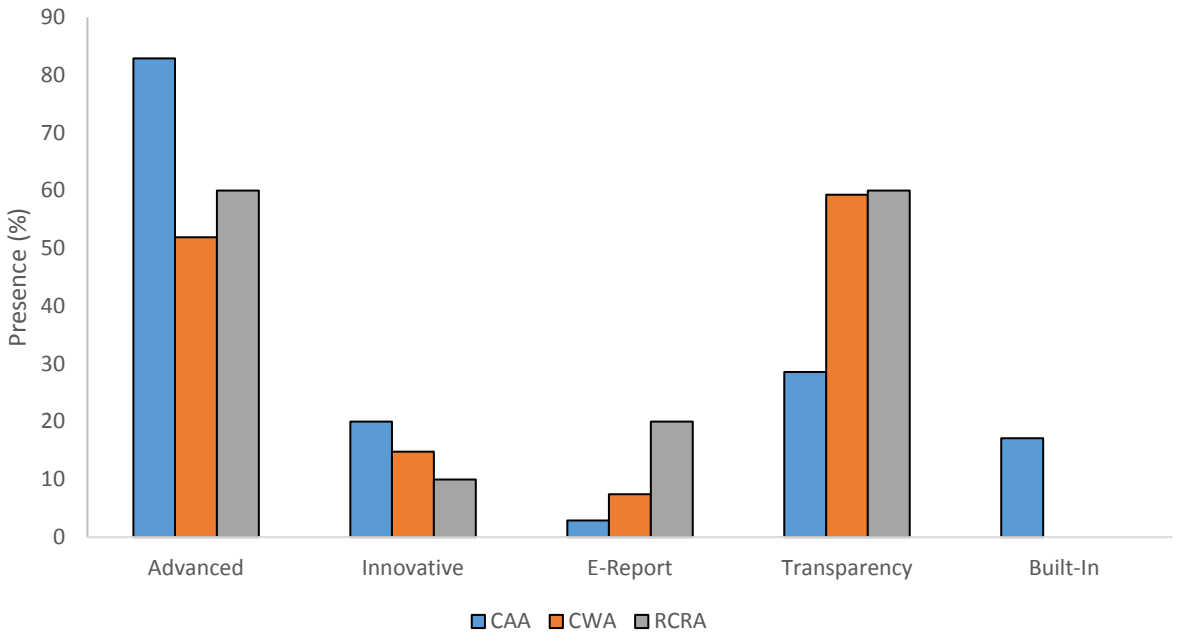


Table 3
Next Gen Tool Usage by Statute (Settlements)

	Advanced	Innovative	E-Report	Transparency	Built-In
CAA	82.9	20.0	2.9	28.6	17.1
CWA	51.9	14.8	7.4	59.3	0.0
RCRA	60.0	10.0	20.0	60.0	0.0

Figure 5
Next Gen Tool Usage by Statute (Rulemaking)

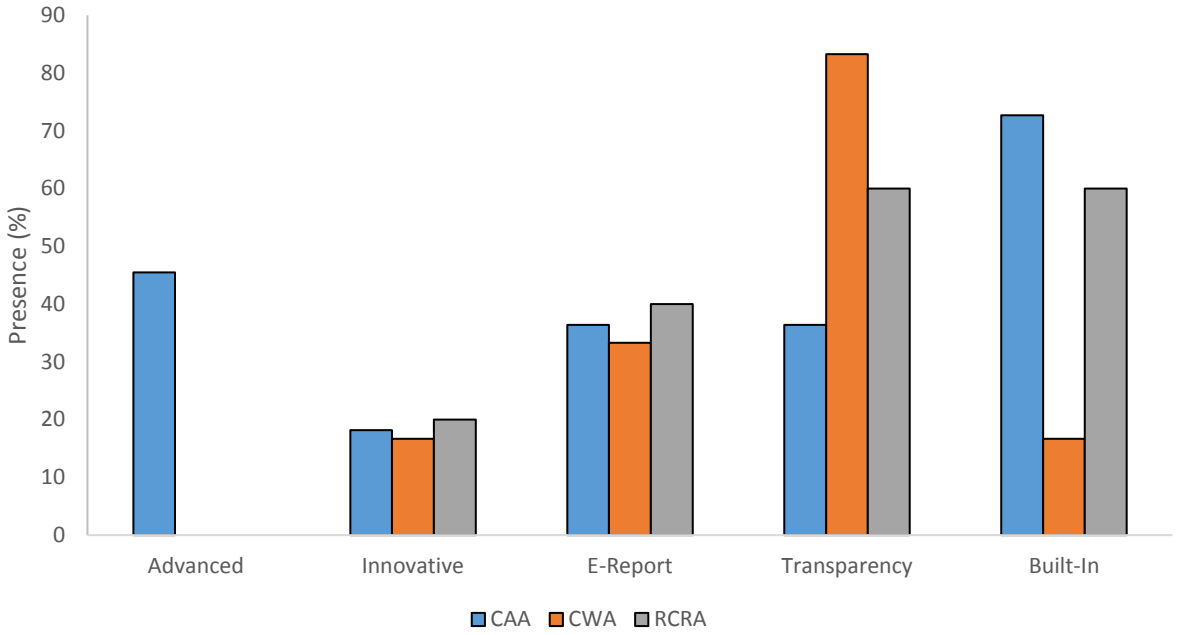


Table 4
Next Gen Tool Usage by Statute (Rulemaking)

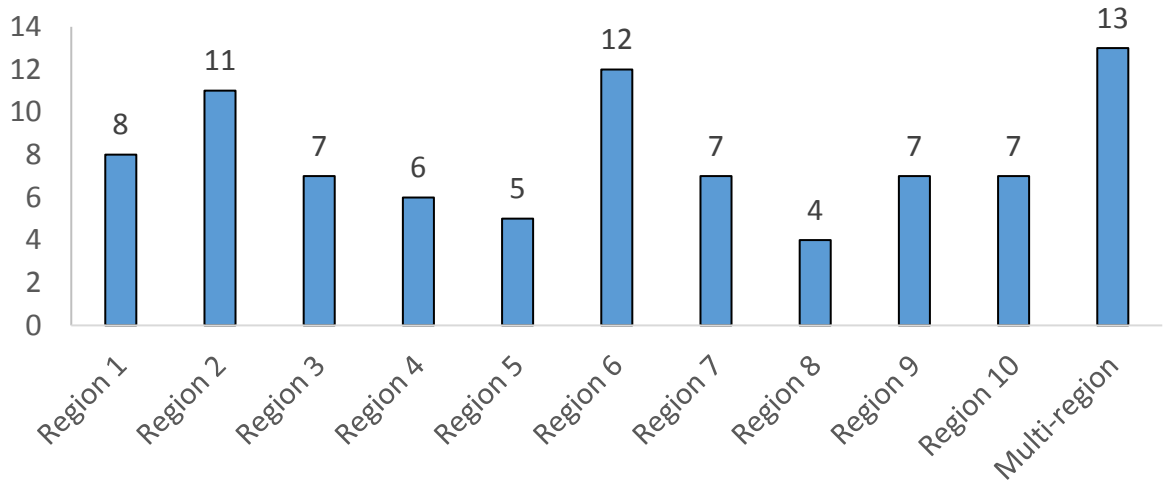
	Advanced	Innovative	E-Report	Transparency	Built-In
CAA	45.5	22.7	36.4	36.4	72.7
CWA	0.0	18.3	33.3	83.3	16.7
RCRA	0.0	16.7	40.0	60.0	60.0

Finding 5. ***The Degree of Consistency Among EPA's Regions*****.** To test possible variation among EPA's ten Regions in the use of legal mechanisms, we coded for particular Regional involvement in individual settlements and permits.[68] As Figure 6 shows, EPA Regions' use of enforcement settlements to advance Next Gen tools has varied, with Regions 2 and 6 having completed more settlements that include Next Gen tools than the others.[69] Headquarters involvement in such settlements has been relatively significant as well.

Figure 6
Next Gen Enforcement Settlements by Region (Through January 31, 2017)

[68] We coded for possible regional variations in implementation of Next Gen because the literature suggests strongly that such variations might be expected. *See infra* Part III.

[69] Because of the limited extent of regional participation in Next Gen, we have not burrowed more deeply into the numbers to explore the possible significance of the differences that exist. Information about regional consistency (or lack thereof) in terms of the questions we ask above (statutes involved, tools involved) and below (type of regulated party involved, inclusion of a SEP project) would be worth exploring as Regions do more. Similarly, it would be worthwhile to contextualize the information by situating it in terms of regional enforcement and permitting activity more generally.



A significant difference also exists in regional use of permitting to advance Next Gen tools. Only a few EPA regions have included Next Gen tools in permits (EPA Regions 1, 6, and 10), as Table 5 shows. Thus, based on information supplied by EPA, its efforts to use permitting to implement Next Gen appears to vary significantly among EPA Regions.[70]

Table 5
Regional Use of Next Gen Tools in Settlements and Permits

	Settlement	Permit
Region 1	8	4
Region 2	11	0
Region 3	7	0
Region 4	6	0
Region 5	5	0
Region 6	12	2
Region 7	7	0
Region 8	4	0
Region 9	7	0
Region 10	7	3
Multi-Region	13	3
Total	87	12[71]

[70] *See infra* note 147 and accompanying text (noting disparities in Regional performance in many areas). Multi-regional settlements are national cases that involve a company with facilities in more than one EPA region. These are often, but not always, handled out of EPA Headquarters. *See* email correspondence between Cynthia Giles and Dave Markell, Jan. 25, 2019 (on file with authors).

[71] Five permits were issued by states rather than the EPA, which reduces the total Next Gen permits in this analysis from 17 to 12. The analyses that follow include all 87 settlements and 12 permits, for a sample of 99 cases. The analysis collapses across settlements and permits. It therefore analyzes them together.

We further evaluated regional variation to assess whether the regions that are using enforcement and/or permitting to advance Next Gen are doing so in similar ways. We found a significant interactive effect between region and likelihood of specific tool usage.[72] For example, we found differences between regions in their use of advanced monitoring and e-reporting.[73] Our statistical power was too weak to further unpack these differences, but we provide an illustrative graph (Figure 7) and chart (Table 6) below.[74] Again, even these limited results support our hypothesis that factors beyond the traditional explanations for mechanism choice may well contribute to inter-regional differences in the use of different tools.

Figure 7
Regional Differences in the Use of Next Gen Tools

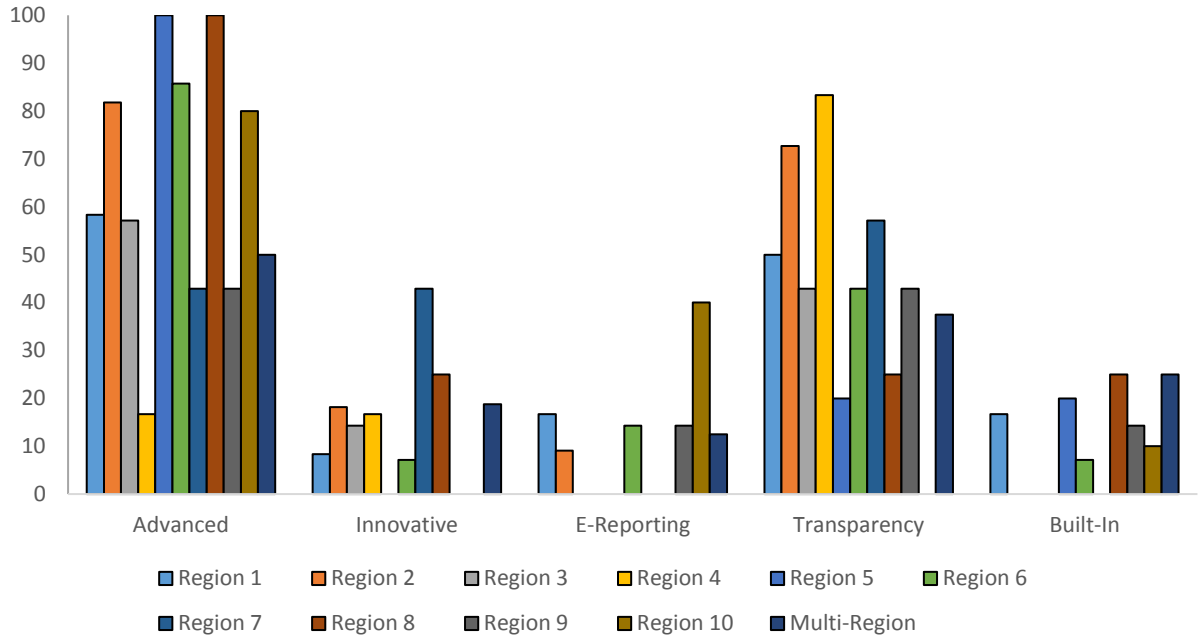


Table 6
Regional Differences in the Use of Next Gen Tools (Settlements and Permits)[75]

[72] Wald (25, N = 495) = 361.92, p < .001 (interaction effect between mechanism choice and Next Gen tool).
[73] Wald (1, N = 99) = 2431.38, p < .001(simple effect of region on the advanced monitoring tool); Wald (1, 99) = 1393.07, p < .001 (simple effect of region on the e-reporting tool).
[74] Region 10 might be more likely to use advanced monitoring and e-reporting compared to the other Regions. It is also worth noting that no innovative enforcement mechanisms exist in our database of Next Gen permits, and all compliance built-in mechanisms occurred for permits with EPA Headquarters involvement. Further, the percentages in the graph and table that follows do not always add up to 100 percent because state instruments have been omitted.
[75] The figures in this table represent the percentage of Next Gen items in each region that included the specific Next Gen tool. For example, 58.3% of all Next Gen items in Region 1 included the advanced monitoring tool.

