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ENVIRONMENTAL  
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# Next Generation Compliance:

## Environmental Regulation for the Modern Era

### Part 3: The Ideologues: Performance Standards and Market Strategies

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## Part 3: The Ideologues: Performance Standards and Market Strategies

There is near-universal admiration in environmental policy circles for performance-based and market strategies in environmental rules.<sup>1</sup> Virtually

<sup>1</sup> See, e.g., Cary Coglianese, *The Limits of Performance-Based Regulation*, 50 U. MICH. J. L. REFORM 525, 553 (2017) (noting the “seemingly unbridled enthusiasm for performance based regulations by regulatory commentators and officials around the world”); Laura Montgomery et al., Performance Standards vs. Design Standards: Facilitating a Shift Toward Best Practices at 33 (2019) (Mercatus Center George Mason Univ., Working Paper, <https://www.mercatus.org/system/files/montgomery-performance-design-standards-mercatus-working-paper-v1.pdf>) (“...performance standards have been touted as best practice in regulatory rulemaking since at least 1980...”); Timothy F. Malloy, *The Social Construction of Regulation: Lessons from the War Against Command and Control*, 58 BUFF. L. REV. 267, 343 (2010) (majority of legal scholars are advocates for market based regulation); Jody Freeman & Charles D. Kolstad, *Prescriptive Environmental Regulations versus Market-Based Incentives in Moving To Markets* IN ENVIRONMENTAL REGULATION, 3, 4 (Jody Freeman & Charles D. Kolstad eds., Oxford Univ. Press, 2007) (“...the superiority of market-based instruments has developed into a near orthodoxy”); Frank Ackerman & Kevin Gallagher, *Getting the Prices Wrong: The Limits of Market-based Environmental Policy* at 1 (Global Dev. and Env’t. Inst., Working Paper 00-05, 2000) (“Market based policies are fast becoming the recommended policy panacea for all the world’s environmental problems”); NAT’L ACAD. OF SCIENCES, ENGINEERING, AND MEDICINE TRANSPORTATION RESEARCH BOARD, DESIGNING

everyone unites in trashing “command and control” regulation.<sup>2</sup> Is one of these approaches best for assuring compliance?

SAFETY REGULATIONS FOR HIGH-HAZARD INDUSTRIES at 18 (The Nat’l. Academies Press, Special Report 324, 2018), <https://www.nap.edu/catalog/24907/designing-safety-regulations-for-high-hazard-industries> (many rule types seek to call themselves performance-based because of the “political legitimacy” ascribed to performance as a tool of governing); Daniel H. Cole & Peter Z. Grossman, *Beyond Compliance Costs: Comparing the Total Costs of Alternative Regulatory Instruments*, in POLICY INSTRUMENTS IN ENVIRONMENTAL LAW 32, 39 (Kenneth R. Richards & Josephine van Zeben eds., Edward Elgar Publishing 2020) (noting a “consensus in the literature” favoring economic instruments for environmental protection); Shi-Ling Hsu, *Prices Versus Quantities*, in POLICY INSTRUMENTS IN ENVIRONMENTAL LAW 183, 186 (Kenneth R. Richards & Josephine van Zeben eds., Edward Elgar Publishing, 2020) (market mechanisms are a “presumptively favored” means of regulating); Jason Scott Johnston, *Tradable Pollution Permits and the Regulatory Game*, in MOVING TO MARKETS IN ENVIRONMENTAL REGULATION at 353 (Jody Freeman & Charles D. Kolstad eds., Oxford Univ. Press, 2007) (“Indeed, so powerful is the standard economic argument for tradable pollution permit regimes that their relative scarcity in American environmental regulation now stands as something of an unexplained paradox”).

<sup>2</sup> See, e.g., Malloy, *supra* note 1, at 268-9 (arguing that there is a “war” against command and control and that “bashing traditional regulation has become something of a national pastime among legal scholars”); Wendy Wagner, *The Triumph of Technology-Based Standards*, 2000 U. ILL. L. REV. 83, 85 n.6, 107 (2000) (noting that virtually all of the literature is critical and that “...law scholars who have publicly applauded the use of technology-based standards can be counted on one hand”); Daniel H. Cole, *Explaining the Persistence of ‘Command-and-Control’ in US Environmental Law*, in POLICY INSTRUMENTS IN ENVIRONMENTAL LAW 157, 159 (Kenneth R. Richards & Josephine van Zeben eds., Edward Elgar Publishing, 2020) (“...command and control is often used as a term of derogation”); Ackerman, *supra* note 1, at 2 (command and control “frequently stigmatized”); Daniel C. Esty, *Red Lights to Green Lights: From 20<sup>th</sup> Century Environmental Regulation to 21<sup>st</sup> Century Sustainability*, 47 ENVTL. L. REV. 1, 10, 15, 46 (2017) (argues for shift from “government mandates” to a regulatory regime of “price signals,” where government can “get out of” the “old command and control regime”).



The policy discussion suffers from continued nomenclature confusion.<sup>3</sup> Loosely speaking, most people think a regulation is performance-based if it tells the regulated what to do but not how to do it.<sup>4</sup> Many of today’s EPA pollution regulations meet this definition of performance-based but are nevertheless disdained by performance-based purists.<sup>5</sup> Some people see market mechanisms as a subset of performance-based approaches, while market devotees think market mechanisms are a category unto themselves, and everything that isn’t a market approach is the dreaded command and control.<sup>6</sup> Some policy scholars, observing that the labels have become so politically freighted that they are losing all meaning, have suggested abandoning these terms

altogether and creating a new lexicon.<sup>7</sup>

All this ideological fervor is misplaced. Performance standards, market strategies, and even the much-maligned command and control are all approaches that can succeed, or dramatically fail. The key to widespread compliance is having a well-crafted rule that picks a strategy that matches the problem. Every regulation, including performance-based or market approaches, must be well-designed for the rule to realize the intended objectives and achieve widespread compliance. When the necessary regulatory safeguards are not built in, every kind of rule can struggle.

**“Performance standards, market strategies, and even the much-maligned command and control are all approaches that can succeed, or dramatically fail.”**

The rhetorical positions in this theory debate — unbridled enthusiasm for performance-based and market strategies and condemnation of command and control — do not resonate with most practitioners. EPA’s current rule writing practice looks nothing like the rigid one-size-fits-all, Soviet-style characterization attributed to it by the market proponents.<sup>8</sup> Nor is the innovative rational actor

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3 Scholars and policy advocates use a wide variety of labels to mean close to the same thing. See, e.g., NAS, *supra* note 1, at 16 (explaining that the terms “prescriptive,” “technical,” “design-specific,” “technology-based,” “command-and-control” and “one-size-fits-all,” are often used interchangeably). The terms are also used inconsistently. See, e.g., *id.* at 16-18.

4 Coglianese, *supra* note 1, at 532; Montgomery, *supra* note 1, at 3, 5; NAS, *supra* note 1, at 16.

5 See, e.g., Malloy, *supra* note 1, at 313-318; Coglianese, *supra* note 1, at 534 n. 32 (what some people call technology-based standards are actually performance standards); Wagner, *supra* note 2, at 90 (EPA’s air toxic regulations contain a quantitative pollution limit that is derived from what the top performing sources can achieve).

