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Next Generation Compliance:

Environmental Regulation for the Modern Era

Introduction

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Introduction

Senior environmental officials at both the state and federal level often give the public the same reassurance about environmental compliance.

Almost all companies comply, they say. The large companies comply; it is mainly the small ones that have compliance issues. Does the evidence agree?

In a word: no.

The data reveal that for most rules the rate of serious noncompliance – the violations that pose the biggest risks to public health and the environment – is 25% or more. For many rules with big health consequences the serious noncompliance rates for large facilities are 50% to 70% or even higher. And those are just the ones we know about; for many rules the U.S. Environmental Protection Agency (EPA) has no idea what the rate of noncompliance is.

These rampant violations have real consequences: areas of the country that are not achieving air pollution standards, impaired water quality for half of the nation's rivers and streams, contaminated drinking water, public exposure to dangerous chemicals, and avoidable environmental catastrophes with health, ecological and economic damages.

When the public expresses outrage about serious environmental violations, all eyes turn to enforcement. We need more enforcement. Smarter enforcement. Tougher enforcement. It is taken as given that compliance is the job of enforcement, so if there are violations then enforcers need to up their game. This perspective – held by most environmental policy practitioners, including government regulators, regulated companies, legislators, academics, and advocates – assumes compliance happens after environmental rules are written. If only we had the right combination of inspections, assistance and enforcement, we would achieve the goal of widespread compliance.

This is the wrong way around. By far the most important driver of compliance results is the structure of the rule itself. A well-designed rule that makes the most of creative strategies to set compliance as the default can produce excellent compliance rates with very little enforcement involvement. Poorly designed rules that create opportunities to evade, obfuscate, or ignore will have dismal performance records that no amount of enforcement will ever fix. Compliance isn't consistently achieved by force fitting it on the back end; it results from careful design up front.

This Introduction launches a series of articles that describe Next Generation Compliance. Next Gen turns conventional wisdom on its head by insisting that we can achieve much better compliance only if we acknowledge that compliance outcomes are controlled by rule design. If we wait until after a rule is written to try to insist on compliance, as the traditional paradigm has us do, we will continue to suffer from pervasive violations. Robust enforcement



is an essential part of any compliance program, but it can't close the giant gap created by a poorly designed rule.

The ideas of Next Gen are based on my decades of experience in environmental protection, including eight years as the Senate-confirmed head of the Office of Enforcement and Compliance Assurance at the US Environmental Protection Agency (EPA) from 2009 to 2017 under President Obama. In this role I was responsible for enforcement of all federal environmental laws. Earlier in my career I prosecuted civil violations of federal environmental laws as an Assistant United States Attorney and led the enforcement office for EPA Region 3, serving Delaware, the District of Columbia, Maryland, Pennsylvania, Virginia, and West Virginia. I also ran the water protection office for the Commonwealth of Massachusetts and just prior to my nomination by President Obama I was an environmental advocate seeking changes in state laws and regulations to address climate change. I have been in the trenches and I have been at the highest levels of policy. I have served at the local, state, and federal levels of government and in the private sector. My experience is both broad and deep.

In every one of these positions I observed a huge gap between the commonly assumed levels of compliance and the extensive violations that we routinely found in the field. I was determined to understand the persistent mismatch between what most people believed and what I saw on the ground.

I discovered that comprehensive evidence supports what I had anecdotally observed over decades of experience: significant violations are far more prevalent than everyone thinks. Strong national

compliance records are the exception, not the rule. The violations are serious with real consequences for people's health. And that's just for the programs where EPA has data. For far too many programs EPA doesn't know what the national compliance picture is, but there is ample reason to think it is probably bad.

I learned that many policy makers do not see the evidence in front of them – about the widespread violations or the reasons for them – because those facts don't align with ideas that have governed environmental strategy for decades. Long-held assumptions, some of which are enshrined in policy, are blinding us to the facts. The belief that most companies comply, and that noncompliance should be left to enforcers, has been stubbornly persistent, despite the reality that serious violations are common, and the design of the environmental rules themselves is the main driver of good, or bad, performance.

EPA under President Obama was starting the shift toward Next Gen. Although some modest innovations have survived, movement toward the necessary transformation has been pushed aside by the Trump EPA's single-minded focus on deregulation. Noncompliance will only get worse as the current administration loosens regulatory standards and pulls back on enforcement.

Why Compliance Matters

Although federal environmental laws differ in approach, they have something in common: all force change through compliance obligations. Congress sets broad goals and EPA's regulations translate



them into actions required by facilities. Through regulations the general becomes specific: how much pollution from the individual regulated facilities is allowed? What actions are the regulated facilities required to take or avoid taking?

“Rules are just words on a page unless they cause action. This is compliance: do rules result in the necessary action in the real world?”