	Advanced	Innovative	E-Report	Transparency	Built-In
Region 1	58.3	08.3	16.7	50.0	16.7
Region 2	81.8	18.2	09.1	72.7	00.0
Region 3	57.1	14.3	00.0	42.9	00.0
Region 4	16.7	16.7	00.0	83.3	00.0
Region 5	100.0	00.0	00.0	20.0	20.0
Region 6	85.7	07.1	14.3	42.9	07.1
Region 7	42.9	42.9	00.0	57.1	00.0
Region 8	100.0	25.0	00.0	25.0	25.0
Region 9	42.9	00.0	14.3	42.9	14.3
Region 10	80.0	00.0	40.0	00.0	10.0
Multi-Reg.	50.0	18.8	12.5	37.5	25.0
Average[76]	64.7	13.1	12.1	39.4	11.1

We coded for possible regional variations in implementation of Next Gen because the literature suggests strongly that such variations might be expected. For example, a 2006 U.S. Government Accountability Office (GAO) study concluded that "EPA regions vary substantially in the actions they take to enforce environmental requirements."[77] The GAO identified three factors that are likely contributors to these regional variations: (1) philosophical differences among regional enforcement staff and between headquarters and regional staff, (2) incomplete and unreliable enforcement data, and (3) staffing planning and allocation issues.[78] Another explanation for headquarters-regional dissonance, offered by Joel Mintz, is that EPA Headquarters has failed to clarify its expectations for the Regions or to provide coherent guidance.[79] Mintz concluded that, in at least some instances, regional enforcement officials ignored or failed to follow Headquarters guidance[80] One of us has similarly concluded that

[76] These averages are weighted according to the sample size for each region.
[77] U.S., Gov't Accountability Off., *Environmental Compliance and Enforcement: EPA's Efforts to Improve and Make More Consistent Its Compliance and Enforcement Activities*, GAO-06-840T, at I (2006), http://www.gao.gov/assets/120/114303.pdf [hereinafter GAO-06-840T]; *see also The State of Environmental Law Enforcement: A Speech Presented at the American Bar Association's 1998 Annual Meeting*, 28 ENVTL. L. REP. 10711, 10712 (noting that "there is some difference in [enforcement] emphasis between different EPA Regions").
[78] GAO-06-840T, *supra* note 77, at i; *cf. id.* at 7 (noting that "the considerable autonomy built into EPA's decentralized, multilevel organizational structure allows regional offices considerable latitude in adapting headquarters' direction in a way they believe best suits their jurisdiction."). Other GAO reports have reached similar conclusions. *See, e.g.*, U.S. Gov't Accountability Office, *Major Management Challenges*, GAO-11-422T, at 3 (2011), http://www.gao.gov/assets/130/125556.pdf (characterizing the performance of EPA's regional offices in carrying out their state oversight responsibilities as "generally proven to be inconsistent over the years").
[79] JOEL A. MINTZ, ENFORCEMENT AT THE EPA 105-10 (1995) [hereinafter MINTZ 1995]; *id.*at 116 (discussing the need for more direct regional accountability on enforcement matters and differences in the degree of accountability between Regions).
[80] *Id.* at 75-76; *cf.* Alfred R. Light, *Deja Vu All over Again? A Memoir of Superfund Past*, 10-Fall NAT. RESOURCES & ENV'T 29, 33 (1995) ("Though EPA has published policy guidance [under CERCLA] for its regions for many of these settlement tools, many are rarely used,").

"there appears to be fairly widespread disregard by EPA Regions . . . of EPA [headquarters'] enforcement policies,"[81] probably due in part to the non-binding nature of the relevant guidance and policies.[82] These challenges[83] have periodically led to calls for less regional flexibility and more prescriptive direction from Headquarters.[84]

Finding 6. ***The Role of Regulated Parties in Mechanism Choice.*** A sixth set of findings relates to a different set of critical actors: regulated parties.[85] We coded the enforcement settlements to evaluate whether EPA's use of its legal mechanisms varies depending on the identity of the settling party (industrial vs. municipal party), and did the same with respect to the identity of the permittee in the permits that include Next Gen tools. Information about the identity of the regulated party is readily accessible in the EPA Next Gen compilations. As a result, it was feasible to undertake this effort to bring a nuanced lens to EPA mechanism choice and use through this binary unpacking of the regulated community.

Figure 8 shows that the identity of the regulated party is associated with the use of enforcement and permitting in different ways. For the period we studied, EPA used its mechanisms differently depending on whether the regulated party was an industrial party or a municipality.[86] In particular, Next Gen settlements were significantly more likely to contain an industrial defendant than a municipal defendant.[87] The opposite was true with respect to Next Gen permits, although the difference did not rise to statistical significance.[88]

Figure 8
Use of Next Gen Mechanisms as a Function of the Defendant's Identity

[81] David L. Markell, *The Role of Deterrence-Based Enforcement in a 'Reinvented' State/Federal Relationship: The Divide between Theory and Reality*, 24 HARV. ENVTL. L. REV.1, 7, 54 n. 223 (2000).
[82] *See* Ellen R. Zahren, Comment, *Overfiling Under Federalism: Federal Nipping at State Heels to Protect the Environment*, 49 EMORY L.J. 373, 383 (2000) (referring to guidance to regional administrators and states).
[83] For general discussion of the "promise and limitations of regional administrative governance" and a plea for more research on federal decentralization and regional governance, see Dave Owen, *Regional Administration*, 63 UCLA L. REV. 58 (2016).
[84] *See, e.g.*, U.S. Gov't Accountability Office, *More Consistency Needed Among EPA Regions in Approach To Enforcement*, RCED-00-108, at 11-12 (2000), www.gao.gov/new.items/rc00108.pdf (concluding that guidance on key elements of audit protocols would "engender a higher level of consistency among all [ten] regional offices").
[85] *See infra* Part III (discussing why, based on past analysis, we believed there might be differences in mechanism choice based on the identity of the regulated party).
[86] Wald (1, N = 104) = 6.98, p = .008 (interaction between mechanism choice and the defendant's identity). We examined this interaction by looking at the effect of the defendant's identity in settlements and in permits separately.
[87] Chi-square (1, N = 87) = 14.08, p < .001.
[88] Chi-square (1, N = 17) = 1.47, p = .225.

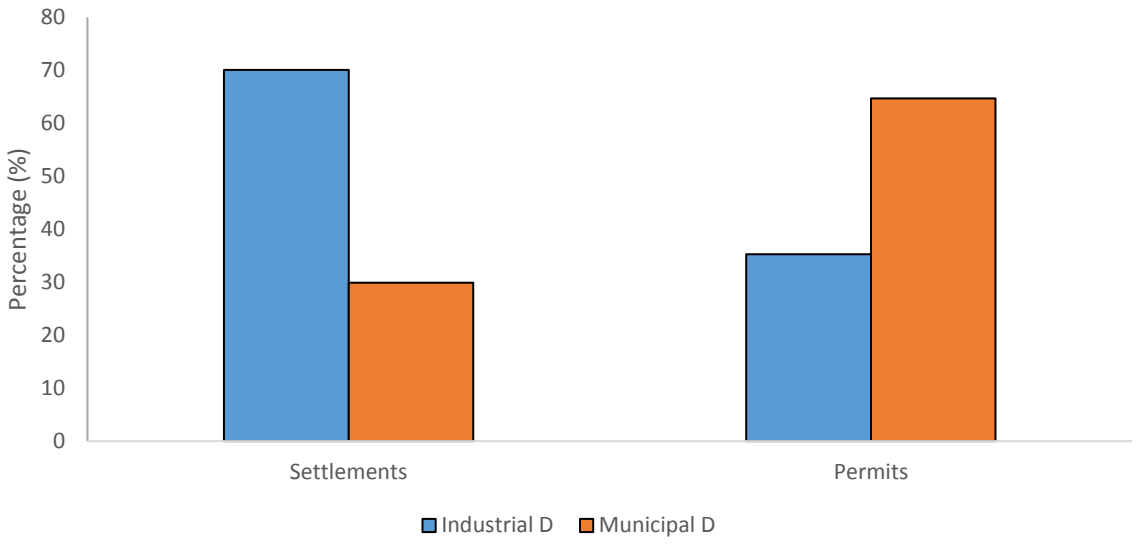


Table 7
Use of Next Gen Mechanisms as a Function of the Defendant's Identity

	Industrial Defendant	Municipal Defendant
Settlements	70.1	29.9
Permits	35.3	64.7

Moreover, the defendant's identity affected the specific tools that EPA used to enforce Next Gen, and it did so differently depending on whether EPA used its enforcement mechanism or its permitting mechanism.[89] For example, settlements with municipalities include transparency more than any other tool,[90] while permits with municipalities include advanced monitoring more than any other tool.[91] Settlements with industrial parties include advanced monitoring more than any other tool,[92] while permits with industrial parties included transparency more than any other tool in our sample, although this did not reach statistical significance.[93]

Figure 9
Likelihood of Tool Usage by Type of Defendant (Settlements and Permits)

[89] Wald (9, N = 520) = 286.77, p < .001 (interaction among the defendant's identity, mechanism choice, and Next Gen tool).
[90] Wald (3, N = 130) = 326.87, p < .001 (main effect of tool usage).
[91] Wald (2, N = 55) = 180.10, p < .001 (main effect of tool usage).
[92] Wald (4, N = 305) = 54.74, p < .001 (main effect of tool usage).
[93] Wald (3, N = 30) = 1.08, p = .781.

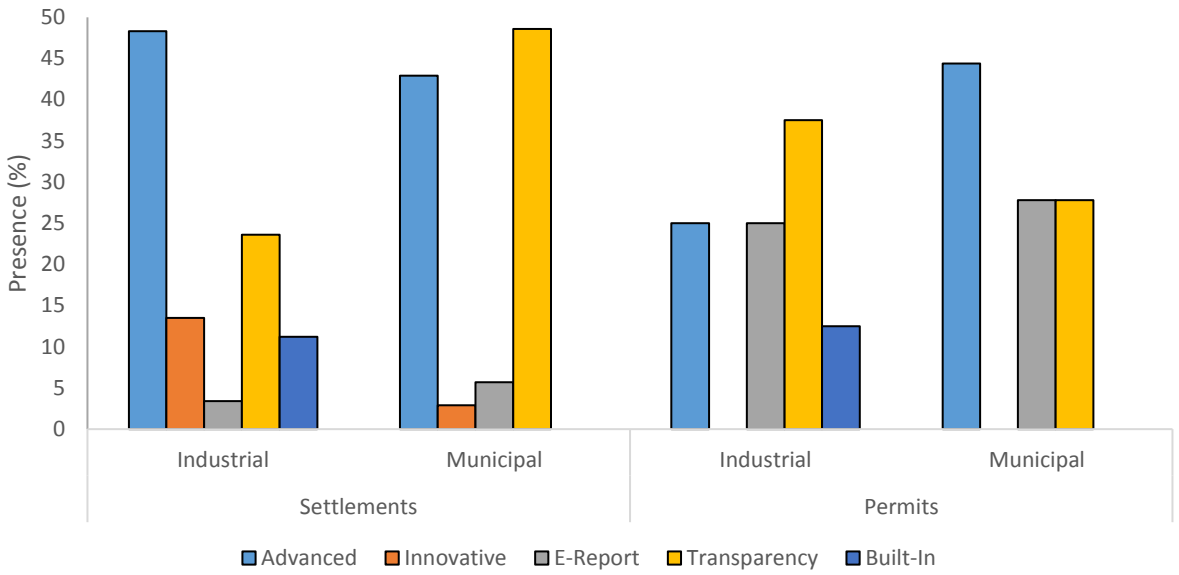


Table 8
Likelihood of Tool Usage by Type of Defendant (Settlements and Permits)

	Advanced	Innovative	E-Report	Transparency	Built-In
Settlements					
Industrial	48.3	13.5	3.4	23.6	11.2
Municipal	42.9	2.9	5.7	48.6	0.0
Permits					
Industrial	25.0	0.0	25.0	37.5	12.5
Municipal	44.4	0.0	27.8	27.8	0.0

We investigated possible differences in use of mechanisms to advance Next Gen objectives based on the identity of the affected regulated part(ies) because a literature exists that suggests that, in at least some circumstances, EPA has, on occasion, treated municipal and industrial parties differently.[94] For example, one scholar reported that, during the 1990s, EPA had a "prosecutorial habit of naming private, but not municipal," entities as potentially

[94] *See, e.g.*, U.S. Envtl. Prot. Agency, Office of Enforcement & Compliance Monitoring, *Guidance on Bringing Enforcement Actions Against POTWs for Failure to Implement Pretreatment Programs* (Aug. 4, 1988), https://www3.epa.gov/npdes/pubs/owm0189.pdf (stating that EPA placed a high priority on assuring local pretreatment program implementation through enforcement against municipalities); Clifford Rechtschaffen, *Deterrence v. Cooperation and the Evolving Theory of Environmental* Enforcement, 71 S. CAL. L. REV. 1181, 1227, 1231 (1998) (finding that the great majority of municipal facilities violated the CWA without targeted enforcement); ROBERT V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION: LAW, SCIENCE & POLICY 932 (2d ed. 1996) (noting that EPA officials acknowledge they virtually never obtain economic benefits when they file enforcement actions against municipal sewage treatment facilities)

responsible parties in CERCLA enforcement actions.[95] During that time, this "habit" "shift[ed] billions of dollars of cleanup responsibilities . . . [from] municipalities and impos[ed] their cleanup share on private parties."[96] Similarly, in describing a major municipal compliance initiative aimed at assisting municipalities with meeting CWA treatment requirements, EPA noted that it would prioritize enforcement actions against industrial violators.[97]

While the qualifications we discuss in Part III highlight the importance of more thorough work to understand why EPA has used its mechanisms differently with respect to industrial and municipal regulated parties, our findings suggest that the identity of the regulated party may influence how EPA chooses and uses available legal mechanisms.

Our final two sets of findings (Findings 7 and 8) explore two issues that are unique to use of the enforcement mechanism. We call these intra-mechanism nuances. Finding 7 explores EPA's use of administrative versus judicial enforcement. Finding 8 considers EPA's inclusion in an enforcement settlement of a Supplemental Environmental Project (SEP) and the impacts on mechanism choice and use.

Finding 7. ***Intra-Mechanism Nuance # 1: Administrative vs. Judicial Enforcement Settlements***. EPA has a choice of pursuing alleged violators on its own through administrative enforcement or by collaborating with DOJ to pursue judicial enforcement.[98] We investigated EPA's use of each of these types of enforcement mechanisms and have three findings to report.

a. *Intra-Mechanism Nuance # 1: The Impact of Administrative vs. Judicial Enforcement Settlements on Mechanism Choice.*

Of the 87 settlements we identified that include at least one Next Gen tool, EPA negotiated 31 on its own administratively (35.6%). For the remaining 56 (64.3%), the agency worked with DOJ to negotiate a settlement. This breakdown of administrative vs. judicial settlements that include Next Gen tools is very different from the overall distribution of EPA

[95] Steven Ferrey, *The Toxic Time Bomb: Municipal Liability for the Cleanup of Hazardous Waste*, 57 GEO. WASH. L. REV. 197, 252-253 (1988).