6 See, e.g., Coglianese, *supra* note 1, at 535 (market strategies are a type of performance standard); Robert Stavins, *Market-Based Environmental Policies: What Can We Learn from U.S. Experience (and Related Research)?*, in *MOVING TO MARKETS IN ENVIRONMENTAL REGULATION*, 19 (Jody Freeman & Charles D. Kolstad eds., Oxford Univ. Press 2007) (everything not markets is command and control); Cole, *supra* note 2, at 159 (performance standards are classified as command and control).

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7 See NAS, *supra* note 1, at 2, 19, 30.

8 See Malloy, *supra* note 1, at 331 (referencing Professor Stewart’s “oft-repeated comparison of command and control to ‘Soviet-style



of economic theory frequently encountered by inspectors in the field; it is common to find firms that have failed to adopt better and cheaper pollution reduction technologies. Most pollution standards adopted by EPA are performance-based, but you would never know that by reading the blistering critiques.<sup>9</sup>

A few brave souls have pointed out the lack of evidence for these soaring claims of universal policy superiority, noting that scholars have uncritically adopted these positions despite their “astonishing lack of empirical support.”<sup>10</sup> The absence of

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central planning”).

9 See *id.* at 315 (most EPA air rules set an emission limit and don’t mandate use of any particular control technology); U.S. Congress, Office of Technology Assessment, *Environmental Policy Tools: A User’s Guide*, OTA-ENV-634 (Washington, DC: U.S. Government Printing Office, September 1995), at 11, 14-16 (finding that most EPA programs set emission limits derived from what high performing controls can achieve [which it calls “design standards”], and that explicit technology specifications are rarely used), [https://www.princeton.edu/~ota/ns20/alpha\\_f.html](https://www.princeton.edu/~ota/ns20/alpha_f.html); David M. Driesen, *Design, Trading, and Innovation*, in *MOVING TO MARKETS IN ENVIRONMENTAL REGULATION*, 436, 448 (Jody Freeman & Charles D. Kolstad eds., Oxford Univ. Press, 2007) (noting that environmental statutes usually encourage performance standards).

10 Malloy, *supra* note 1, at 345. See also Cary Coglianese & Jennifer Nash, *The Law of the Test: Performance-Based Regulation and Diesel Emissions Control*, 34 *YALE J. ON REG.* 33, 80 (2017) (describing the striking absence of empirical studies on performance standards despite the widespread belief in their superiority, noting that “conventional wisdom’s unbridled enthusiasm for these standards has rested almost exclusively on theory and intuition”); NAS, *supra* note 1, at 4 (noting that claims about advantages and disadvantages of regulatory types are too often anecdotal and that systematic empirical research is lacking); Montgomery, *supra* note 1, at 20 (noting that the lack of broader analyses of the effectiveness of performance standards remains a “gap in the literature”); Driesen, *supra* note 9, at 450 (empirical evidence of emission trading’s superiority in stimulating innovation is “surprisingly thin”).

evidence does not slow them down. One recent paper describes what it characterizes as the five known empirical studies on performance-based regulations, noting that all five found that the studied regulation did not achieve the desired objective. The paper nevertheless concludes with a rousing call for a “more adamant devotion to adopting performance-based standards.”<sup>11</sup> There are not that many market examples for empirical study, but most of the successful ones are limited to air pollution and fisheries.<sup>12</sup> Professors Daniel Cole and Peter Grossman have pointed out that the broad consensus favoring market approaches is based on studies that ignore the full range of costs, and thus provide an insufficient basis to conclude that market approaches are superior.<sup>13</sup>

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11 Montgomery, *supra* note 1, at 34. The authors of this paper include a tiny nod of the head to the contradiction between the evidence and their conclusion by adding the qualifier “where feasible and appropriate,” but this is light ballast for the article’s enthusiastic push for more use of performance standards. Note that a preference for performance-based regulations is enshrined in federal guidelines for writing regulations. See Exec. Order No. 12,866 (1993); OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, OMB CIRCULAR A-4 (2003). See also NAS, *supra* note 1, at 117.

12 Stavins, *supra* note 6, at 35 (noting that the three successes with tradable permits – acid rain, leaded gasoline, and CFCs – involved air pollution and stating that there is almost no evidence in other areas); Tom Tietenberg, *Tradable Permits in Principle and Practice*, in *MOVING TO MARKETS IN ENVIRONMENTAL REGULATION*, 63, 86 (Jody Freeman & Charles D. Kolstad eds., Oxford Univ. Press, 2007).

13 Cole & Grossman, *supra* note 1, at 39.



## Flexibility: a strength and a weakness

The principal theoretical benefit of both performance-based and market strategies is their flexibility; they allow firms to make choices about how best to comply, which can reduce firms' compliance costs, especially when there is a lot of variation among the regulated firms.<sup>14</sup> The intuitive appeal of this perspective has contributed to its widespread adoption. But the same flexibility that holds promise for reducing compliance costs creates additional compliance challenges.

The flexibilities that make these approaches economically attractive can undermine the objective that was the reason for the rule in the first place. One study of the impact of a market strategy for reformulated gasoline illustrates the tradeoffs.<sup>15</sup>

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14 Coglianese, *supra* note 1, at 545; Malloy, *supra* note 1, at 289 (economic efficiency is the most widely used justification for the recommended shift toward alternative regulatory schemes based on market principles). The second most frequently cited rationale for performance standards and market approaches is their theoretical strength at encouraging innovation. This rationale likewise lacks empirical support. See Coglianese, *supra* note 1, at 541-542 (the common understanding that performance standards encourage innovation is not correct); Driesen, *supra* note 9, *passim* (claims that market approaches do a better job than traditional regulations of encouraging innovation lack both theoretical and empirical support); Malloy, *supra* note 1, at 272, 308 (lack of empirical support for claims of economic efficiency and technological innovation).

15 Maximilian Auffhammer & Ryan Kellogg, *Clearing the Air? The Effects of Gasoline Content Regulation on Air Quality*, THE AMERICAN ECONOMIC REVIEW 2687 (October 2011). See also the useful description of this rule, and other fuels requirements, in Joseph E. Aldy, *Promoting Environmental Quality Through Fuels Regulations*, in LESSONS FROM THE CLEAN AIR ACT: BUILDING DURABILITY AND ADAPTABILITY INTO U.S. CLIMATE AND ENERGY POLICY, 159, 161 (Ann Carlson & Dallas Burtraw, eds., Cambridge Univ.