Compliance is where the rubber meets the road. We only get public health benefits from our laws and regulations when the regulated companies do what the rules require. When they take steps to control pollution, or conduct the required monitoring, or implement process controls to reduce the risk of catastrophic releases, the standards in the rules translate to real protection on the ground. Rules are just words on a page unless they cause action. This is compliance: do rules result in the necessary action in the real world?

Environmental practitioners know that compliance is not an all or nothing proposition. Some firms completely ignore or deliberately evade the rules, but it is also very common to find companies that partially comply or take steps to comply that don't work. They install pollution controls but then don't operate them properly or they take unreasonable risks. These failures can lead to pollution that is many times the levels that are allowed. Neighboring communities, and sometimes people hundreds of

miles downwind or downstream, bear the burden.

Some rules don't just limit how much pollution can be emitted; they aim to prevent releases altogether. The regulations concerning hazardous waste, for example, define how that waste is to be stored, handled, transported, and disposed, all with a goal of preventing it from ever being released into the environment. If a company violates one of those work practice standards – by storing the waste in unstable conditions or using a trucking company not licensed to haul that waste – it makes a future release more likely. Sometimes we get lucky, and even though the rules were violated, no one is harmed. Other times it can go disastrously awry. An unlicensed pesticide applicator uses a pesticide too close to a home and injures or kills people. Or a pipe explodes, and oil or chemicals contaminate the neighboring community. When these incidents occur, the investigation nearly always reveals that the company failed to take the preventive measures required by law, i.e., there was a violation. No one can predict which violation will combine with bad circumstances to cause real harm, so it is important to protect people from that risk by insisting on compliance with prevention requirements.¹

1 Here are a few examples of preventive obligation violations that led to disaster: a huge chemical spill into Charleston, West Virginia's primary source of drinking water, shutting it down for days, after Freedom Industries failed to inspect and repair corroding tanks and containment walls; a family of four poisoned after a chemical banned for indoor applications was used by Terminix to fumigate residential units; one person killed and multiple injured after Tyson Foods failed to implement required risk management procedures, resulting in releases of the dangerous chemical anhydrous ammonia into the air.



It's not just pollution violations that matter. The rules also impose obligations to monitor and to report. When companies don't check their pollution or their compliance, or don't report as required, regulators don't know about potentially serious problems. If a company seeking approval of a chemical doesn't reveal a negative health study, a dangerous chemical might be mistakenly approved. If your drinking water provider isn't checking to see if the water you drink is contaminated before sending it to your home, you probably would not dismiss that as a minor problem.

“The impact of compliance failures isn't equal; it falls disproportionately on people already overburdened by pollution.”

For all these reasons the success of laws that protect the health of people across the country depends on companies doing what they are supposed to do. If every facility is meeting its obligations and following the rules, we have a good chance of achieving clean air and water and reducing our risk of exposure. If they aren't, we don't.

The impact of compliance failures isn't equal; it falls disproportionately on people already overburdened by pollution. Low income and minority neighborhoods not only suffer from more contamination, they also face lower quality housing and a disparity in access to healthcare that makes protecting their families more difficult. Violations are concerning no matter where they happen, but they are an even

bigger problem for people in environmental justice communities who already face greater health risks from pollution.

There is no question that the laws and regulations to date have made a huge difference. Our air and water are much cleaner, and our environment better protected than when EPA was created 50 years ago. Gone are the days when rivers caught on fire and air pollution was so thick you couldn't see to the end of the block. Federal laws, like the Clean Air and Clean Water Acts, and the regulations that followed, have dramatically reduced pollution.

Public outrage has propelled progress so far, and the public continues to insist on strong pollution controls. Polls consistently show that over 70% of Americans, including a majority of Republicans, favor tougher pollution standards for business and industry and more stringent enforcement of environmental laws.²

The drop in pollution and the strong public demand for environmental protection are impressive national achievements. Yet for all the improvement, progress on the ground is falling far short of where it needs to be. Widespread violations, including many with serious and proven impacts on health, occur across pollution-control programs. Some of the violations have proven tenaciously resistant to change and are interfering with our ability to achieve the health

² A 2018 Gallup poll found that 74% of Americans favor setting higher emissions and pollution standards for business and industry (61% Republicans, 84% Democrats) and 73% of Americans favor more strongly enforcing federal environmental regulations (51% Republicans, 89% Democrats). See Frank Newport, *Americans Want Government to Do More on Environment*, GALLUP (Mar. 29, 2018), <https://news.gallup.com/poll/232007/americans-want-government-more-environment.aspx>.



protections in our environmental laws. For some entrenched problems regulators know outcomes need to improve but there is no apparent way, using traditional tools, to make that happen.