[96] *Id*. at 274. Ferrey attributed EPA's likely rationale for differential treatment of industrial and municipal liable parties to concern that municipal liability would "translate directly into higher property tax levies. As a result, current property taxpayers would indemnify PRP municipalities for past [environmental violations], raising intergenerational equity issues. In some situations, this burden on the municipal fisc would spill over into requests for state assistance." *Id.*

[97] U.S. Envtl. Prot. Agency, *National Municipal Policy and Strategy for Construction Grants, NPDES Permits, and Enforcement Under the Clean Water Act*, at 5 (1979), https://nepis.epa.gov/Exe/ZyPDF.cgi/P1005D0R.PDF?Dockey=P1005D0R.pdf; U.S. Envtl. Prot. Agency, *Policy Guidance for FY 1980/1981*, at 35 (1979), https://nepis.epa.gov/Exe/ZyPDF.cgi/2000RWOH.PDF?Dockey=2000RWOH.pdf.

[98] *See, e.g.*, Michael Herz & Neal Devins, *The Consequences of DOJ Control of Litigation on Agencies' Programs,* 52 ADMIN. L. REV. 1345, 1367-68 (2000) ("The EPA thus has two quite independent enforcement regimes operating simultaneously."). Sanctions vary as well. *Compare* 33 U.S.C.§ 1319(g)(6) (2012) (administrative penalties) *with id*. 1319(d) (civil judicial penalties). EPA has multiple options administratively that run from the relatively informal, such as warning letters, to issuance of formal complaints seeking penalties and injunctive relief. *See, e.g.*, *id*. § 1319(g). The contrast we consider in our case study is between administrative adjudication and civil judicial adjudication.

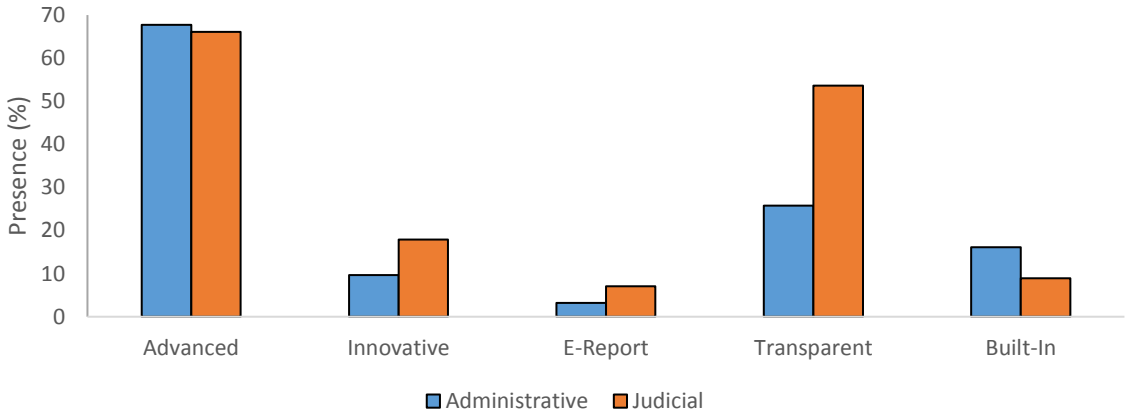
[98] *See e.g.*, 33 U.S.C. § 1319(d) (2011)

settlements. Over the same time period (January 1, 2014 - January 31, 2017), EPA settled the vast majority of enforcement cases administratively—7,433 administrative settlements vs. 421 judicial settlements.[99] Thus, including a Next Gen tool in a settlement was associated with what we term intra-mechanism choice – EPA's use of administrative or judicial enforcement to resolve alleged violations.

b. Intra-Mechanism Nuance # 1: The Impact of Administrative vs. Judicial Enforcement Settlements on Tool Usage.

We assessed whether EPA's use of an administrative or a judicial settlement is associated with Next Gen tool use and detected a non-significant overall effect.[100] Nonetheless, planned comparison testing revealed a statistically significant difference in the likelihood of the use of the transparency tool; specifically, it was much more likely to be included in settlements when the agency worked with DOJ than when EPA negotiated the settlement on its own.[101] A similar difference was trending with respect to innovative enforcement, although it was not statistically significant.

Figure 10
Next Gen Tool Usage as a Function of the Type of Proceeding[102]



[99] https://echo.epa.gov/facilities/enforcement-case-search/. We ran the following search to determine the total number of administrative and judicial settlements during January 1, 2014-January 31, 2017. Case Type: Civil; Case Category: Any; Case Lead: Federal EPA; Date Range: 1/1/2014-1/31/2017 (final order issued). The Next Gen cases add up to 57 because 30 cases were removed from pre-2014 so the time frame would be comparable to the total number of EPA cases. https://echo.epa.gov/facilities/enforcement-case-search/. Of these 57, 22 cases were administrative and 35 were judicial. *Cf.* Joseph J. Lisa, *EPA Administrative Enforcement Actions: An Introduction to the Consolidates Rules of Practice*, 24 TEMPLE JOURNAL OF SCI. TECH. & ENVTL. LAW 1, 2 (2005) (noting that EPA is "substantially more likely to address violations . . . through an administrative proceeding than a civil action or criminal prosecution in federal court").

[100] Wald (4, N = 435) = 5.34, p = .255.

[101] B = 0.74, SE = 0.30, Wald (1, N = 87) = 6.26, p = .012.

[102] In the Table accompanying this Figure (and in all tables in this Article), values with different superscripts are significantly different from one another at the $p < .05$ level.

Table 9
Next Gen Tool Usage as a Function of the Type of Proceeding

	Administrative	Judicial
Advanced Monitoring	67.7[a]	66.1[a]
Innovative Enforcement	9.7[b]	17.9[b]
E-Reporting	3.2[b]	7.1[b]
Transparency	25.8[b]	53.6[ac]
Compliance Built-In	16.1[b]	8.9[b]

c. *Intra-Mechanism Nuance # 1: The Impact of Administrative vs. Judicial Enforcement Settlements under Different Statutes*

We found that EPA's use of its administrative and judicial enforcement authorities varies significantly by statute.[103] Specifically, while nearly all settlements under the CWA that include one or more Next Gen tools occurred with judicial enforcement, settlements under the CAA and RCRA were equally likely to be administrative or judicial enforcement.[104]

Figure 11
Type of Next Gen Proceeding as a Function of Statute

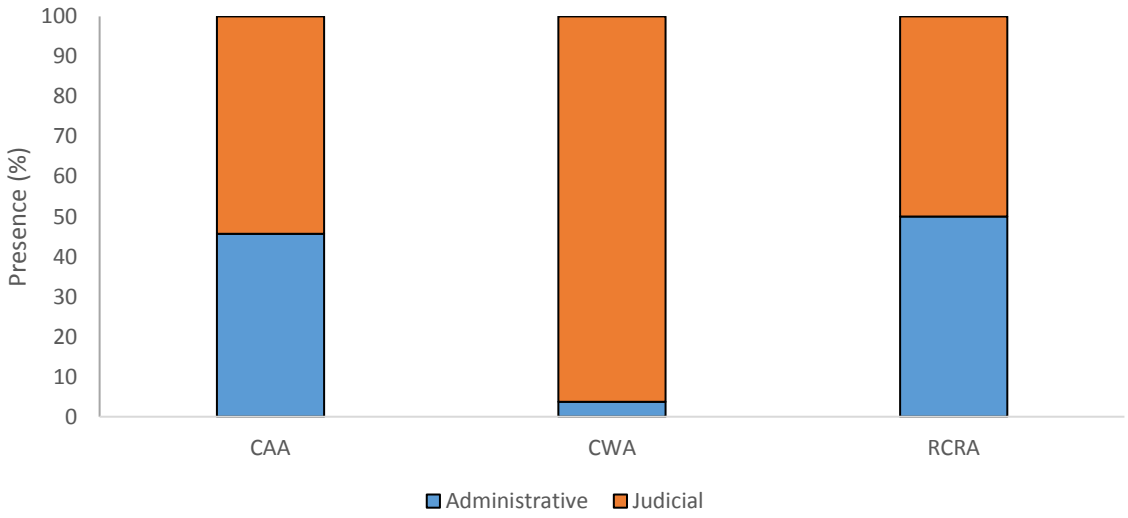


Table 10
Differences in Use of Administrative and Judicial Settlements by Statute

[103] Wald (2, N = 72) = 12.30, p = .002 (overall effect). As we noted above, we excluded from our analysis all cases where we could not classify the governing statute as exclusively either the CAA, the CWA, or RCRA.
[104] B = 1.68, SE = 0.50, Wald (1, N = 72) = 11.42, p = .001 (comparison of judicial proceedings under CAA and CWA); B = 1.79, SE = 0.60, Wald (1, N = 72) = 8.89, p = .003 (comparison of judicial proceedings under RCRA and CWA).

	Administrative	Judicial
CAA	45.7[a]	54.3[a]
CWA	3.7[b]	96.3[c]
RCRA	50.0[a]	50.0[a]

Finding 8. ***Intra-Mechanism Nuance # 2: The Impact of Supplemental Environmental Projects.*** A final issue we investigated in our review of EPA settlements that include Next Gen tools involves the impact of EPA's incorporation of a unique enforcement settlement technique known as a "supplemental environmental project." A SEP is a project that involves "beyond compliance" behavior that EPA sometimes includes in a settlement. The government cannot mandate that an alleged violator undertake a SEP project.[105] The carrot EPA offers to a settling party involves reduction in the payable penalty for the alleged infraction.[106] Differences in the use of SEPs in settlements that include one or more Next Gen tools represents a second type of intra-mechanism variation, in addition to distinctions between judicial civil and administrative enforcement.

a. *Intra-Mechanism nuance # 2 (SEPs) – Impacts on Intra-Mechanism Choice*

The SEP technique was included in 27 of the 87 settlements in our database (31%). A far greater percentage of Next Gen settlements include SEP projects than is the case for EPA's settlements overall during the same time frame.[107]

b. *Intra-Mechanism nuance # 2 (SEPs) – Impacts on Tools Usage*

We found a marginally significant effect in Next Gen tool variation as a function of the presence of a SEP.[108] This marginal effect was driven by advanced monitoring and innovative enforcement, insofar as we observed advanced monitoring more often in settlements when a SEP was present, and we observed innovative enforcement less often when a SEP was present. [109]

[105] U.S. Envtl. Prot. Agency, *Supplemental Environmental Projects (SEPs) Policy: 2015 Update* 1, https://www.epa.gov/sites/production/files/2015-04/documents/sepupdatedpolicy15.pdf ("SEPs are projects or activities that go beyond what could legally be required in order for the defendant to return to compliance.").
[106] *Id.* at 21.
[107] Our calculations indicate that SEPs were included in just 441 of the 9,493 non-Next Gen EPA case conclusions from 2013 through 2016, which is roughly 4.6%. The difference in proportions of Next Gen settlements that included a SEP (31%) and non-Next Gen settlements that included a SEP (4.6%) was statistically significant, chi-square (1, N = 9,580) = 129.20, p < .001. Our calculation deserves a word of caution, however, because EPA's archival database includes not only enforcement settlements, but enforcement "conclusions," which we believe may include completed litigation as well. We note, however, that the disparity between the proportion of Next Gen settlements that include SEPs and the proportion of non-Next Gen settlements that include SEPs is so vast, that it is highly likely that the disparity would remain statistically significant even if we could exclude completed litigation from the analysis.
[108] Wald (4, N = 435) = 8.76, p = .067 (interaction effect of the presence of SEP and Next Gen tool).
[109] For advanced monitoring, B = 0.64, SE = 0.32, Wald (1, N = 87) = 3.93, p = .048; for innovative enforcement, B = -0.95, SE = 0.49, Wald (1, N = 87) = 3.79. p = .052.

Figure 12
Presence of SEP as a Function of Next Gen Tool Usage

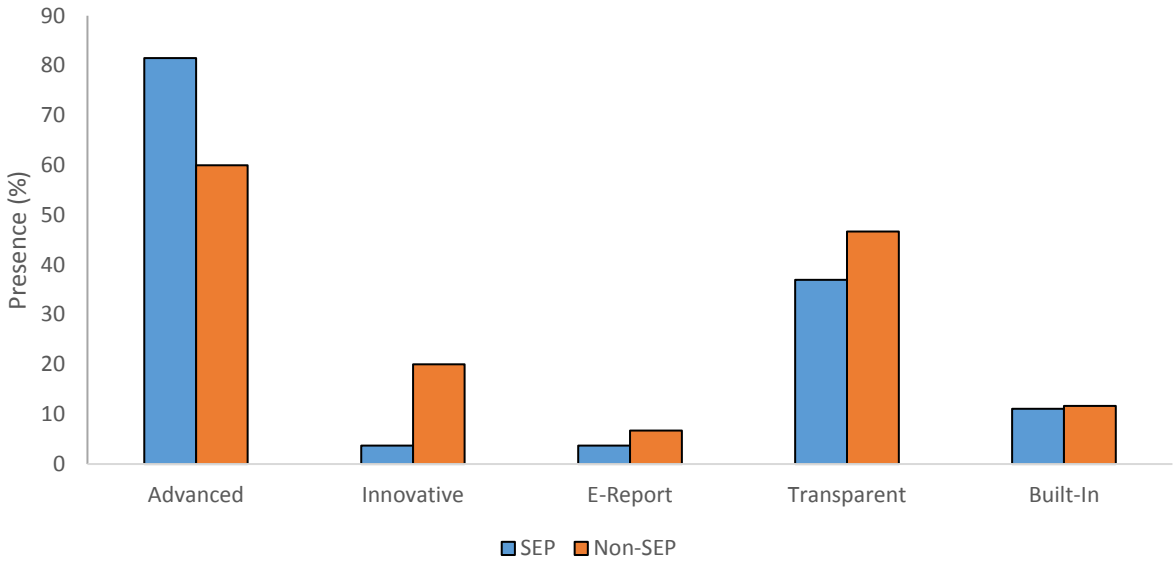


Table 11
Use of Next Gen Tools in Settlements with and without SEPs

	SEP	Non-SEP
Advanced Monitoring	81.5[a]	60.0[b]
Innovative Enforcement	3.7[d]	20.0[c]
E-Reporting	3.7[d]	6.7[d]
Transparency	37.0[bc]	46.7[b]
Compliance Built-In	11.1[d]	11.7[d]

c. *Intra-Mechanism nuance # 3 (SEPs) – Impacts Under Different Statutes*

We also found a significant effect of the relevant statute on the likelihood of the settlement including the SEP technique.[110] The overall effect was driven by a significant decrease in the likelihood of SEP usage under the CWA.[111]

Figure 13
Inclusion of SEP as a Function of Statute

[110] Wald (2, N = 87) = 6.01, p = .049 (overall effect).
[111] B = -0.89, SE = 0.39, Wald (1, N = 87) = 5.36, p = .021 (SEP usage under CWA compared with CAA); B = -.97, SE = 0.51, Wald (1, N = 87) = 3.56, p = .059 (SEP usage under CWA compared with RCRA).