EPA adopted regulations about the volatile organic compound (VOC) content of fuel in an effort to tackle ozone pollution. The rule set a limit on VOC content, but allowed companies to choose how to comply. Companies, not surprisingly, chose their least costly option. Unfortunately, the least costly option also meant that there was no discernable impact on ozone because the VOC companies elected to reduce to meet the standard was not a principal contributor to ozone formation. California, by contrast, adopted a standard that specified which VOCs had to be reduced. That more rigid approach increased the costs of compliance, but it also had a significant benefit in improved air quality.<sup>16</sup> In this case, the more flexible performance approach might have been lower cost, but it did not achieve the desired benefit. The more inflexible California standard had higher costs but got the job done. In the zeal to reduce compliance costs, we should not lose sight of the reason we adopt rules: to achieve an environmental benefit and protect the public.<sup>17</sup> A lower cost, but ineffective, regulation is not a better deal for the public than a strategy that may cost more but produces the necessary results.

One of the main difficulties for both performance

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Press, 2019); Coglianese, *supra* note 1, at 561-62.

16 Auffhammer & Kellogg, *supra* note 15, at 2719-20.

17 See Coglianese, *supra* note 1, at 561 (the federal gasoline standards failed because they gave firms too much flexibility); Kenneth Richards & Josephine van Zeven, *Introduction to Policy Instruments in Environmental Law* 1,7 (Kenneth R. Richards & Josephine van Zeven eds., Edward Elgar Publishing, 2020) (agreeing that a policy instrument's measure of success should be primarily the extent to which it achieves the desired environmental objectives but noting that most of the policy literature focuses on minimizing the cost of compliance).



and market approaches is that they only work if they build in a way to reliably measure performance. That is a problem for all types of regulation, but for rules that specify only ends and not means, measurement of ends is even more important.<sup>18</sup> A rule requiring a specified type of pollution control need only determine if that method is in fact deployed. A rule that sets a pollution standard and leaves it to the regulated to decide on a compliance method requires a way to measure the pollution. Regulations creating tradeable pollution credits won't have a functioning market or achieve the pollution reduction goal unless everyone can count on the fact that the tradable unit reflects an actual reduction in pollution, and you can't know that without measurement.<sup>19</sup>

Reliable pollution measurement is more complicated than many assume. Many companies currently report using emission estimates instead of actual measurement, and often those estimates prove to be wildly inaccurate. For example, EPA found that measured emissions from two refineries' industrial flares were over 20 times higher than the estimate.<sup>20</sup>

The Acid Rain Program — the most touted example of an effective pollution trading program — would not have achieved its 99% compliance rate without continuous emission monitors, and the regulatory provisions that forced companies to use them.<sup>21</sup> Where, when, and how measurement is done matters too; intermittent measurement, or sampling done at locations entirely at the discretion of the regulated, will likely not present an accurate picture of the facts. If a company only measures pollution occasionally, or does it incorrectly, it isn't possible to know what is going on.<sup>22</sup> Measurement regimes also have to include ways to reduce operator error and gaming. What economists politely call “strategic behavior” occurs unfortunately too frequently. As just one example, drinking water operators can, and do, game the monitoring system by taking additional samples to artificially lower the percentage exceeding standards or by sampling where the water is expected to be clean, as a way to avoid triggering

18 See Coglianese, *supra* note 10, at 86 n. 328; Montgomery, *supra* note 1, at 15-16 (also noting that “Measurement may be one area where performance standards suffer by comparison with prescriptive standards”). See also NAS, *supra* note 1, at 105 (noting that for many problems a measure may be difficult to find) and 108 (cautioning about the problem of manipulation of performance metrics).

19 See Cole & Grossman, *supra* note 1, at 36 (noting that the absence of reliable and cost-effective monitoring can be disabling for a market strategy); James Salzman & J. B. Ruhl, ‘No Net Loss’: *Instrument Choice in Wetlands Protection*, in *MOVING TO MARKETS IN ENVIRONMENTAL REGULATION*, 323, 342 (Jody Freeman & Charles D. Kolstad eds., Oxford Univ. Press, 2007) (developing a measure that captures the value of the credit being traded is the “critical first step” in any trading based mechanism).

20 Cynthia Giles, *Part 2: Compliance with Environmental Rules is*

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*Worse Than You Think*, NEXT GENERATION COMPLIANCE: ENVIRONMENTAL REGULATION FOR THE MODERN ERA, at 26 n. 112 (2020), <https://eelp.law.harvard.edu/2020/01/next-generation-compliance-environmental-regulation-for-the-modern-era/>. (field investigations at refineries found that actual emissions were between 4 and 448 times higher than the estimated emissions). Similar violations at multiple refineries led EPA to issue an enforcement alert about the problem. See *EPA Enforcement Targets Flaring Efficiency Violations*, EPA ENFORCEMENT ALERT, EPA 325-F-012-002 (2012), <https://www.epa.gov/sites/production/files/documents/flaringviolations.pdf>.

21 See Cynthia Giles, *Part 1: Rules with Compliance Built In*, NEXT GENERATION COMPLIANCE: ENVIRONMENTAL REGULATION FOR THE MODERN ERA, at 4-7 (2020), <https://eelp.law.harvard.edu/2020/01/next-generation-compliance-environmental-regulation-for-the-modern-era/>. See also text accompanying notes 60 to 64 *infra*.

22 Giles, *Part 2*, *supra* note 20, at 27 and text accompanying notes 115-118.





the obligation to do more to protect drinking water safety.<sup>23</sup>

These monitoring complexities are usually ignored or casually brushed aside by advocates of performance-based and market strategies.<sup>24</sup> The leading scholar on performance standards in environmental rules puts it this way: “It may seem almost a truism to note that performance standards depend on the ability of government agencies to specify, measure, and monitor performance. But it is often not

acknowledged how difficult, if not impossible, it sometimes can be to obtain reliable and appropriate information on performance.”<sup>25</sup> Environmental economists advocating for market approaches typically assume “perfect (and incidentally, costless) monitoring.”<sup>26</sup> Some authors dispatch these challenges by making unrealistic claims that monitoring is easy and cheap.<sup>27</sup>

Many of our existing environmental pollution rules, nearly all of which are performance standards, do not clear the measurement hurdle. They rely on estimates or guesses about pollution. They require only very occasional monitoring or allow the regulated to select a time or place for that monitoring that is most likely to produce a favorable outcome. And they turn a blind eye to evidence that the monitoring data that is submitted doesn’t reflect reality, due to confusion, incompetence, gaming, or flouting of monitoring and reporting requirements.<sup>28</sup>

The good news is that advances in monitoring and information technology hold promise for expanding our monitoring reach. Measurement technologies

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23 See, e.g., *id.* at 26-27 (unreliable air monitoring); Giles, Part 1, *supra* note 21, at 21-24 (unreliable drinking water monitoring). Examples of gaming and even outright fraud in monitoring are legion in environmental rules. See, e.g., *id.* at 20 n. 74 (drinking water); Seema M. Kakade & Matt Haber, *Detecting Corporate Environmental Cheating*, 44 SSRN (April 6, 2020), 47 *EcoLOGY L. Q.* (forthcoming, 2020), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3564797](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3564797) (percentage of ships reporting sulfur levels in their fuel that were incorrect; cheating on records and monitoring in the shipping industry is widespread); Press Release, Department of Justice U.S. Attorney’s Office District of Massachusetts, Western Massachusetts Power Plant Owner and Management Companies Sentenced for Tampering and False Reporting (March 23, 2017), <https://www.justice.gov/usao-ma/pr/western-massachusetts-power-plant-owner-and-management-companies-sentenced-tampering-and>. (criminal prosecution for tampering with air pollution monitoring equipment). Despite this reality, it is common to encounter vague and unsupported assertions that gaming and fraud are rare (see, e.g., Esty, *supra* note 2, at 19) or can readily be solved through higher penalties (see, e.g., Montgomery, *supra* note 1, at 27).