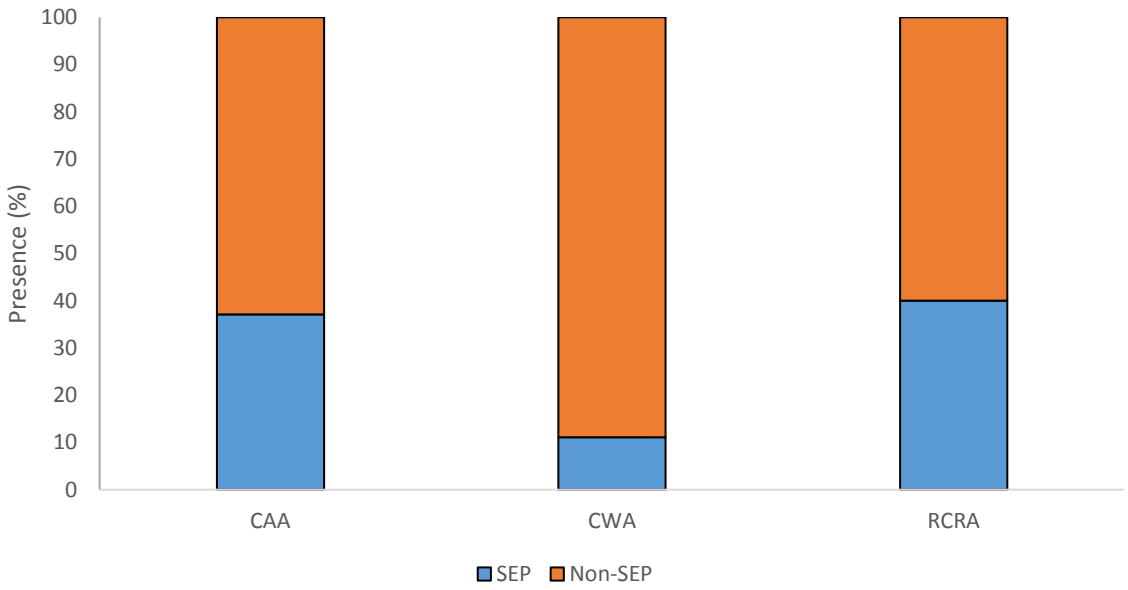


Table 12
Percentages of SEP Use by Statute

	SEP	Non-SEP
CAA	37.1[a]	62.9[ad]
CWA	11.1[b]	88.9[d]
RCRA	40.0[a]	60.0[a]

d. *Intra-Mechanism nuance # 2 (SEPs) – The Relationship to Administrative vs. Judicial Settlements*

Finally, we evaluated whether the presence or absence of the SEP feature is related to the nature of the settlement (an administrative settlement negotiated by the EPA or a judicial settlement that involved DOJ).[112] We found an effect of the mode of enforcement on the presence or absence of the SEP technique in the settlement.[113] Specifically, a SEP was significantly more likely to be present when the mode of enforcement was administrative (that is, when EPA negotiated the settlement alone) than when it was negotiated by EPA and DOJ together.

Figure14
Inclusion of SEP as a Function of the Type of Proceeding

[112] We investigated, but did not find, a statistically meaningful effect of the defendant's identity on the presence or absence of a SEP. B = -0.34, SE = 0.32, Wald (1, N = 87) = 1.11, p = .291.
[113] B = -0.61, SE = 0.29, Wald (1, N = 87) = 4.38, p = .036.

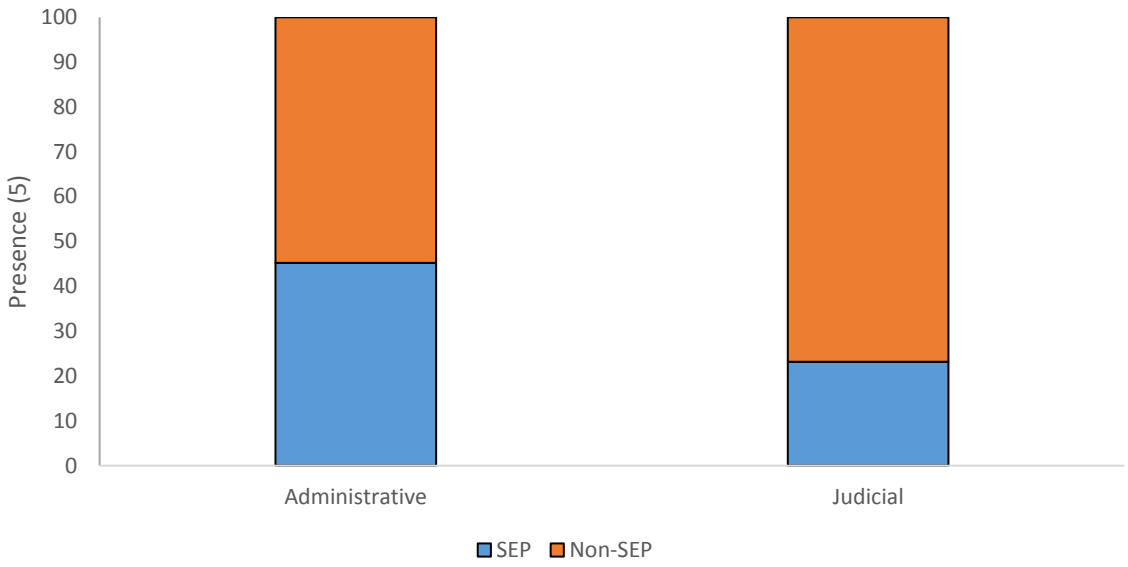


Table 13
Comparative Use of SEPS in Administrative and Judicial Settlements

	SEP	Non-SEP
Administrative	45.2[a]	54.8[a]
Judicial	23.2[b]	76.8[c]

Intra-mechanism nuances such as these have received relatively little attention in the literature on agency mechanism choice. Thus, our findings that there is a relationship between the type of enforcement mechanism EPA used and several other variables offers a significant new direction for additional research to explore the reasons for the differences we uncovered. Several implications for agency mechanism choice follow from these results. The following section explores those implications.

III. Provisional Assessments Regarding Factors that May Influence Mechanism Choice

The traditional law review literature on mechanism choice focuses considerable attention on features of the legal mechanisms themselves as factors that might lead an agency to use one mechanism versus another to advance an objective.[114] This Part explores six other factors that we believe may influence mechanism choices, using the findings in Part II to illustrate the potential importance of these factors on mechanism choice.[115] The discussion elaborates on the ways in which the factors we identify extend well beyond the traditional literature's typology of such factors and sheds light on how this kind of expanded analysis is capable of providing critical insights into how agencies do and should choose among available legal mechanisms.

[114] *See, e.g., supra* note 15 and accompanying text (discussing attributes of rulemaking and adjudication that may influence how agencies choose among those mechanisms).
[115] This list of factors is not intended to be comprehensive.

A. *The Possible Influence of Key Internal Actors*

One of our core hypotheses is that an agency's choice of legal mechanisms (e.g., rulemaking, enforcement, or permitting) to advance an objective may be driven, at least in part, by the key internal actors involved in making such choices. More specifically, we posit that the preferences and capacity of one key actor, OECA, may have influenced EPA to use one mechanism (enforcement) more than others (rulemaking and permitting) in its implementation of Next Gen. We find a strong association between OECA's key role in implementing Next Gen and that initiative's emphasis on the use of enforcement to pursue its compliance enhancement and enforcement efficacy goals.

1. The Influence of the Office of Enforcement and Compliance Assurance

OECA's central role in implementing Next Gen seems clear. OECA was the "policy entrepreneur" for the development and roll-out of Next Gen.[116] Without OECA's leadership, it is unlikely that Next Gen would have been rolled out at all; and any rollout would likely have taken a different form and approach. OECA not only conceived of and sponsored Next Gen; it also strongly advocated using enforcement to advance Next Gen strategies.[117] For example, in a 2015 memorandum in which she affirmed the prominent role she anticipated for EPA Headquarters in implementing Next Gen, OECA head Cynthia Giles indicated OECA's intent to integrate Next Gen approaches pervasively into its enforcement caseload, rather than confine them to an ancillary feature of compliance promotion efforts. She directed EPA to consider "Next Gen compliance tools" in all cases,[118] and to include them "whenever appropriate in civil judicial and administrative settlements."[119] Another example of OECA's commitment to promoting Next

[116] *See, e.g.*, U.S. EPA, Next Generation Compliance and Permitting (June 11, 2015) (on file with the authors) (noting that Next Generation Compliance is "led by [OECA]"); U.S. ENVTL. PROTECTION AGENCY, NEXT GENERATION COMPLIANCE: STRATEGIC PLAN 2014-2017, at 2 (2014), http://www2.epa.gov/sites/production/files/2014-09/documents/next-gen-compliance-strategic-plan-2014-2017.pdf [hereinafter NEXT GEN STRATEGIC PLAN] (noting that OECA has the lead for many Next Gen ideas and that it is "working across the agency to help assure coordinated implementation").

[117] EPA listed as a key element of Next Gen "[d]evelop[ing] and us[ing] innovative enforcement approaches to achieve more widespread compliance." Envtl. Prot. Agency, Office of Enforcement and Compliance Assurance, FY 2016-2017 National Program Manager Guidance 13-15 (2015), https://www.epa.gov/sites/production/files/2015-02/documents/oecas_draft_fy_2016-2017_national_program_manager_guidance_february_19_2.pdf [hereinafter 2016-2017 OECA Guidance]; *see also id.* at 7 (discussing "greater use of fenceline monitoring and publication of pollution information, . . . advanced monitoring and electronic reporting in our enforcement investigations and settlements, . . . and self and third party certification tools, to help drive better compliance").

[118] Memorandum from Cynthia Giles to Regional Counsels, etc., *Use of Next Generation Compliance Tools in Civil Enforcement Settlements* 1, 6 (Jan. 7, 2015) [hereinafter 2015 Giles Memorandum], https://www.epa.gov/sites/production/files/2015-01/documents/memo-nextgen-useinenfsettlements.pdf.

[119] 2015 Giles Memorandum, *supra* note 118, at 1. The Memorandum lists four Next Gen compliance tools in particular: advanced monitoring; independent third-party verification of a settling party's compliance with settlement obligations (a variant of "innovative enforcement," the fifth key element in Next Gen); electronic reporting; and public accountability through increased transparency of compliance data. Giles explained that these tools, which involve "use of modern information technology," would create an "effective structure for the settling party to comply with settlement requirements without increasing EPA's oversight burden." *Id. See also* Renee Schoof, *Air Toxics, Hazardous Waste Top EPA Enforcement Priorities*, 47 ENV'T REP. (BNA) S-62 (Jan. 15, 2016) (reporting Giles' statement that EPA would increase would use of advanced monitoring). Giles later issued another memorandum encouraging the use of Next Gen tools in SEPs. Memorandum from Cynthia Giles to Regional

Gen through enforcement was its development of a Strategic Plan to integrate Next Gen into the agency's compliance and enforcement program.[120] OECA afforded less emphasis to rulemaking or permitting as a Next Gen implementation mechanism.[121]

The results of our empirical evaluation of Next Gen's implementation bear out these qualitative examples of OECA's emphasis on enforcement as the principal mechanism for that initiative. Finding 1 shows that EPA used enforcement far more than rulemaking or permitting to advance Next Gen.[122] This emphasis on the enforcement mechanism may have several explanations. For example, OECA has relatively greater influence over EPA's enforcement agenda than over either rulemaking or permitting, which are conducted by other offices within EPA (or, in the case of permitting, by the states).[123] For this reason, rulemaking and enforcement pose greater coordination challenges, both horizontal and vertical, for the agency than reliance on enforcement to promote Next Gen.

EPA's institutional structure is complex, as is the case for many federal agencies. Its national Headquarters includes several offices, including the Office of the Administrator, several "program" offices that focus on specific EPA regulatory programs intended to protect different parts of the environment (*e.g.*, the Office of Air and Radiation and the Office of Water), and various cross-cutting offices, including the general Counsel's Office and OECA.[124] Responsibility for implementing regulatory initiatives is dispersed throughout EPA, with

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Administrators, *Issuance of the 2015 Update to the 1998 U.S. Environmental Protection Agency Supplemental Environmental Projects Policy* 1 (March 10, 2015), http://www2.epa.gov/sites/production/files/2015-04/documents/sepupdatedpolicy15.pdf (noting that SEPs "are an important component of EPA's enforcement program"). In 2018, however, Giles' successor withdrew the 2015 Giles Memorandum, stating that:

> there is no default expectation that "innovative enforcement" provisions will routinely be sought as injunctive relief, where such activities are not required by the applicable statute or regulation. The determination to include these particular elements of injunctive relief (as with any other element of injunctive relief) is to be based on the particular facts and needs in a case.

Susan Parker Bodine, *The Appropriate Use of Compliance Tools in Civil Enforcement Settlements* (April 3, 2018), https://www.epa.gov/sites/production/files/2018-04/documents/memoonappropriateuseofcompliancetoolsincivilenforcementsettlements.pdf.

[120] NEXT GEN STRATEGIC PLAN, *supra* note 116, at 3-7.

[121] *See also infra* notes 122, 129 and accompanying text. We do not want to overstate the point. OECA also promoted the use of these other mechanisms to advance Next Gen goals. *See, e.g.*, NEXT GEN STRATEGIC PLAN, *supra* note 116, at 3 (discussing more effective regulations and permits).

[122] *See supra* § II B.1.

[123] OECA's role is to "serve as the primary adviser to the Administrator in matters concerning enforcement, compliance assurance, and environmental-equity efforts. It also provides the direction and review of all administrative, civil and criminal enforcement, and compliance monitoring and assurance activities." U.S. Government Manual, Environmental Protection Agency, https://www.usgovernmentmanual.gov/Agency.aspx?EntityId=nd3GrN5/DeY=&ParentEId=+klubNxgV0o=&EType=jY3M4CTKVHY. OECA explains that it "goes after pollution problems . . . through vigorous civil and criminal enforcement. . . ," and that it "works with EPA regional offices, and in partnership with state and tribal governments . . . to enforce the nation's environmental laws." About the Office of Enforcement and Compliance Assurance (OECA): What We Do, https://www.epa.gov/aboutepa/about-office-enforcement-and-compliance-assurance-oeca.

[124] *See* EPA Organization Chart, https://www.epa.gov/aboutepa/epa-organization-chart. For discussion of the history of the development of EPA's structure, see Alfred A. Marcus, *EPA's Organizational Structure*, 54-Aut. L. & CONTEMP. PROBS. 5 (1991). EPA has changed its structure periodically. *See, e.g.*, David Markell, *"Slack" in the Administrative State and Its Implications for Governance: The Issue of Accountability*, 84 OR. L. REV. 1, 52 (2005). The current administration has contemplated further organizational changes. *See, e.g., OMB Reviewing Pruitt's Plan to Replace EPA Regions with State Offices*, InsideEPA.com (Dec. 15, 2017).

program offices having significant roles in the rulemaking realm in particular.[125] Responsibility for permitting often radiates to regulators entirely outside Washington, as it is split between EPA regional offices and the states.

OECA may have pushed less hard to include Next Gen approaches in rulemaking or permitting than in enforcement settlements because of its relative lack of control over the use of the former two mechanisms, whose use is determined by other environmental regulatory entities. The program offices within EPA's Headquarters, which are responsible for rule issuance, and the regional offices and states where permitting activity occurs, thus had greater capacity than OECA to influence the use of those mechanisms.

Public administration scholars have recognized that "[c]omplex innovations [such as Next Gen] require laying the social, technical, and intellectual groundwork acceptable to a wider spectrum of organizational units and members."[126] The diffusion of responsibility, and capacity, within EPA supports the suggestion of public administration scholars that successful implementation of Next Gen and similar initiatives requires significant groundwork to attract buy-in from an array of actors whose support and participation are indispensable but not guaranteed. Champions of initiatives such as Next Gen are likely to need the cooperation and support of other key headquarters actors for the use of particular mechanisms. As a result, mechanism choice and use may well depend in part on the relative buy-in, preferences, and capacity of different offices.[127] It may have been more difficult for OECA to convince those responsible for issuing rules and permits to prioritize Next Gen and incorporate its tools into their actions than to infuse its own enforcement actions with Next Gen features.

Finally, EPA's policy offices, its regional offices, and state permitting officials may have felt less ownership over Next Gen, and a lesser degree of commitment to using their authorities to promote it, than OECA. OECA would likely have garnered the lion's share of plaudits for Next Gen's success, even if the efforts of others were critical to that success. One former OECA official told us that no one in the EPA program offices opposed Next Gen, but it was a matter of

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[125] *See* Thomas O. McGarity, *The Internal Structure of EPA Rulemaking*, 54-Aut. L. & CONTEMP. PROBS. 57, 70 (1991) (stating that most EPA rules originate in the national program offices). EPA's Headquarters participates in permitting and enforcement, and the Regions participate in rulemaking, so the text oversimplifies distribution of responsibility for use of these mechanisms.

[126] Fariborz Damanpour & Marguerite Schneider, *Characteristics of Innovation and Innovation Adoption in Public Organizations: Assessing the Role of Managers*, 19 J. OF PUB. ADM'N RESEARCH & THEORY 495, 503 (2008); *see also* Sergio Fernandez & Hal G. Rainey, *Managing Successful Organizational Change in the Public Sector*, 66 PUB. ADM'N REV. 168, 170 (2006) ("Managerial leaders must build internal support for change and reduce resistance to it through widespread participation in the change process and other means."); Paul R. Verkuil, VALUING BUREAUCRACY: THE CASE FOR PROFESSIONAL GOVERNMENT 144 (2017) (noting that, as a result of intentional fragmentation and overlap of agency authority, "collaboration is often the hardest thing to achieve"); *cf.* ACUS Recommendation 2012-5 (June 15, 2012), https://www.acus.gov/sites/default/files/Final-Recommendation-2012-5-Improving-Agency-Coordination.pdf (suggesting "reforms aimed at improving coordination of regulatory policymaking").

EPA's David Hindin put it more simply: "Any time you ask people to change you're going to get some resistance to change. That's normal. We expect it." *EPA Official: 'Next Generation Improving Compliance*, 47 ENV'T REP. (BNA) 1742 (2016).

[127] *See* Jennifer Nou, *Intra-Agency Coordination*, 129 HARV. L. REV. 421, 422 (2015) ("Organizational design choices can determine who controls the levers of influence . . . within an administrative agency.") [hereinafter Nou, *Coordination*].

relative priority. Next Gen was a high priority for the Associate Administrator for OECA, but not as high a priority for officials in other programs that focus on permitting and rulemaking.[128] Moreover, EPA developed neither specific plans to use permitting or rulemaking to advance Next Gen, nor specific metrics for evaluating the performance of the programs.[129] Another OECA official explained that "the main reason there are no specific deliverables to include Next Gen features in permits in [agency guidance documents] is that we are in OECA and the permits are issued under the programs (air, water, waste)."[130] The absence of overarching directives or oversight mechanisms may have weakened the incentives of governmental actors outside OECA to include Next Gen components in their rules or permits.[131]

Assuming that horizontal and vertical coordination challenges face EPA in its efforts to integrate novel initiatives such as Next Gen into activities (rulemaking, permitting, and state enforcement) not directly within OECA's control, EPA's history, including past initiatives of EPA's enforcement office, demonstrates that overcoming these challenges may not have been easy. EPA's compliance and enforcement officials and their counterparts in other offices, such as the programmatic offices, have not always seen eye to eye, which could have hampered the use of Next Gen tools in rulemaking. As we have previously noted, some past EPA enforcement-related initiatives encountered significant pushback from other agency headquarters offices.[132] EPA's structure and past experience, in short, reflect that barriers to effective policy design and implementation resulting from internal substantive disagreements, capacity shortcomings, or coordination challenges may influence EPA's mechanism choices.[133] Rather than push recalcitrant offices responsible for rulemaking and permitting to pursue Next Gen strategies, OECA may have decided to rely on enforcement as the principal mechanism for implementing that initiative. Even if OECA tried to induce those offices to foster Next Gen, their refusal or laggardly efforts to do so may have had the same results.

2. Horizontal Coordination Challenges

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[128] One former EPA enforcement official, Bernadette Rappold, stated that "[i]t's not always clear to me how much the rank and file are committed to" Next Gen principles. *Former EPA Officials See Uncertain Future for 'Next Generation' Compliance*, InsideEPA.com (Oct. 26, 2016) (also noting that a former Assistant Administrator for OECA characterized Next Gen's future within the agency as "uncertain . . . because it is unclear whether a future EPA enforcement chief would support it").

[129] Despite EPA's active rulemaking docket, and its seeming commitment to use rules to advance Next Gen, an OECA guidance document for 2016-17 did not list any regulations it planned to develop to advance Next Gen's objective of "[d]esign[ing] more effective regulations. . . , with a goal of improved compliance and environmental outcomes." 2016-2017 OECA Guidance, *supra* note 117, at 13.

[130] Catherine Tunis e-mail to Katrina M. Miller (Sept. 12, 2016). OECA served as the lead office for developing the NPDES e-reporting rule, which is unusual.

[131] *Cf.* Christopher Carmichael, *Managing the Risk of Incentive Compensation at Financial Institutions*, 36 BANKING & FIN. SERVICES POL'Y REP., January 2017, at 3, 5 (stating that "goals and evaluation metrics . . . have an impact on employee behavior").

[132] *See Unraveling*, *supra* note 1, at 353-54; *supra* notes 127-30 and accompanying text. The problem is longstanding. *See, e.g.*, Frederick R. Anderson, *Negotiation and Informal Agency Action: The Case of Superfund*, 1985 DUKE L.J. 261, 380 (1985) ("Program and enforcement are in an uneasy equilibrium at headquarters.").

[133] *See, e.g., Holistic*, *supra* note 19, at 34 (referring to "horizontal coordination challenges . . . within, between, and among agencies"); *see generally* Jody Freeman & Jim Rossi, *Agency Coordination in Shared Regulatory Spa*ce, 125 HARV. L. REV. 1131 (2012).

EPA is not oblivious to these coordination challenges. For example, it sought to address horizontal coordination obstacles by establishing a "default assumption" that one of OECA's Next Gen tools, e-reporting, would be required in new regulations.[134] One OECA official informed us that it conducted training on how to write effective rules using Next Gen principles and tools.[135] OECA also worked with other EPA offices to promote aspects of Next Gen through greater reliance on advanced monitoring.[136]

Yet another horizontal coordination challenge relates to the relationship between EPA and DOJ. One might not spend much time considering the possible impact of DOJ involvement if DOJ typically served as a rubber stamp for EPA decisions. But that is clearly not the case. DOJ takes seriously its independent role as the lawyers for the United States in judicial litigation, and feels free to develop its own positions.[137] Thus, potential differences in priority and strategy between internal agency personnel and DOJ attorneys have the potential to slow, divert, or defeat agency enforcement initiatives. Full-throttled DOJ support, on the other hand, has the potential to promote them.[138] For purposes of our case study, the key question is whether DOJ's involvement may affect whether and how EPA uses enforcement as a mechanism.

Because DOJ supervises judicial enforcement litigation on environmental matters, its buy-in (or the lack thereof) is likely to influence whether Next Gen features find their way into judicial dispositions of court-approved settlements. We found that more than 60 percent of the enforcement settlements that contained Next Gen features were negotiated through a judicial consent decree with DOJ involvement.[139] Thus, DOJ played a significant role in the use of enforcement to implement Next Gen. In contrast, DOJ's involvement in settlements more generally is far more limited. For example, the vast majority of EPA settlements during the same

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[134] NEXT GEN STRATEGIC PLAN, *supra* note 116, at 6; *see* also National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, 80 Fed. Reg. 64,064, 64,070 (Oct. 22, 2015).

[135] David Hindin e-mail to Dave Markell (July 20, 2015) (on file with the authors).

[136] *Id*.; *see also* 2016-2017 OECA Guidance, *supra* note 117, at 15 (instructing EPA Regions to "[i]nclude Next Generation Compliance principles, tools, and approaches when issuing permits, reviewing permits, and training permit writers").

[137] John C. Cruden & Bruce S. Gelber, *Federal Civil Environmental Enforcement: Process, Actors, and Trends*, 18-Spg. NAT. RESOURCES & ENV'T 10, 13 (2004) (quoting 6 U.S. OP. OFF. LEGAL COUNSEL 47, 54 (1982)) (noting that DOJ exercises an independent role and that its Environment and Natural Resources Division considers "[e]nvironmental enforcement [to be] one of [its] core responsibilities."); Elizabeth Magill & Adrian Vermeule, *Allocating Power Within Agencies*, 120 YALE L.J. 1032, 1060-61 (2011). For discussion of the sometimes less than salutary impact of control of litigation by DOJ on the programs of agencies such as EPA, see generally Herz & Devins, *supra* note 98; Neal Devins & Michael Herz, *The Uneasy Case for Department of Justice Control of Federal Litigation*, 5 U. PA. J. CONST. L. 558 (2003).

[138] *See* Marc Melnick & Elizabeth Willes, *Watching the Candy Store: EPA Overfiling of Local Air Pollution Variances*, 20 ECOLOGY L.Q. 207, 227 (1993). For other work on horizontal relationships among agencies, *see* David A. Hyman & William E. Kovacic, *Why Who Does What Matters: Governmental Design and Agency Performance*, 82 GEO. WASH. L. REV. 1446, 1454 (2014); Alejandro E. Camacho & Robert L. Glicksman, *Functional Government in 3-D: A Framework for Evaluating Allocations of Government Authority*, 51 HARV. J. ON LEGIS. 19 (2014). *See also* David L. Markell & Robert L. Glicksman, *A Holistic Look at Agency Enforcement*, 93 N.C. L. REV. 1, 8 (2014) (citing Thomas O. McGarity, *When Strong Enforcement Works Better than Weak Regulation: The EPA/DOJ New Source Review Enforcement Initiative*, 72 MD. L. REV. 1204, 1206 (2013)) (describing "what can be accomplished when a regulatory agency and [the Department of Justice] are willing to devote substantial resources to a coordinated deterrence-based enforcement initiative").

[139] *See supra* note 99 and accompanying text.

time period were resolved administratively.[140] One explanation for the relatively high rate of DOJ participation in Next Gen settlements might be the additional seriousness of litigation if it is being pursued judicially rather than administratively. Pursuing a case in court might give EPA additional leverage to procure a settlement, and the agency may have believed that such leverage would be helpful. The difference in maximum penalty amounts is a prominent example.[141] In addition, the types of cases most suitable for judicial settlement may also be most suitable for Next Gen. EPA may have decided that the circumstances in which Next Gen tools are most needed should be pursued in court not only because of the higher penalties available, but also because judicial settlements may attract more publicity than administrative settlements, creating a more effective general deterrent.[142]

Notwithstanding the higher percentage of settlements with Next Gen features that resulted from judicial proceedings, at least according to one source, "DOJ has never adopted the Next Generation model as an authoritative guide on how to conduct prosecutions, instead considering its principles as one set of factors among many that play into any case."[143] Accordingly, EPA and DOJ may diverge on the extent to which they prioritize the Next Gen initiative generally, or particular Next Gen tools. This appears to be at least a possibility. For example, Finding 7, which relates to intra-mechanism choices involving enforcement, explores the extent to which DOJ's involvement in enforcement settlements affected the mix of Next Gen tools incorporated into those settlements. We found, for example, that the transparency tool was more likely to be incorporated into a settlement involving DOJ than in an administrative settlement negotiated by EPA alone. This large disparity was missing for the other Next Gen tools, and for two (advanced monitoring and compliance built in), administrative settlements were more likely to include them than judicial settlements. These disparate results may be due to differences in the two agencies' views over the likely effectiveness or legality of the various Next Gen tools.[144]

Our point here is not to provide a comprehensive set of explanations for the impacts of DOJ participation on Next Gen settlements. Rather, we believe that the value of our findings is to highlight the potential significance of horizontal coordination challenges between federal agencies on mechanism choice and to urge further research into how different pieces of the administrative state may influence how agencies make those choices.