24 Mark A. Cohen & Jay P. Shimshack, *Monitoring, Enforcement, and the Choice of Environmental Policy Instruments*, in *POLICY INSTRUMENTS IN ENVIRONMENTAL LAW* 76, 78 n.14 (Kenneth R. Richards & Josephine van Zeben eds., Edward Elgar Publishing, 2020) (scholars “regularly ignore or assume away monitoring and enforcement issues” when considering the choice of policy instruments). See, e.g., Johnston, *supra* note 1, at 371 (noting only in passing that the effectiveness of market strategies “hinges on” accurate monitoring and effective enforcement, but then quickly moves on as though those precursors can safely be assumed); Stavins, *supra* note 6, at 26 (very briefly noting that market approaches do not eliminate the need for monitoring and enforcement, implying that these activities are outside the scope of instrument choice.)

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25 Coglianese, *supra* note 1, at 558-59.

26 Cole & Grossman, *supra* note 1, at 33 (citing CS Russell, Winston Harrington & William J. Vaughn, *Enforcing Pollution Control Laws*, at 3 (Resources for the Future 1986)). Cole & Grossman also note the “dearth of empirical information on the costs of monitoring under various environmental protection regimes.” *Id.* at 39. A notable exception is Salzman & Ruhl’s excellent analysis of wetlands mitigation banking and how the impossibility of measuring the outcomes we care about doomed that trading program. Salzman and Ruhl, *supra* note 19, *passim*.

27 See, e.g., Esty, *supra* note 2, at 46.

28 See, e.g., Giles Part 2, *supra* note 20, at 21-23 (drinking water), 23-28 (stationary air sources).





are becoming more mobile, smaller, cheaper, and more accurate, making continuous monitoring a possible game changer for some problems.<sup>29</sup> But not all.<sup>30</sup> There are many situations in which reliable, affordable measurement is not possible.<sup>31</sup> The attempt to allow trading in wetlands protection, for example — permitting destruction of wetlands on the desired site in exchange for construction of wetlands elsewhere — is doomed by the impossibility of reliably measuring whether the “new” wetlands actually replace the functions of the wetlands destroyed.<sup>32</sup> If we cannot be sure that the traded

units are equal in value, it doesn’t make sense to have a market.<sup>33</sup> When reliable measurement isn’t possible or feasible, regulators should think twice about performance or market strategies, because without adequate measurement, these strategies will fail.<sup>34</sup>

Increased flexibility for companies from performance standards and market strategies has another effect too: increased costs for government. More variability in companies’ compliance strategies makes it

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29 Cynthia Giles, *Next Generation Compliance*, 45 ENVTL. L. REP. NEWS & ANALYSIS 10205, 10206-10207 (2015). CEMS on ships for example, hold promise for addressing the gigantic but underappreciated impact of pollution from ships that is only recently regulated. See Kakade, *supra* note 23, at 36-52. Lab-on-a-chip technologies could help to solve the difficult problem of rapidly identifying which animal species are contributing pathogens to surface water. See Ning Wang et al, *Optofluidic Technology for Water Quality Monitoring*, 9 MICROMACHINES, No. 4, 158 (2018), <https://www.mdpi.com/2072-666X/9/4/158/htm>. Tracking of emissions from notoriously difficult to measure oil and gas wells might become cost effectively possible through satellites. See Press Release, Environmental Defense Fund, Breakthrough Moment: Satellite Identifies, Measures Methane from Gas Well Blowout (Dec. 16, 2019), <https://www.edf.org/media/breakthrough-moment-satellite-identifies-measures-methane-gas-well-blowout>. See also Al Gore & Gavin McCormick, *We Can Solve the Climate Crisis by Tracing Pollution Back to Its Sources. A New Coalition Will Make It Possible*, MEDIUM (July 15, 2020), <https://medium.com/@algore/we-can-solve-the-climate-crisis-by-tracing-pollution-back-to-its-sources-4f535f91a8dd>.

30 We are nowhere near the monitoring nirvana that some enthusiasts claim. See, e.g., Esty, *supra* note 2, at 46 (asserting that every pollution source no matter the size can be equipped with pollution monitoring devices, so that “market mechanisms are now feasible in almost all pollution contexts”). In reality, monitoring isn’t available or feasible for many environmental problems. Cole & Grossman, *supra* note 1, at 37; Coglianesse, *supra* note 1, at 558-59.

31 See, e.g., *id.* at 558-59; Cole & Grossman, *supra* note 1, at 37.

32 Due to widespread acknowledgement that the wetlands mitigation

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banking program had failed, based in significant part on the impossibility of measurement (see Salzman, *supra* note 19, *passim*), new regulations were adopted in 2008. A 2019 assessment of this newer approach makes clear — even though the EPA authors try to put on a happy face — that it was not successful. Palmer Hough & Rachel Harrington, *Ten Years of the Compensatory Mitigation Rule: Reflections on Progress and Opportunities*, 49 ENVTL. L. REP. NEWS & ANALYSIS 10018 (2019). The assessment identifies two studies of the new wetlands mitigation banking program: one concluding that performance standards set out in site-specific plans were too vague to be meaningful, and the other finding that it is doubtful that there will be adequate long-term funding to ensure the replacement sites are maintained. *Id.* at 10026. Wetlands mitigation banking (and its close cousin, in-lieu fee mitigation) fail on a host of other Next Gen criteria as well. Every wetlands mitigation site is fact- and context-specific, the relevant ecological and technical issues are extremely complex, and government has to be intimately involved at every step. The trading program shifts the compliance obligation away from the entity causing the harm, thereby creating incentives for the regulated parties that are in opposition to the underlying protection goal. The obligation to ensure compliance at every site, in perpetuity, falls to government. Imagine taking all the compliance-defeating elements of coal-fired NSR, adding in a market strategy that makes these problems much worse, then applying them to wetlands protection. Not surprisingly, it isn’t working. See Giles, Part 1, *supra* note 21, at 24-30 (discussing reasons for the compliance breakdown in NSR for coal-fired power plants). Despite that, use of wetlands mitigation banking is increasing. Hough & Harrington, *supra* note 32, at 10025.