3. Vertical Coordination Challenges

Successful integration of Next Gen components into the enforcement and compliance promotion efforts of EPA and its state partners also depended on vertical coordination. The allocation of authority between national and more dispersed offices of an agency also may have a

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[140] *See id*.
[141] *See supra* note 98 and accompanying text.
[142] *Cf*. Lars Noah, *Administrative Arm-Twisting in the Shadow of Congressional Delegations of Authority*, 1997 WIS. L. REV. 873, 888–89 (1997) (noting that companies regulated by the Food and Drug Administration may prefer voluntary product recalls to litigation over regulatory because recalls allow them "to exercise greater control over the nature and extent of public notification regarding any hazards associated with their particular product").
[143] *DOJ, EPA Enforcement Efforts Face Uncertain Future In Trump Administration*, ENVTL POL'Y ALERT, www.InsideEPA.com, Nov. 23, 2016, at 31, 32.
[144] *See supra* note 49 and accompanying text.

significant impact on mechanism choice, as the role of EPA regional officials demonstrates.[145] EPA operates ten regional offices, from Boston (Region 1) to Seattle (Region 10).[146] These offices have primary responsibility for negotiating many enforcement settlements and for issuing many permits, with varying degrees of Headquarters guidance and oversight.[147] Regional offices may have a more significant influence on mechanism choice than one might expect because of regional autonomy, lack of coordination, and related factors.[148] They may have different mechanism choice preferences than the agency's Washington offices or than Next Gen's principal entrepreneur, OECA. The critical point here is that, far from marching in lockstep, EPA Regions often march to their own drummers to a considerable degree, despite Headquarters efforts to promote national consistency. Finding 5 reflects the influence that the division of authority between EPA Headquarters and its regional offices may have on mechanism choice.

Thus, regional buy-in (which strong support from an agency's national office may engender) is essential to effective implementation of initiatives, such as Next Gen, that an agency seeks to implement through multiple legal mechanisms, some of which are administered primarily outside its national offices. Broad-based regional integration is especially important if an important agency goal is to maintain a level playing field throughout the country, as it is with EPA.[149] These vertical coordination challenges may hold considerable explanatory value for our findings of regional differences in Next Gen's development and implementation. Regional variation was too weak in our findings, however, to provide the basis for strong findings about the impact that particular Regions may have had in determining Next Gen mechanism choices. Further research could help determine the extent to which mechanism choice is affected by regional office actions and decisions generally, and whether particular EPA Regions prefer particular Next Gen tools in particular. If so, such variations would suggest the importance of close attention to key actors as possible influences on mechanism choice in a variety of other settings.[150]

Although this analysis provides insights into the possible explanations for the predominance of enforcement settlements as a mechanism for implementing Next Gen, we

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[145] On the roles and influence of regional offices of federal agencies, see generally Dave Owen, *Regional Federal Administration*, 63 UCLA L. REV. 58 (2016). *See also* David Fontana, *Federal Decentralization*, 104 VA. L. REV. 727 (2018) (discussing the federalism and separation of powers implications of decentralization of federal agency decisionmaking).

[146] EPA Organizational Chart, *supra* note 124.

[147] GAO-13-115, *supra* note 19, at 4 ("[M]ost of EPA's enforcement responsibilities are carried out by its 10 regional offices.").

[148] *See Unraveling*, *supra* note 1, at 354-55 (discussing "the considerable autonomy that the ten regional offices have traditionally enjoyed" and the struggles that agency Headquarters have experienced in "provid[ing] direction that the regional offices are able and willing to follow").

[149] *See, e.g.*, Robert L. Glicksman & Richard E. Levy, *A Collective Action Perspective on Ceiling Preemption by Federal Environmental Regulation: The Case of Global Climate Change*, 102 NW. U. L. REV. 579, 598 (2008) (noting that one justification for federal environmental law "emphasizes the need for uniform standards"); Richard E. Levy & Robert L. Glicksman, *Access to Courts and Preemption of State Remedies in Collective Action Perspective*, 59 CASE W. RES. L. REV. 919, 932 (2009) ("A common justification for federal regulation is the need for uniformity, particularly as a means of removing obstructions to interstate commerce.").

[150] The lack of data on state permitting and enforcement decisions prevented us from exploring the extent to which vertical coordination challenges between EPA and state permit issuers and enforcement officials affected Next Gen mechanism choices.

hesitate to draw too many inferences from the data reflected in Finding 1. As indicated above,[151] we have little data about the extent to which Next Gen features were built into permits issued by EPA Regions or the states during the period of our study. These data limitations hinder our ability to understand whether the relative paucity of the use of permitting as a vehicle for advancing Next Gen goals is due to factors such as lack of opportunity on the part of OECA, a conclusion by OECA officials that enforcement settlements would be more effective at achieving Next Gen goals, or a lack of understanding of or incentive to promote Next Gen by permit issuers. It would therefore be worthwhile to develop additional information (beyond the data in Finding 1) to learn more about the possible impact of vertical coordination challenges such as those facing EPA on mechanism choice.[152] More work is needed to unpack the relationship (if any) between OECA's motivation and capacity and the actual use of different mechanisms.

In short, we assume that traditional explanations for mechanism choice may have influenced EPA's choice of mechanisms to advance Next Gen. But our findings suggest that other variables we identify as salient for agency mechanism choice, including the mix of actors charged with implementing a regulatory regime, may also have played a role. In particular, some combination of OECA's role as the policy entrepreneur in designing and implementing Next Gen, its greater control and influence over enforcement than over permitting and rulemaking, and horizontal and vertical coordination issues, all may have influenced EPA's mechanism choice by contributing to its use of enforcement to a greater extent than one might expect based solely on the conventional typologies of factors that the literature identifies as critical to agency mechanism choice.[153]

If this hypothesis is correct, it casts doubt about the comprehensiveness of traditional explanations for mechanism choice and, instead, suggests that a more expansive lens such as the one we provide here is needed to understand why agencies choose the mechanisms they do.[154] Our findings suggest many opportunities for more in-depth research into several questions relating to the impact of OECA's key role and associated horizontal and vertical coordination challenges on Next Gen's development and implementation. These include: (1) the extent to which one or more of the six factors we identify may have influenced the total number of Next Gen instruments; (2) whether these factors have influenced the relative use of the different types of instruments; and (3) the extent to which one or more of these factors may have influenced how such mechanisms were used. Greater insights concerning these issues may help to equip policymakers to devise strategies that will help to improve internal operations to ameliorate performance shortcomings and increase the chances of achieving programmatic goals. For our purposes, the key point is that the facts we have adduced, and additional information of the types we have identified, all suggest that mechanism choice may well be influenced by more than the factors highlighted in the traditional law review literature.

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[151] See *supra* note 37 (reviewing some of the limitations in our data set that complicate efforts to assess the extent of and impact of the use of different mechanisms).

[152] The inherent differences among the mechanisms, which has been the traditional focus of at least the law review literature on mechanism choice, is undoubtedly also a relevant factor.

[153] *Cf.* Nou, *supra* note 127, at 428, 429 (suggesting that adjudication has waned as a policymaking vehicle).

[154] Our focus here on the influence of actors simply illustrates the manner in which that factor may influence mechanism choice and is not meant to exclude the possible salience of other factors reflected in Figure 1. We evaluate the potential role of these other factors on the relative frequency of enforcement as a mechanism to promote Next Gen tools in the remainder of this Part.

B. *The Possible Influence of Agency Policy Objectives*

A second influence on mechanism choice that extends beyond the traditional focus on the characteristics of the mechanisms themselves is the relationship between an agency's policy goals and its choice of strategies to achieve them. EPA has identified five objectives (or tools) in its Next Gen initiative that it hopes will improve compliance with the environmental laws.[155] These include the use of advanced monitoring technologies such as fenceline monitoring; new information distribution technology such as e-reporting; enhanced transparency measures such as public notification via agency or regulated party-hosted websites; improved rules that facilitate compliance (rules with "compliance built in"); and innovative enforcement approaches such as third-party monitoring. If EPA used a different mix of legal mechanisms to promote these objectives (*e.g.*, using rulemaking to promote electronic reporting but permitting to promote advanced monitoring), it would support devoting more attention in future research and analysis of mechanisms choice to the relationship between an agency's pursuit of policy objectives and the mechanisms it chooses to achieve them.

We found that EPA's use of different Next Gen tools indeed varies significantly by mechanism. As we indicated in our description of Finding 3, we found a statistically significant interaction between the type of legal mechanisms and the likelihood of specific tool usage.[156] For example, EPA was significantly more likely to use advanced monitoring and transparency in enforcement settlements than any of the other Next Gen tools.[157] Advanced monitoring, transparency, and e-reporting appeared more frequently in permits than innovative enforcement or "compliance built in."[158] EPA resorted to advanced monitoring and innovative enforcement less frequently than the other Next Gen tools in regulations.[159]

What might account for differential use of tools according to the mechanism chosen to achieve Next Gen's effort to strengthen the impact of enforcement and bolster compliance rates? We posit that several factors may be responsible for the differential association between Next Gen tools and the mechanism chosen to employ them.[160] The first is what we might call "fit." The notion of fostering "compliance built in" is to create a regulatory regime that avoids the need for enforcement by facilitating regulated entities' ability to understand and comply with their regulatory obligations. It would make little sense to prioritize the use of that tool in enforcement settlements because by that time, the enforcement process has run its course. The use of this tool in regulations and permits makes much more sense.

[155] *See supra* note 22 and accompanying text.
[156] *See supra* § II B.3.
[157] *See supra* note 52 and accompanying text.
[158] *See supra* note 53 and accompanying text.
[159] *See supra* note 54 and accompanying text.
[160] Some of these factors overlap with the considerations associated with the more traditional analysis of agency mechanism choice. *See, e.g.*, SEC v. Chenery, 332 U.S. 194, 202 (1947) (identifying circumstances in which agencies may prefer to adopt policy through adjudication rather than rulemaking, including lack of experience in dealing with a problem or the specialized nature of the problem); *Unraveling*, *supra* note 1, at 343-46 (listing and discussing factors frequently thought to bear on agency mechanism choice).

A second set of factors might be affordability (to regulated entities and the government) and cost-effectiveness. It may be that the cost-benefit ratio for use of a tool such as advanced monitoring is likely to differ dramatically, certainly from industry to industry, but even among firms within a single industry. If so, an agency might decide to rely on that tool selectively in permits for which the net payoff is likely to be greatest. A related concern is the practicality of using a particular tool. The technology to use an advanced monitoring technique may be farther along for one category of plants, or one environmental medium, than for another, and the capacity of individual regulated entities to use that technique may differ. Those kinds of differences may suggest pursuing an incremental approach through permits and settlements until the agency is convinced that a tool has been used sufficiently to justify requiring it on a broader scale through regulations.

Concerns about the scope of an agency's authority to pursue a particular goal, or require the use of a particular tool, also may affect mechanism choice. Sometimes, agencies are confident in their legal authority to pursue use of a particular tool in a particular context, while in others they anticipate legal challenges to the use of a tool by regulated entities and others outside the agency.[161] Industry has raised concerns about EPA's authority to incorporate third-party verification (as a form of innovative enforcement) and electronic reporting into its regulatory programs for underground storage tanks.[162] To the extent that EPA is concerned about whether it has the authority to use a particular Next Gen tool, it may prefer to test that authority in the context of a select group of settlements or permits rather than through the crucible of across-the-board regulations.

Yet another factor is stakeholder interest. Transparency, for example, may have many positive payoffs from the perspective of the agency and community groups and non-governmental organizations. But it also might create greater exposure to third-party suits that concern regulated parties. That possibility may make regulated parties reluctant to agree to incorporation of a transparency requirement in a negotiated settlement. Regulated entities may have less leverage to block the use of that tool in a permit. Our findings, however, reflect relatively frequent use of transparency in both permits and settlements.

We do not seek here to provide definitive explanations of the impact of the constellation of factors discussed above on our findings concerning EPA's Next Gen mechanism choices. Our goal is simply to suggest expanding the traditional analytical lens by investigating the influence of these and other factors on mechanism choice.

C. The Possible Influence of the Interaction of Statutory Authority and Mechanism Choice

In our empirical investigation, we sought to use a statutory lens in evaluating EPA's use of different legal mechanisms to advance Next Gen tools and objectives. Finding 4 reflects our conclusion that an interaction exists between the mechanism used and the governing statute.[163]

[161] An environmental public interest group might object to third-party certification as a form of innovative enforcement oversight if regulate entities were free to choose the certifying entity.
[162] *See Unraveling*, *supra* note 1, at 382.
[163] *See supra* § II B.4.

In other words, EPA used the available legal mechanisms to advance Next Gen tools differently under the three regulatory statutes (the CAA, CWA, and RCRA) that provide the legal landscape for Next Gen's development and implementation. For example, we found that EPA included Next Gen tools more frequently in settlements resolving alleged violations of the CAA than in regulations or, especially, permits.[164] EPA used permits much more frequently as a Next Gen implementation mechanism under the CWA, and it used rules more frequently under RCRA than it did under the CAA.[165] We also considered whether the mix of Next Gen Tools differed under the three statutes. We again found that it did. For example, EPA used e-reporting in a lower percentage of CAA settlements than RCRA settlements.[166] EPA aimed at achieving "compliance built in" less frequently in CWA rules than rules promulgated under the CAA or RCRA.[167]

Each of these two sets of findings supports our hypothesis that multiple factors beyond traditional explanations – in this case, differences in statutory authority or the manner in which an agency uses it – have influenced EPA's mechanism choices and is likely to do so more generally. An obvious direction for further research to account for the differences identified in Finding 4 is to pursue the possibility that differences in EPA's statutory authority under the three statutes might help to explain why EPA has used the mechanisms so differently.

The most obvious reason why EPA's use of Next Gen Tools may differ by statute is the existence of a statutory mandate to use one or more of those tools or a statutory prohibition on doing so. A rule that EPA adopted in 2016 under the Formaldehyde Standards for Composite Wood Products Act, enacted in 2010 as an amendment to the Toxic Substances Control Act, [168] requires third-party monitoring.[169] In this case, the impetus for imposition of this Next Gen tool by rule originated with Congress, which directed EPA to issue regulations that included use of a third-party testing and certification scheme.[170] As EPA explained in the preamble to its proposed rule, the regulatory imposition of a third-party certification requirement is designed "to help ensure that regulated composite wood products consistently meet the TSCA Title VI formaldehyde emission standards."[171] Similarly, RCRA imposed a deadline on EPA to issue regulations establishing an electronic manifest system, a form of electronic reporting, for the management of hazardous waste.[172] EPA issued these e-reporting regulations in 2014,[173] and it has since issued supplemental regulations addressing issues such as the methodology for computing user fees.[174] These statutory mandates may account for the agency's greater reliance

[164] *See supra* note 57 and accompanying text.
[165] *See supra* notes 58-59 and accompanying text.
[166] *See supra* note 63 and accompanying text.
[167] *See supra* notes 64-65 and accompanying text.
[168] Formaldehyde Standards for Composite Wood Products Act, Pub. L. No. 111-196, 124 Stat. 1359 (2010) (codified at 15 U.S.C. § 2697).
[169] Formaldehyde; Third-Party Certification Framework for the Formaldehyde Standards for Composite Wood Products, 81 Fed. Reg. 89,674 (Dec. 12, 2016) (codified at 40 C.F.R. § 770.7).
[170] 15 U.S.C. § 2697(d) (2012).
[171] Formaldehyde; Third-Party Certification Framework for the Formaldehyde Standards for Composite Wood Products, 78 Fed. Reg. 34,796, 34,798 (June 10, 2013).
[172] 42 U.S.C. § 6939g(b), (g)(1)(A) (2012).
[173] Hazardous Waste Management System; Modification of the Hazardous Waste Manifest System; Electronic Manifests, 79 Fed. Reg. 7518 (Feb. 7, 2014).
[174] Hazardous Waste Management System; User Fees for the Electronic Hazardous Waste Manifest System and Amendments to Manifest Regulations, 83 Fed. Reg. 420 (Jan. 3, 2018).

on rules to implement an initiative such as Next Gen under RCRA than under other statutes lacking such mandates.[175] The CAA also makes specific reference to a Next Gen tool. It authorizes EPA to "require enhanced monitoring," and to do so through the promulgation of rules .[176] EPA has issued implementing regulations, requiring states, for example, to submit enhanced monitoring plans for ozone.[177] Similar tool-specific mandates are missing from the CWA, which is perhaps part of the reason that EPA resorted to rules as a mechanism for requiring the use of Next Gen tools less frequently under the CWA than under the other two statutes. Of course, if a statute mandates or prohibits the use of a particular regulatory approach, the agency lacks the authority to make any choices concerning that approach.

The more common situation may involve situations in which an agency's organic statute authorizes but does not require the use of a regulatory approach or tool. An explicit reference to an approach or tool in that kind of discretionary delegation may make an agency more comfortable with and likely to use the tool, as it removes concerns about statutory authority that may otherwise create obstacles to an agency's use of the tool or at least induce a cautionary mindset.[178] Even if an agency's organic statute does not refer to the particular form of a tool the agency wants to employ, its delegation may be couched in broad terms that are reasonably susceptible to a reading that provides the agency with sufficient authority to require the use of that tool by regulated entities. Both the CAA and the CWA, for example, authorize EPA to require regulated entities to submit reports and engage in emissions or discharge monitoring, but they do not specify the appropriate forms of reporting (such as a e-reporting) or monitoring (such as advanced monitoring).[179] Nor do they specify the legal mechanism EPA must use in exercising that authority. As a result, this kind of delegation may not tell us much about why EPA chose to pursue an authorized Next Gen tool through one mechanism instead of another. EPA's choice may have turned on factors such as the importance it attributed to using a particular tool and the agency's perception of its suitability for its general application. If EPA believed that third-party certification was a resource-saving oversight technique that was likely to provide reliable information regardless of context, for example, it might choose to establish certification programs by rule in a wide variety of contexts.

Restrictions on the agency's authority might also influence its mechanism choices. The CWA, among other federal pollution control statutes, prohibits or restricts the disclosure by EPA of certain kinds of trade secrets and confidential business information. It also imposes criminal sanctions on officials who violate those restrictions.[180] Concern over running afoul of those restrictions might lead EPA to decide that a prudent approach to employing the transparency tool is to do so in individualized contexts such as issuance of permits or entry into enforcement

[175] EPA issued both rules during the period of our study (January 1, 2013 through January 1, 2017).
[176] 42 U.S.C. § 7414(a)(3) (2012).
[177] 40 C.F.R. § 58.10(a)(11). That regulation was amended during our study period. National Ambient Air Quality Standards for Ozone, 80 Fed. Reg. 65292, 65420-24 (Oct. 26, 2015).
[178] *See supra* note 161 and accompanying text (discussing possible legal obstacles to Next Gen implementation).
[179] 33 U.S.C. § 1318(a)(A)(ii)-(iii) (2012) (CWA); 42 U.S.C. § 7414(a)(1)(B)-(C) (2012) (CAA). The statutes also provide a catchall grant of authority to require regulated entities to "provide such other information as [it] may reasonably require." 33 U.S.C. § 1318(A)(v); 42 U.S.C. § 7414(a)(1)(G). Those kinds of provisions would appear to authorize innovative reporting or monitoring tools even if the general grant does not. The CAA authorizes EPA to require submission of compliance certifications but does not refer to third-party certifications. *Id*. § 7414(a)(3).
[180] 33 U.S.C. § 1318(b) (2012). The Toxic Substances Control Act has elaborate provisions protecting confidential business information. 15 U.S.C.A. § 2013 (Supp. 2018).

settlements, rather than by issuance of rules, at least if EPA intends to rely on agency-created websites. The more specific contextual use may allow EPA to craft transparency requirements for individual regulated entities that are less likely to prompt the disclosure of protected information than a generally applicable rule would do.

Finally, the level of penalty assessments available to an agency may impact the degree to which it resorts to enforcement actions as a vehicle for requiring regulated entities to use Next Gen tools. EPA may find enforcement to be a more attractive option under a statute with high statutory maximum penalties, but it may prefer permitting or rules if available penalties are lower. These kinds of differences exist in the environmental statutes.[181]

The foregoing discussion illustrates the mix of considerations that may influence why agencies choose one mechanism rather than another to pursue their goals or implement a particular kind of regulatory tool. Further research into comparative mechanism choice under different statutes administered by the same agency is likely to shed more light on this factor.

D. *The Possible Influence of Regulated Entities*

Another factor that tends not to be accounted for in the traditional law review literature is the influence on mechanism choice of the identity of the regulated entity that would be affected by the obligations an agency is seeking to impose through one or another mechanism. We investigated possible differences in the use of mechanisms to advance Next Gen objectives based on the identity of the affected regulated party because it appears that, in at least some circumstances and on some occasions, EPA has treated municipal and industrial parties differently.[182] For example, one scholar reported that, during the 1990s, EPA had a "prosecutorial habit of naming private, but not municipal," entities as potentially responsible parties in CERCLA enforcement actions.[183] During that time, this "habit" "shift[ed] billions of dollars of cleanup responsibilities . . . [from] municipalities and impos[ed] their cleanup share on private parties."[184] Similarly, in describing a major municipal compliance initiative aimed at

[181] *See, e.g.*, 33 U.S.C. § 1319(g)(2)(A) (specifying a maximum CWA Class I administrative civil penalty of $10,000 per violation); 42 U.S.C. § 6928(a)(3) (capping RCRA civil penalties at $25,000 per day of noncompliance); 42 U.S.C. § 7413(d)(1) ($25,000 per day cap under the CAA). *See also id*. (setting total penalty cap under the CAA of $200,000); 33 U.S.C. § 1319(g)(2)(B) (setting total penalty cap of $125,000 for Class II civil penalties under the CWA).

[182] *See, e.g.*, ROBERT V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION: LAW, SCIENCE & POLICY 932 (2d ed. 1996) (noting that EPA officials acknowledge they virtually never obtain economic benefits when they file enforcement actions against municipal sewage treatment facilities); Clifford Rechtschaffen, *Deterrence v. Cooperation and the Evolving Theory of Environmental* Enforcement, 71 S. CAL. L. REV. 1181, 1227, 1231 (1998) (finding that the great majority of municipal facilities violated the CWA without targeted enforcement).

[183] Steven Ferrey, *The Toxic Time Bomb: Municipal Liability for the Cleanup of Hazardous Waste*, 57 GEO. WASH. L. REV. 197, 252-253 (1988).

[184] *Id.* at 274. Ferrey attributed EPA's likely rationale for differential treatment of industrial and municipal potentially responsible parties to concern that municipal liability would "translate directly into higher property tax levies. As a result, current property taxpayers would indemnify PRP municipalities for past [environmental violations], raising intergenerational equity issues. In some situations, this burden on the municipal fisc would spill over into requests for state assistance." *Id.*

assisting municipalities with meeting CWA treatment requirements, EPA noted that it would prioritize enforcement actions against "major municipalities"[185] and industrial violators.[186]

The resource constraints facing municipalities continue to drive EPA's differential treatment of governmental and corporate regulated entities today. A 2012 CWA compliance initiative "emphasizes more flexible negotiations with municipalities that lack adequate resources and whose ratepayers are unable to finance upgrades and repairs to wastewater pipes and related collection systems."[187] As the Congressional Research Service put it, "[p]ressed by municipalities about the financial challenges that they face in addressing needs for wastewater and stormwater control projects," EPA's integrated permitting and planning policy seeks to "provide communities with flexibility to prioritize and sequence needed water infrastructure investments so that limited public dollars can be invested in ways that each municipality finds most valuable."[188] Thus, in at least some situations, EPA treats municipalities in enforcement-related contexts differently from industrial regulated parties, with much more attention paid to issues such as capacity, affordability, and marginal benefit in the former context. It may be more reluctant to pursue enforcement action against governmental entities and it may seek less onerous sanctions when it does.

This analysis is consistent with aspects of Finding 6.[189] We found that Next Gen enforcement settlements were more likely to involve industrial than municipal defendants.[190] We also found that the mix of Next Gen tools to which EPA resorted differed for the two categories of regulated entities. EPA was more likely to impose transparency requirements on municipalities than industrial sources in enforcement settlements, but was slightly more likely to require advanced monitoring in settlements against industrial sources. These discrepancies might be due to any number of factors, including the greater financial commitment that advanced monitoring may entail as compared to transparency requirements such as posting discharge or emission levels on a website.

By contending that features of the regulated party that have not been emphasized in the traditional literature may affect mechanism choice, we are not suggesting that traditional literatures lack possible explanatory power. Instead, we are convinced that multiple factors,

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[185] Major municipalities are presumably generally more capable of absorbing noncompliance monetary sanctions than smaller local government units. *But cf*. Ralph Blumenthal, *Recalling New York at the Brink of Bankruptcy*, N.Y. TIMES, Dec. 5, 2002, https://www.nytimes.com/2002/12/05/nyregion/recalling-new-york-at-the-brink-of-bankruptcy.html (noting that New York City lawyers filed a bankruptcy petition in 1975).

[186] U.S. Envtl. Prot. Agency, *National Municipal Policy and Strategy for Construction Grants, NPDES Permits, and Enforcement Under the Clean Water Act*, at 5 (1979), https://www3.epa.gov/npdes/pubs/owm0010.pdf ;U.S. Envtl. Prot. Agency, *Policy Guidance for FY 1980/1981*, at 35 (1979), https://nepis.epa.gov/Exe/ZyPDF.cgi/2000RWOH.PDF?Dockey=2000RWOH.pdf (prioritizing enforcement against major sources).

[187] *Cities, Do Your Homework Before Negotiating Sewer Overflows: EPA*, 48 ENV'T REP. 1192 (Dec. 1, 2017).

[188] Jonathan L. Ramseur, Congressional Research Service, *EPA Policies Concerning Integrated Planning and Affordability of Water Infrastructure*, 7-5700, at 3 (2017); *see also* U.S. Envtl. Prot. Agency, *Interim Clean Water Act Settlement Penalty Policy*, at 17-20 (Mar. 1, 1995), https://www.epa.gov/sites/production/files/documents/cwapol.pdf (providing guidance on calculating penalties that was specific to municipal cases).

[189] *See supra* § II B.6.

[190] *See supra* note 87 and accompanying text; *see also* Table 7.

some traditional and some that are part of our expanded array of considerations, may help to account for mechanism choices. Differential treatment of alleged violators based on a variety of factors is well-established in the enforcement realm,[191] and not all of these are tied to the type of regulated party involved. For example, the nature and extent of the violations is a relevant consideration, and both industrial and municipal defendants are capable of committing serious violations.[192] The environmental significance of the violations is another potential influence that need not be correlated to the nature of the regulated entity.[193] The extent to which a regulated party cooperates with an agency and addresses any violations in a timely way[194] and historic compliance performance are additional relevant considerations.[195] Nevertheless, factors such as affordability are likely to influence whether and how the agency wields its enforcement powers, and it may be possible to generalize about the propensity of different categories of regulated entities (industrial vs. municipal; large vs. small businesses[196]) to be financially capable of meeting particular kinds of regulatory obligations. Our analysis of the differential treatment of industrial and municipal entities in connection with Next Gen's implementation may provide insights into how the identity of regulated parties (which may involve differences other than this one) influences mechanism choice in other contexts.

E. *The Possible Influence of the Differences Between Judicial and Administrative Enforcement*

The discussion in this Part so far has focused on the factors that may induce agencies such as EPA to choose one mechanism (regulations, permits, or adjudicatory enforcement actions) instead of another. Even if an agency has decided to rely on one of the three mechanisms, it may have options (what we call intra-mechanism choices) within a mechanism. The agencies that administer the CWA have the option, for example, of permitting by rule or on a case-by-case basis, and both EPA and the Army Corps of Engineers have relied heavily on regulatory (or general) permitting to administer both the National Pollutant Discharge

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[191] *See, e.g.*, 33 U.S.C. § 1319(d) (2012) (authorizing federal courts to base the amount of civil penalty assessments on factors that include the defendant's compliance history and on whether the defendant engaged in good faith efforts to comply).