33 Salzman, *supra* note 19, at 342.

34 Coglianesse, *supra* note 18, at 86; Cole & Grossman, *supra* note 1, at 36.



harder to have a uniform and simple monitoring and reporting structure. Inspectors will have a more complicated job. And flexibility can introduce a degree of uncertainty and discretion in figuring out compliance, adding confusion, opportunity for strategic evasion, and administrative burden for government.<sup>35</sup> These hidden costs of regulatory structure choices can add up.<sup>36</sup>

The additional burden on government from more flexible standards is usually ignored in the literature that promotes performance standards and market strategies. Only the costs of compliance for the regulated firms count.<sup>37</sup> This myopia is an outgrowth of the widespread but unfounded belief that most companies comply.<sup>38</sup> The assumption — usually

unstated — that compliance with regulations just happens, or that the costs to government of ensuring compliance are the same for every type of rule, creates a powerful bias in favor of performance standards and market strategies.<sup>39</sup> If your desired approach theoretically reduces firms' cost of compliance, and you assume that firm compliance costs are the only way in which regulatory costs vary, why wouldn't you believe that your preferred strategy is always better?

**“The additional burden on government from more flexible standards is usually ignored in the literature that promotes performance standards and market strategies.”**

There are a few encouraging signs that practical considerations, like the feasibility of monitoring and the challenges of ensuring compliance, are starting

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35 See Coglianese, *supra* note 1, at 548-551; Cohen & Shimshack, *supra* note 24, at 80 (noting that monitoring and enforcement may be easier and cheaper with a command and control strategy because compliance is quicker and easier to determine); Cole & Grossman, *supra* note 1, at 33, 34 (pointing out the sizeable differences in measuring or monitoring costs from one environmental protection instrument to another, and noting that it will generally be cheaper for the government to administer uniform standards than economic instruments); Nils Axel Braathen, *Flexibility Mechanisms in Environmental Regulations: Their Use and Impacts*, at 21 (OECD Environment, Working Paper No. 151, 2019) (noting that more flexible regulations can increase government's administrative and enforcement costs).

36 See, e.g., NAS, *supra* note 1, at 100 (describing the challenges of new more flexible rules for offshore drilling that required both additional staff and a change in the type of expertise needed; either the agency revamps its capacity in response to the rule, or the rule will be ineffective). See also discussion at Coglianese, *supra* note 1, at 448-553 (describing how more flexible tools can increase government costs).

37 See Cole & Grossman, *supra* note 1, at 33 (noting that discussions of the choice of instrument for environmental protection have typically focused on which instrument will create the lowest costs of compliance, “as if that were the sole concern”).

38 See Giles, Part 1, *supra* note 21; Giles, Part 2, *supra* note 20;

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Cohen & Shimshack, *supra* note 24, at 78 n. 14 (noting that “the great bulk of the literature on the economics of environmental regulation simply assumes that polluters comply with existing directives”).

39 Cole & Grossman, *supra* note 1, at 35 (noting that many economists employ “simplifying assumptions” about administrative costs that create a strong bias in favor of economic instruments and lead to a presumption that market approaches are always preferable overall, a bias that persists to the present day); Cohen & Shimshack, *supra* note 24, at 78 (noting that ignoring monitoring and enforcement while considering alternative instruments might lead policymakers to choose a policy that ‘in theory’ looks better but in practice has worse environmental or economic outcomes). See also Stavins, *supra* note 6, at 26.



to elbow their way to the policy table. Some scholars acknowledge that in selecting a regulatory approach the full range of costs must be considered, including the reality that more flexibility for the regulated can dramatically increase costs for the regulator. And they are discovering that this more complete analysis can upend traditional wisdom; the theoretically preferable performance standard or market approach can turn out to be both less effective and more costly than the oft-derided command and control.<sup>40</sup>

However, even the few policy scholars who acknowledge that infeasibility and inefficiency can make performance standards or market strategies unworkable, go astray by adopting the universally assumed and nearly always wrong premise that compliance issues are solely the responsibility of enforcement.<sup>41</sup>

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40 Cole & Grossman, *supra* note 1 (market instruments can turn out to be less efficient than command and control alternatives when the limits of monitoring and the cost of ensuring compliance are included); Coglianese, *supra* note 1, at 547-552; Cohen & Shimshack, *supra* note 24, at 78. See also Winston Harrington & Richard D. Morgenstern, *Economic Incentives Versus Command and Control: What's the Best Approach for Solving Environmental Problems?* (Jan. 2007) (comparison of economic instruments with comparable command and control regulations, finding no clear differences in regulatory outcomes), [https://www.researchgate.net/publication/226525328\\_Economic\\_Incentives\\_Versus\\_Command\\_and\\_Control\\_What's\\_the\\_Best\\_Approach\\_for\\_Solving\\_Environmental\\_Problems/citation/download](https://www.researchgate.net/publication/226525328_Economic_Incentives_Versus_Command_and_Control_What's_the_Best_Approach_for_Solving_Environmental_Problems/citation/download).

41 See, e.g., Freeman, *supra* note 1, at 7; Coglianese, *supra* note 1, *passim*; Cole & Grossman, *supra* note 1 at 33, 36; Cohen & Shimshack, *supra* note 24, at 79; NAS, *supra* note 1, at 97. Although these scholars are ahead of the pack because they at least grapple with the often-ignored reality that poor compliance will undermine the goals of the regulation, they still look to enforcement to solve compliance problems. The belief that compliance is the job of enforcers is ubiquitous in the environmental policy literature. See Cynthia Giles, *Introduction*, *Next*

For all the reasons discussed at length in Part 1 of this series, enforcement will never be able to assure widespread compliance for rules that create many ways around compliance; without strong rule design that makes compliance the path of least resistance, the compliance effort is doomed no matter what enforcement does. Because these scholars start from the enforcement-is-responsible assumption, the compliance costs they consider are monitoring and enforcement costs. That is a significant improvement over the vast majority, who just pretend there are no government costs. But it falls short of the insight that enforcement alone can't do it; compliance drivers need to be built into the rules, not stapled on at the back end.

Nor will the suggested solution solve the problem. Some of these scholars argue that rules should consider total costs — not just costs for regulated firms — and therefore advocate that government costs like monitoring and enforcement be added to the cost-benefit analysis. In this telling, the additional expense for government of more complicated monitoring and more difficult enforcement should be added to the tally sheet before deciding which approach is most efficient.<sup>42</sup> Again, this is a notable advance over paying no attention to implementation costs, but still ignores hard reality: government isn't going to significantly increase expenditures to implement a complicated performance or market

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GENERATION COMPLIANCE: ENVIRONMENTAL REGULATION FOR THE MODERN ERA (2020), <https://eelp.law.harvard.edu/2020/01/next-generation-compliance-environmental-regulation-for-the-modern-era/>.

42 Coglianese, *supra* note 1, at 449-450; Cole & Grossman, *supra* note 1, at 33, 35, 39.



rule. In the theoretical world of cost-benefit analysis, policy advocates may think they solve the problem by adding the additional government costs to the hypothetical balance sheet. But back in the real world, budgets don't depend on cost-benefit analysis. The agency has its allocated budget and that's it. Hundreds of rules compete for implementation attention. If the new rule is by far the most important thing happening in the agency, you have a chance. Otherwise, no way.

**“An approach that would work great if only government had a 200% increase in resources doesn't make practical sense.”**

What really happens is government doesn't have the resources to take on these more complex tasks and so it just doesn't do the additional work to assure that the standards are met, and the public health objectives achieved. In that situation — unfortunately too common — government doesn't know if the regulation has achieved its purpose.<sup>43</sup> This reality needs to be part of regulatory design. An approach that would work great if only government had a 200% increase in resources doesn't make practical sense.