[192] EPA has long considered the significance of violations in making enforcement decisions. *See, e.g.*, *Holistic*, *supra* note 19, at 65-67; U.S. Envtl. Prot. Agency, Office of Enforcement and Compliance Assurance, *Memorandum: Revision of NPDES Significant Noncompliance (SNC) Criteria to Address Violations of Non-Monthly Average Limits*, Sept. 21, 1995, https://www.epa.gov/enforcement/memorandum-revision-npdes-significant-noncompliance-snc-criteria-address-violations-non; U.S. ENVTL. PROT. AGENCY, EPA BUDGET IN BRIEF FY 2016, at 62, http://www2.epa.gov/sites/production/files/2015-02/documents/fy_2016_bib_ combined_v5.pdf (noting the agency's intention to allocate resources to noncompliance having the most significant impact).

[193] *See, e.g.*, *Dynamic Governance*, *supra* note 16, at 593-94; David M. Uhlmann, *After the Spill Is Gone: The Gulf of Mexico, Environmental Crime, and Criminal Law*, 109 MICH. L. REV. 1413, 1459 (2011) ("The EPA emphasizes cases involving significant harm in its policy regarding the exercise of investigative discretion.").

[194] One example is EPA's self-audit policy. Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations, 65 Fed. Reg. 19,618 (Apr. 11, 2000). Under this Policy, EPA may waive "gravity-based penalties for violations that are promptly disclosed and corrected . . . through voluntary audits or compliance management systems." *Id.* at 19,619.

[195] *See, e.g.*, 33 U.S.C. § 1319(g)(3) (2012).

[196] Both Congress and federal agencies have long been inclined to treat small businesses preferentially. *See generally* Richard J. Pierce, Jr., *Small Is Not Beautiful: The Case Against Special Regulatory Treatment of Small Firms*, 50 ADMIN. L. REV. 537, 538 (1998).

Elimination System and dredge and fill permit programs, respectively.[197]

In our study, we addressed intra-mechanism choices in a different context – the pursuit of civil enforcement action through administrative or judicial proceedings.[198] EPA under most of its organic statutes (including the CWA,[199] the CAA,[200] and RCRA[201]) has the option to pursue civil enforcement through either type of proceeding. We sought to determine the extent to which EPA relied on administrative or judicial proceedings to impose on alleged violators the obligations relating to Next Gen tools. Finding 7 reflects our findings that nearly 65% of the enforcement settlements during the period we studied that include one or more Next Gen tool were settlements negotiated jointly with EPA and DOJ to resolve judicial proceedings. This breakdown differed dramatically from the overall distribution of EPA settlements during the same period, which tilted overwhelmingly toward administrative settlements.[202]

The reasons for this difference are unclear. One possible explanation for the relatively greater use of judicial settlements in Next Gen cases is that EPA tends to bring more serious cases judicially.[203] Thus, the nature of the violations may be a partial driver of EPA's intra-mechanism choice decisions. In addition, cases involving relatively significant violations may be ripe for Next Gen treatment because innovative approaches (such as advanced monitoring or innovative enforcement approaches) may have the capacity to mitigate significant concerns that other, more traditional forms of relief would be less likely to address as effectively.

A third possible explanation is that the government has more leverage to gain regulated party agreement to innovative injunctive relief in judicial cases because the sanctions are higher for civil judicial penalty cases than for administrative cases.[204] EPA may tend to opt for judicial enforcement in cases in which it contemplates use of a Next Gen tool because of its perception that the active participation of DOJ may increase the government's leverage and the willingness of enforcement targets to agree to creative approaches to resolve alleged violations.[205] Other factors, such as differences in transaction costs and the prospect for adverse publicity, might also increase the government's leverage in judicial cases.

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[197] *See generally* Biber & Ruhl, *supra* note 6.
[198] Criminal charges can only be brought in federal court by DOJ. *See* 33 U.S.C. § 1319(c) (2012); 42 U.S.C. § 6928(d) (2012); 42 U.S.C. § 7413(c) (2012).
[199] 33 U.S.C. § 1319(d), (g).
[200] 42 U.S.C. § 7413(a)(3)-(4), (b), (d).
[201] 42 U.S.C. § 6928(a)(1).
[202] *See supra* note 99 and accompanying text.
[203] *See* Memorandum from Jeffrey H. Wood, Acting Assistant Attorney General, *Enforcement Principles and Priorities* 5-6 (March 12, 2018), https://www.justice.gov/enrd/page/file/1043731/download (noting that judicial enforcement is one of many possible enforcement tools, that it is often used for relatively significant alleged violations when less formal approaches may not be appropriate, and that DOJ may return a referral to EPA if it determines that the matter "is more appropriately addressed through administrative, as opposed to judicial, enforcement").
[204] Under the CWA, for example, civil judicial penalties may reach $25,000/day with no cap. In contrast, the CWA imposes a cap of $125,000 or $250,000 for civil administrative penalties, depending on the type of administrative enforcement action. 33 U.S.C. § 1319(d), (g)(2).
[205] *See* McGarity, *supra* note 138, at 1206 (describing "what can be accomplished when a regulatory agency and DOJ are willing to devote substantial resources to a coordinated deterrence-based enforcement initiative").

On the other hand, several factors might influence EPA to prefer administrative enforcement as a mechanism to advance Next Gen tools. These include EPA's forfeiture to DOJ of ultimate control over the course of civil judicial enforcement, which does not occur in administrative proceedings.[206] To provide one example, it is not completely clear that EPA and DOJ were in complete agreement about the use of SEPs as a component of settlement agreements. DOJ's concerns about the legality of SEPs, which include commitments to do things unconnected to the underlying violation, have been dismissed by EPA as "niggling."[207] In addition, EPA might prefer a more insulated forum in which to experiment with new approaches.

We have offered some tentative explanations here for some of the intra-mechanism differences we detected. Ultimately, we believe that the value of our findings is to point the way towards more detailed analysis to understand the reasons for intra-mechanism differences of the kind we identified. They provide a starting point for identification of the factors and motivations that may influence intra-mechanism choices such as whether to seek sanctions and other relief in administrative or judicial proceedings.

F. *The Possible Influence of Supplemental Environmental Projects*

As noted above, SEPs are vehicles for imposing on defendants in enforcement actions requirements that are otherwise not authorized by the statute allegedly violated, typically in return for a reduction in penalty assessments.[208] Finding 8 explored several aspects of EPA's use of SEPs. We found that (1) settlements that required the use of one or more Next Gen tool included SEPs at a much higher rate than all of EPA's settlements during the period covered by our study;[209] (2) settlements with SEPs included advanced monitoring provisions more often than settlements without SEPs, but that settlements with SEPs included innovative enforcement provisions less often than settlements without SEPs;[210] (3) a lower percentage of CWA Next Gen settlements included SEPs than settlements under the CAA or RCRA;[211] and (4) EPA used SEPs more frequently in administrative than in judicial settlements.[212] We do not have fully satisfying explanations for all of these findings. Nevertheless, the tentative reasons we offer in this section may point the way toward further exploration of the drivers of intra-agency mechanism choices of the kind involved when EPA decides whether to include a SEP in a settlement.

Given the relative paucity of SEPs in EPA settlements generally, why do SEPs appear in a higher percentage of Next Gen settlements than for settlements overall? One possibility is that in at least some cases, EPA's authority to demand the use of Next Gen tools as relief is not open

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[206] *See* U.S. DEP'T. OF JUSTICE, JUSTICE MANUAL §§ 5-12.100, 5-12.111 (2018) (noting that DOJ has responsibility for civil matters initiated on behalf of the United States for cases brought under the CWA, CAA, RCRA, and several other environmental statutes).
[207] Devins & Herz, *supra* note 137, at 589; *cf.* Cruden & Gelber, *supra* note 137, at 13 (stating that the Attorney General represents the entire Executive, not simply single agencies, implicitly acknowledging that interests may differ on that account).
[208] *See supra* note 105 and accompanying text.
[209] *See supra* note 107 and accompanying text.
[210] *See supra* note 109 and accompanying text.
[211] *See supra* notes 110-11 and accompanying text.
[212] *See supra* note 113 and accompanying text and Table 13.

and shut.[213] Instead, by their nature these tools are innovative. Because SEPs by definition commit a regulated party to undertake a "beyond compliance" project that might not otherwise be within the agency's statutory authority, they may be a particularly attractive vehicle for resorting to Next Gen tools. This dynamic may help explain why settlements with SEPs included advanced monitoring provisions more often than settlements without SEPs.

Another question raised by Finding 8 is why the incidence of settlements that included SEPs differed by statute. An obvious possibility relates to differences in the scope of statutory authority – EPA may have believed that some of its organic statutes authorize the use of particular Next Gen tools of the kind included in SEPs while others do not or may not do so. For example, as we noted above, RCRA requires the use of electronic reporting and the CAA authorizes the use of advanced monitoring.[214] The CWA is silent on both issues. Alternatively, EPA may have deemed SEPs that include Next Gen tools less necessary or likely to be effective under some statutes than others because more traditional forms of relief were more likely to effectively address violations in one environmental medium than another. For example, the monitoring technology is less well developed for water than air pollution, so the inclusion of a provision requiring advanced monitoring may have been less attractive to EPA in CWA settlements.[215]

Why did SEPs appear in a higher percentage of administrative than judicial settlements? To some degree, we wonder about the relationship between this aspect of Finding 8 and Finding 7, which found that EPA used judicial (rather than administrative) settlements relatively more frequently to incorporate Next Gen tools than it did for settlements overall. This latter finding might make sense if EPA perceived judicial settlements to be a relatively more attractive vehicle to advance Next Gen goals, but Finding 8 appears to point in the opposite direction, at least with respect to settlements in which SEPs required the use of Next Gen tools.

These findings may be reconcilable if skepticism about the legality of SEPs on DOJ's part discouraged inclusion of SEPs in judicial settlements that are negotiated with the input of both agencies. If EPA and a regulated party agree that a SEP that includes Next Gen tools is appropriate, it may make little sense for EPA to risk scuttling the deal by seeking the consent by DOJ that is necessary for judicial settlements.[216] Moreover, if EPA prioritizes the use of Next Gen tools, the lower penalties that are often assessed in settlements that include SEPs may be less problematic for EPA than DOJ, which may value the favorable publicity associated with judicial settlements with high penalty assessments. Thus, factors such as horizontal coordination challenges and the relative importance of monetary sanctions may have motivated EPA to prefer administrative to judicial enforcement as a vehicle for pursuing the use of Next Gen tools in settlements that include SEPs.

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[213] *See supra* note 161 and accompanying text (discussing industry opposition to the use of Next Gen tools in regulation of storage tanks).
[214] *See supra* notes 171-76 and accompanying text.
[215] *See, e.g.*, George Wyeth et al., *The Impact of Citizen Environmental Science in the United States*, 49 ENVTL. L. REP. __ (forthcoming 2019) (finding that citizen monitoring using advanced technologies is more prevalent for activities regulated under the CAA than the CWA).
[216] It is possible that differences in the nature or degree of public comment and judicial oversight also might have some explanatory value.

Intra-mechanism nuances such as those associated with Findings 7 and 8 have received relatively little attention in the literature on agency mechanism choice. Thus, our findings that there is a relationship between the type of enforcement mechanism EPA used and several other variables offers a significant new direction for additional research to explore the reasons for the differences we uncovered.

V. Conclusion

The nature and scope of an agency's authority derives from its organic statute or statutes. These statutes not only provide the substantive mandates and directives which govern agency pursuit of statutory objectives. They also define the legal mechanisms an agency is authorized to use to implementat the statute. Three of the most important mechanisms for regulatory agencies are rulemaking, permitting, and enforcement. An agency cannot develop policy through the issuance of rules if it lacks delegated rulemaking authority.[217] It may only engage in administrative civil enforcement if its organic statute allows it to do so.[218]

Frequently, Congress affords discretion to an agency to use more than one legal mechanism as a means of implementing its organic statute. EPA has such discretion under each of the three organic statutes (the CWA, the CAA, and RCRA) upon which we have focused in this Article. In those circumstances, an agency must make choices as to the mechanism or mechanisms that are most suited to achieving its goals in a particular context.

Until fairly recently, the administrative law literature had relatively little to say about the inner workings of administrative agencies, tending to focus instead on the relationships between Congress and agencies and, to an even greater extent, on the relationship between agencies and the courts called upon to review the validity of their actions. Although the literature on "internal administrative law" has mushroomed in recent years, one aspect of that component of administrative law – agency mechanism choice – remains relatively underexplored. The existing literature on mechanism choice has for the most part focused on the inherent characteristics of mechanisms such as rulemaking and adjudication to explain what drives agencies to choose one or another.

That kind of comparison is certainly valuable. We are convinced that the decisionmaking calculus is considerably more complicated than that, however, and that a host of additional factors plays a part in agency mechanism choice. We have identified several such factors – the key actors involved in statutory implementation, the agency's objectives, the tools or strategies the agency has devised to accomplish its statutory mandates, and the mandates, discretionary authority, and constraints imposed by the agency's organic statute provisions.[219]

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[217] Before the decision in *Nat'l Petroleum Refiners Ass'n v. Federal Trade Comm'n*, 482 F.3d 672 (D.C. Cir. 1973), the prevailing assumption was that the FTC lacked the authority to issue substantive rules. *See* GLICKSMAN & LEVY, *supra* note 1, at 270.

[218] *Cf.* Nicholas J. Johnson, *EPCRA's Collision with Federalism*, 27 IND. L. REV. 549, 566 n.80 (1994) ("The legislature may delegate enforcement authority to administrative agencies of the executive branch so long as those delegated powers are controlled by adequate standards.").

[219] *See supra* Figure 1.

In this Article, we have tested our hypothesis that these additional factors play a critical role in agency mechanism choice through an empirical investigation of an initiative by EPA to enhance its enforcement and compliance assurance programs. As far as we are aware, this is the first attempt to provide extensive empirical analysis of agency mechanism choice. Our findings appear to confirm the significance of each of the factors we have identified as potentially relevant, although in some cases we can only engage in informed speculation about how EPA weighed these factors in choosing the mechanisms with which it sought to implement different parts of its Next Gen agenda.

We engaged in this effort not only to help understand the trajectory of Next Gen, but also to provide a template for further research – empirical and otherwise – into the expanded array of factors that prompt agency mechanism choices. That research will be valuable not only to scholars exploring how and why agencies made discretionary mechanism choices, but also to policymakers in Congress and within the agencies themselves who seek to maximize the likelihood that agencies will have sufficient means to effectively promote the public interest in ways consistent with statutory delegations of authority.