This Next Gen series argues that the response to this costs dilemma is not to throw our hands in the

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43 Giles, Part 2, *supra* note 20, at 13-21. See also Tietenberg, *supra* note 12, at 71, n. 10 (noncompliance not only makes it more difficult to reach stated goals, it sometimes makes it more difficult to know whether the goals are being met).

air and give up. On the contrary. When we accept that it is rule design — not primarily enforcement — that determines compliance outcome, we are freed from the paralyzing expense of depending on enforcement to force fit compliance on millions of regulated sources. Where we stand today is between a rock (widespread violations) and a hard place (fixing noncompliance primarily through enforcement is ludicrously unaffordable).<sup>44</sup> Fortunately, Next Gen says there is another way. Everyone would like to use performance standards and market strategies — when they are the best fit for the problem — despite their additional complexity. The answer isn't to adopt the often-favored approach of pretending that the additional complexity doesn't exist. Instead, we should apply the principles of Next Gen to see if the complexity and compliance problems are solvable, at a reasonable cost, by building compliance drivers into the rule.

## Market strategies face additional challenges

Market strategies face all of the implementation hurdles that other regulations do. But market mechanisms also have additional challenges.<sup>45</sup> The need for certainty about performance is more acute. If the market can't be sure that a ton equals

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44 This isn't the result of recent budget cuts. Those cuts have hurt, but enforcement resources have never been, and will never be, large enough to be the principal means of ensuring compliance. Nor is it desirable to aspire to that. We can't, and shouldn't strive to, achieve widespread compliance by millions of regulated sources using exclusively our most expensive tool.

45 See also Ackerman, *supra* note 1.



a ton, the market won't serve its function and can't be counted on to produce the desired pollution outcome.<sup>46</sup> It is very hard to parse this in a market once it is launched, so spending time and money to get verification correct up front is even more important for market mechanisms than it is for other approaches.

Getting markets right takes more effort than traditional rules, not less.<sup>47</sup> Markets that push toward, and not against, the environmental or health objective aren't formed by setting a price; they are crafted through conscientious and thoughtful rule design. An effective system for trading pollution credits has to pay careful attention to defining what is traded and by whom; how that will be monitored; what quality assurance obligations the parties have and how those will be verified; where the trades will occur and who will authenticate and administer the trades; what price collars are needed, if any; how firms will report; how the necessary information will be made publicly available; how gaming, mistakes, incompetence, and fraud will be prevented and dangerous hot spots avoided; how violations will be detected; and what the consequences of violations will be. These are just a few of the elements of a successful trading program.

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46 See, e.g., Driesen, *supra* note 9, at 449 (noting that trading relies on good monitoring and that “when good measurement proves impossible, trading will not succeed”). The Renewable Fuels Standard market trading program, for example, has been plagued by fraud, undermining confidence in the market and provoking persistent political turmoil. See e.g., Press Release, Department of Justice, Houston Man Sentenced to More Than 10 Years in Prison for Biodiesel Fraud Scheme (March 7, 2016), <https://www.justice.gov/opa/pr/houston-man-sentenced-more-10-years-prison-biodiesel-fraud-scheme>.

47 See Freeman, *supra* note 1, at 14.

For most environmental problems, setting up a market will be considerably more complicated than it was in the Acid Rain Program, which benefited from the small number, homogeneity, and sophistication of the regulated coal-fired power plants.<sup>48</sup> Fees and taxes are similarly complex; take a look at the tax code if you think taxes are simple to define and administer. And that doesn't even begin to cover the ongoing oversight that is an essential component of any market approach. The idea that government just sets a price and then its work is done is way off the mark.<sup>49</sup>

## “Getting markets right takes more effort than traditional rules, not less.”

A market strategy also requires political backbone. The whole concept of a market approach is letting the market shake out the best and cheapest way to

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48 Even the comparatively straightforward monitoring and reporting system set up by the Acid Rain Program was complicated; it required hundreds of pages of guidance, as one indicator of complexity. See Giles, Part 1, *supra* note 21, at 5, n.3.

49 Hsu, *supra* note 1, at 184 (economic theory would de-emphasize the traditional mode of regulation; what would be left for governmental mandate would be the level of the tax, or the quantity of allowable pollution that could be traded); Esty, *supra* note 2, at 46 (government would have to do the analysis to set a price but then would be able to “get out of” the time-intensive and expensive regulatory requirements of the old command-and-control regime). For a comprehensive assessment of the factors that should be considered in constructing a cap and trade market, based on experience with the Acid Rain Program, see John Schackenberg, et al., *Fundamentals of Successful Monitoring, Reporting, and Verification under a Cap-and-Trade Program*, 56 J. OF THE AIR & WASTE MGMT. ASS'N. 1576 (2006).



get the desired outcome. Markets need certainty and predictability to do that. Having set up the design and the structure of the market, government needs to get out of the way and let the market function. If government intervenes to protect individual market participants in response to their pleas for special treatment, or changes the targets midstream, it works against market principles. When government loses its nerve in this way, it does more damage to program integrity than occurs when these choices are made in a more conventional permit situation.<sup>50</sup>

**“[M]arkets are often bad at addressing fairness and distributional effects. Markets don’t care about those things, but government should.”**

And markets are often bad at addressing fairness and distributional effects. Markets don’t care about

those things, but government should.<sup>51</sup> Efficiency is good, but a market-based regulation has to address equity as well. Transferring pollution or risk from one place to another through market trading can end up shifting health threats also. That’s what happened in the Acid Rain Program, for example, where emissions trading caused huge public health damages by moving pollution from low- to high-density population centers.<sup>52</sup> The current pandemic is underscoring just how deadly these disparities are, as communities of color suffer far worse COVID-19 outcomes stemming in part from the historic inequity of disproportionate exposure to air pollution.<sup>53</sup> Allowing firms to pay to take big risks with people’s health is not an acceptable outcome. If a market can’t be designed to address environmental justice issues, that is telling you that a market isn’t the right approach.

Cheerleading for performance standards and market strategies suffers from another blind spot too: a near exclusive focus on permitted air and water pollution discharges. Reading the literature, you might get the

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50 As one example, the renewable fuels program attempted to place the burden of verifying credit integrity on the refineries that purchased credits. It included a “buyer beware” fail safe mechanism; if refiners decided to reduce costs by not checking on the integrity of the credits they purchased, they would bear the financial consequences should the credits turn out to be invalid. That was a great market-embracing idea, but when push came to shove it proved to be politically untenable. Purchasers failed to police the market as the rule envisioned but didn’t end up paying the full price as the market strategy had intended. This outcome will make future rule writers understandably more cautious about fully embracing financial drivers as a compliance mechanism. See also Bradley C. Karkkainen, *Information as Environmental Regulation: TRI and Performance Benchmarking, Precursor to a New Paradigm?*, 89 GEO. L. J. 257, 278 (2001) (noting that post hoc adjustments may be destabilizing to markets).

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51 See Suryapratim Roy, *Distributional Concerns in Environmental Policy Instruments*, in POLICY INSTRUMENTS IN ENVIRONMENTAL LAW 56, 61 (Kenneth R. Richards & Josephine van Zeben eds., Edward Elgar Publishing, 2020), which underscores the essential and often overlooked point that environmental justice includes the equal distribution of both costs and benefits.

52 Chan, H. et al., *The Impact of Trading on the Costs and Benefits of the Acid Rain Program*, at 4 (Resources for the Future Discussion Paper, RFF DP 15-25-REV, 2017), <https://www.rff.org/publications/working-papers/the-impact-of-trading-on-the-costs-and-benefits-of-the-acid-rain-program/>. (the trading mechanism caused public health damages of \$2.4 billion more than would have occurred had the same program been implemented without trading).

53 Lisa Friedman & Zoë Schlanger, *Race, Pollution and the Coronavirus*, NEW YORK TIMES (April 8, 2020), <https://www.nytimes.com/2020/04/08/climate/coronavirus-pollution-race.html>.





impression those are the only kinds of environmental regulations there are.<sup>54</sup> Rarely does one see these theories applied to other important public health programs, like limiting exposure to lead paint and asbestos, ensuring safe disposal of hazardous waste, reducing harm from pesticide applications, preventing accidental chemical releases, requiring chemical manufacturers to disclose adverse health studies, avoiding leaks from underground storage tanks, notifying citizens about drinking water contamination, or preventing the use of dangerous chemicals, to name just some examples. There are scores of important environmental and health protection programs that present design challenges vastly different from those faced in regulation of point sources of air and water pollution. It isn't possible to claim universal superiority of regulatory strategies without grappling with the breadth and diversity of public health programs that require regulation.

## The resurrection of command and control

Just as it doesn't make sense to tout performance standards and market strategies as the solution to all problems, it is equally mindless to broadly condemn command and control. All regulations of every stripe are command (the regulation mandates something) and control (regulators will use their authority to make you). Regulations using a market

approach also require command and control. If they don't, why is a regulation needed? The differences among regulations are in how the regulatory mandates are deployed.

**“Just as it doesn't make sense to tout performance standards and market strategies as the solution to all problems, it is equally mindless to broadly condemn command and control.”**

The phrase command and control has ceased to convey any substantive meaning; it is used more like an all-purpose curse to deride anything the author does not like.<sup>55</sup> Professors Ackerman and Stewart piled on by comparing most EPA regulatory strategies to “Soviet-style central planning.”<sup>56</sup> There is even a theory of environmental governance, with its own

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54 A notable and refreshing exception to the rule is the insightful report from the NAS, which explores the challenges of instrument choice in the context of pipeline and offshore oil and gas safety. NAS, *supra* note 1, *passim*.

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55 See NAS, *supra* note 1, at 16 (noting that “command-and-control” and related terms almost always have negative connotations); Coglianese, *supra* note 18, at 39, n. 14 (noting that command and control is rarely used approvingly and is almost always used to distinguish the writer's own preferred approach from disparaged alternatives); Esty, *supra* note 2, at 4 (stating that command and control is an outdated regulatory model that no longer fits our current requirements); Cole, *supra* note 2, at 159 (command and control used as a term of derogation). I appreciate Professor Cole's stated preference for using the term command and control without the usual prejudice that accompanies it.

56 Bruce A. Ackerman & Richard B. Stewart, *Reforming Environmental Law*, 37 STAN. L. REV. 1333, 1334 (1985).





acronym and everything, called — I kid you not — “The Pathology of Command and Control (TPCC).”<sup>57</sup> All this name calling is to the detriment of thoughtful discussion. Throwing the term around with abandon relieves people of having to say what they mean. Is the particular problem under discussion not suited to a uniform requirement for all regulated firms? Then say that and explain why. If we refuse to accept a disparaging label as though it were evidence, we will force people to articulate their actual objections and not allow them to hide behind what amounts to no more than saying something is bad.<sup>58</sup> That level of vague generality shouldn’t pass muster in serious debate.<sup>59</sup>

The command and control label also makes it harder to build Next Gen ideas into rules. Rules that work use command and control creatively, to smooth the path to compliance and block the violation exits. Instead of scoffing at the very idea of command and control, we need to focus on using it better.

Many learned the wrong lesson from the Acid Rain Program. That misunderstanding has had an outsized influence because of the Acid Rain Program’s central role in the markets-are-the answer

narrative.<sup>60</sup> It is true that the Acid Rain Program had remarkably high compliance rates and therefore achieved its pollution reduction goals. But the market provisions had nothing to do with that. Take away cap and trade, and the compliance outcome would have been the same.

**“All this name calling is to the detriment of thoughtful discussion.”**

The reason is command and control. The Acid Rain Program did a masterful job at creating an interlocking set of mandates that made it unlikely regulated plants would violate. The actual amount of pollution was measured in real time through required continuous emission monitors (CEMS). Plants were forced to maintain the CEMS to exacting and very detailed quality standards, because if they didn’t, the mandated data substitution provisions would cost them a lot of money, and those increased costs would happen automatically without the need for any government intervention. Every regulated facility had to report frequently, electronically, and in a mandated format to a centralized data system. The data were made available to the public, so there was nowhere to hide. The mandatory

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57 See Michael Cox, *The Pathology of Command and Control: A Formal Synthesis*, 21 *ECOLOGY AND SOCIETY* (Sept 2016), at 33.

58 Succeeding in getting the derogatory term command and control so widely accepted has been described as a “semantic triumph” for the advocates of market mechanisms. Freeman, *supra* note 1, at 4.

59 See Driesen, *supra* note 9, at 447 (“Most analysts employ a simplistic command-and-control/economic incentive dichotomy as a substitute for cogent analysis”), and at 456 (“The literature’s preoccupation with a simplistic and misleading command-and-control/economic incentive dichotomy has led to a failure to adequately address crucial design issues”).

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60 Two scholars described the general overreading of the Acid Rain Program by saying it led to “...the presumption that if cap-and-trade can work for sulfur dioxide emissions from power plants in the United States, and for fisheries in many locations, then the mechanism can work equally well anywhere in the world to reduce any kind of pollution, from any kind of sources.” Cole & Grossman, *supra* note 1, at 38. See also Braathen, *supra* note 35, at 18.



centralized electronic reporting in a required format made it comparatively easy for EPA to employ data analytics to spot any anomalies and then challenge companies to explain themselves. All the monitoring and reporting complexity was simplified in the compliance determination: do you have the permitted authority to emit the tons you reported, yes or no? If not, you automatically owed penalties that were more expensive than just complying.<sup>61</sup> These interconnected provisions created a resilient structure that made complying cheaper and less hassle than violating; in other words, a rule with compliance built in.<sup>62</sup>

These are all classic command and control/one-size-fits-all/prescriptive/(insert your favorite term here) requirements. The Acid Rain Program didn't get terrific compliance as a result of the mythical properties of markets; it accomplished that impressive outcome because tough, prescriptive rule design gave the regulated utilities no way out. It was a triumph of command and control. These command and control elements don't make the rule bad; they make it effective. They are what was necessary to get the emissions reductions and create a functioning market. The market intended to reduce costs would

never have gotten off the ground without them.<sup>63</sup>

What we should learn from the Acid Rain Program is that careful program design that uses the power of command and control to make compliance the default — i.e., Next Gen — works. And that interlocking commands can build a strong foundation for a market that helps to reduce costs. There is no intellectual coherence in praising environmental markets and bashing command and control. As the Acid Rain Program so powerfully demonstrates, the success of markets depends on skillful use of command and control.

There is another reason we should be cautious about using the Acid Rain Program as an all-purpose illustration of the universal utility of markets in environmental rules: the coal-fired power sector was unusually small, homogeneous, well-financed, and sophisticated. Those features, which most other environmental programs do not share, made the tightly designed command and control structure possible. A single-purpose monitoring technology was available and would work for every company. The companies had the money and the technical sophistication to run the monitoring, install and operate pollution controls, and report extensive

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61 Some have attributed the high compliance rates in the Acid Rain Program primarily to high penalties. See, e.g., Stavins, *supra* note 6, at 26; Tietenberg, *supra* note 12, at 72. That is the enforcement-sanctions-are-the-reason-for-compliance belief rearing its head again. The penalties in the Acid Rain Program helped — both because they were high and because they were automatic (no waiting to get caught and litigating for years) — but high penalties alone would not have achieved widespread compliance without all of the other compliance-forcing mandates.

62 See discussion in Giles, Part 1, *supra* note 21, at 4-7.

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63 Cutting costs of compliance was the central rationale for the cap and trade program, and it did help reduce firms' compliance costs, although not nearly as much as was predicted. Chan, *supra* note 52, at 4; Nathaniel O. Keohane, *Cost Savings from Allowance Trading in the 1990 Clean Air Act: Estimates from a Choice-Based Model*, in *MOVING TO MARKETS IN ENVIRONMENTAL REGULATION*, 194, 224 (Jody Freeman & Charles D. Kolstad eds., Oxford Univ. Press, 2007). Cap and trade may have played an important political role too. See Braathen, *supra* note 35, at 18, n. 13 (noting that Congress might not have agreed to the large emission reductions in the Acid Rain Program without the cost reductions that were envisioned by the trading system); Johnston, *supra* note 1, at 373.



data electronically. The data was uniform and easily analyzed. Very few of the programs EPA runs have these advantages. Compare the less than 4,000 similar coal-fired units covered by the Acid Rain Program to the hundreds of thousands of varied industrial and construction stormwater facilities that contribute to serious water pollution, or the over three million facilities in diverse industries regulated under the laws that regulate the manufacture, use, and distribution of chemicals, and you begin to appreciate the entirely different scale and complexity that most programs confront.<sup>64</sup>

**“Sometimes a one-size-fits-all mandate is the most effective way to get the job done.”**

That scale and complexity drive a need for more creative compliance strategies, but also mean that some approaches will not get us there. When performance measurement is impossible or unaffordable, or the health imperative can't be squared with the potential for creating hot spots,

or increased flexibility for thousands of different types of facilities creates compliance loopholes that are technically or politically impossible to close, performance standards and market strategies won't work. Sometimes a straight-ahead ban is the only way to reliably protect the public. Sometimes a one-size-fits-all mandate is the most effective way to get the job done. That was the case for controls on sewage discharges; the flexible outcome-driven strategy favored by many economists as more efficient completely failed in the face of political opposition and technical overload. It took a uniform and inflexible directive to accomplish the goal of cutting sewage pollution.<sup>65</sup>

Blanket criticism of command and control and uncritical promotion of performance standards and market strategies get in the way of creativity and innovation in governance. Yes, we need regulators to get out of a rut that generally ignores how well a rule will function in the world. But the *idée fixe* that performance standards or markets are the solution to all problems is no better. We should be expanding our understanding of the available tools, not narrowing our focus to a small number of presumptively favored approaches.

Part of tearing down the ideological barriers to Next Gen in rule design is avoiding the tendency to want to cram every rule into a single category. Those classifications lead to sometimes profound misunderstanding. The Acid Rain Program employed both command and control and a cap and trade market. Labeling this a “market” rule obscures the

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64 See *Stormwater Discharges from Industrial Activities*, EPA, <https://www.epa.gov/npdes/stormwater-discharges-industrial-activities> (last visited July 23, 2020) (listing eleven categories including over 25 disparate industrial classifications that are covered by industrial stormwater obligations); EPA NPDES E-reporting Rule, Final Rule, 80 Fed. Reg. 64063, 64068, 64081 (October 22, 2015) (noting that there are about 350,000 facilities a year regulated under stormwater regulations); EPA OIG, LIMITED KNOWLEDGE OF THE UNIVERSE OF REGULATIONS ENTITIES IMPEDES EPA'S ABILITY TO DEMONSTRATE CHANGES IN REGULATORY COMPLIANCE 24 (Sept. 2005), <https://www.epa.gov/sites/production/files/2015-11/documents/20050919-2005-p-00024.pdf> (size of TSCA regulated universe).

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65 See Giles, Part 1, *supra* note 21, at 7-11 (discussion of secondary treatment for sewage treatment plants).



essential role of creative command and control, and creates the dangerous illusion that the Acid Rain Program stands for the proposition that markets by themselves achieve pollution reduction goals. Without the foundation of skillful command and control, you won't have a functioning market. Almost no regulation uses just one strategy. If a firm is required to maintain financial assurance of a particular amount to protect against future clean-up costs, and can select among five different financial instruments to satisfy that obligation, is the rule prescriptive or performance-based? If a rule mandates the installation of a specified monitoring technology and requires every company to calculate missing data using a predetermined formula and to report using the identical form, but allows trading of credits, is that rule market-based or one-size-fits-all? To which I say: who cares? Our goal isn't fighting over label primacy; it is the more exacting practice of building a strong and resilient structure by creatively using all the tools.

What matters is designing a rule that fits the problem. We need to select strategies that will address the issue and build a structure that makes those strategies effective. Every rule includes a wide variety of mandates, including who it applies to, what they are supposed to do, how they are supposed to determine compliance and document what they do, how they report, and provisions to address the different circumstances and exceptions that arise in the real world. Every rule. This structure of mandates is the foundation for rule success. Regulations will all include commands by any definition of the word. The question is whether those commands are deftly used to ensure that the rule is effective in actual life, and not just in theory. Command and control can be

used to impose uniform standards, create markets, establish information reporting obligations, deploy transparency systems and scores of other strategies. The key issue isn't how the rule is labeled; it's whether it uses the many available tools of every type to achieve the goal: achieve widespread compliance, at reasonable cost.

Performance standards and market strategies have promise to help tackle environmental issues. But they don't have magical powers and they are not the right fit for every problem. When performance standards or market strategies make sense, good compliance design is still essential, which will necessarily include — prepare to be shocked — command and control.

[For the rest of this series, click here.](#)

#### **AUTHOR BIO**

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#### **AUTHOR NOTES**

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