The Next Gen Series

Following this introduction are articles that explore Next Gen in depth. In a seven-part series I will present the evidence for the necessary paradigm shift, discuss some of the biggest barriers, and outline strategies to get there from here.

PART 1: RULES WITH COMPLIANCE BUILT IN

The thesis of Next Gen is that there is a way to improve compliance significantly, but it requires us to jettison a central assumption that has persisted for decades. The assumption is that regulations set standards and it is the job of enforcers to come in behind the regulations and make it happen. That compliance is the job of enforcers and not rule writers is so deeply ingrained that most people don't even recognize they are adopting that paradigm. It's just the way things are.

In reality, the most important determinant of compliance is the structure of the regulation and the extent to which it adopts – or ignores – strategies to make compliance the default. How you write the rule makes all the difference. A robust enforcement program will always be needed. Some problems can only be solved in that way. But enforcement alone will never get us there.

One of the reasons we get bogged down and people resist even starting this discussion is the morality frame that many adopt in discussing compliance.

Yes, there are definitely bad guys who knowingly commit crimes and endanger people; our obligation in rules is to be open-eyed about that and not make criminal acts easy to do or get away with. But often there is no one actively deciding to violate, just a series of ill-advised choices, or failures to choose, that result in a serious violation. People who try to characterize this as either “companies want to do the right thing” or “companies put profits above people” create barriers to solutions by putting a moral frame around what is actually just a practical issue. When government decides to make things happen, or not happen, to protect the public, it is on government to design the rule to make it more likely we achieve the goal. That's it. Some rules do that. Most don't.

“In reality, the most important determinant of compliance is the structure of the regulation and the extent to which it adopts – or ignores – strategies to make compliance the default.”

The difference that good rule design makes is evident in a comparison of two rules, both of which regulated air emissions from coal-fired power plants, but with vastly different results. Nearly all coal-fired power plants complied with the Acid Rain Program, designed to reduce sulfur dioxide emissions causing acid rain in wide swaths of the United States. Over 70% of largest coal-fired power plant operators had serious violations of New Source Review, which



requires modern pollution controls when the plants upgraded. Why the big disparity?

The Acid Rain Program is a master class in good design. It required continuous monitoring so that everyone knew exactly how much pollution there was. It contained incentives for making sure the monitors were operating properly. All results had to be electronically reported to a central database. It was easy for regulators to determine if a facility complied: just compare the number of tons emitted to the number of allowances the company held. Automatic penalties made compliance the cheaper option. Attempting to avoid the obligations was likely to be both more hassle and more expensive than complying. All these structural features combined to make compliance the path of least resistance: compliance was reported at over 99%.

New Source Review for coal-fired power plants was the perfect storm of bad compliance design. Companies decided on their own whether the rules applied to their facilities and didn't have to inform regulators. Figuring out who was violating was both complicated and resource intensive. Almost all of the necessary evidence was held by the violators, and almost none was available to regulators without a fight. Installing the required pollution controls was expensive, creating powerful incentives to make use of the many pathways to avoid, obscure, and evade. When they were caught, companies knew that even if they lost the enforcement case, they would still save money by delaying compliance. Violations became common, with serious consequences for people's health.

Because rules are the foundation of compliance outcomes, and case studies are the most powerful

illustration of why that's true, this Next Gen series of articles starts in Part 1 with an in-depth exploration of the design of both successful and unsuccessful rules.

PART 2: NONCOMPLIANCE WITH ENVIRONMENTAL RULES IS WORSE THAN YOU THINK

People may be persuaded that rule design had a big impact on compliance for the case studies in Part 1, but they may wonder if those examples are outliers, and if compliance overall is still pretty good. Part 2 provides the answer: serious violations are widespread, across all programs and industry types. Because we can't agree that we need a new paradigm until we accept that what we are doing now isn't good enough, Part 2 presents the evidence. Here are just a few examples:

- The vast majority of US petroleum refining companies were sued by EPA, resulting in 37 enforcement agreements covering 112 refineries, responsible for over 95% of the nation's petroleum refining capacity. Refineries produce pollutants known to have serious health impacts, including sulfur dioxide, nitrous oxides, volatile organic compounds, and benzene, a known carcinogen.
- All of the top five, and nine of the top ten US cement manufacturers – responsible for 82% of the total US cement production – were sued by EPA for serious air pollution violations.
- Nearly every large city was in consistent violation of the Clean Water Act and was eventually sued by EPA to cut discharges of raw sewage.

The dismal records cited above are for programs that



have received persistent regulatory attention. For many programs the data is far less complete, but the available evidence points to compliance problems that are just as bad. There are also some programs for which EPA purports to have national compliance data, but repeated audits prove that the actual rate of significant violations is far worse than claimed. For far too many regulations, EPA does not have enough information to make an educated guess about serious noncompliance.

I have asked many people – including some who have spent their entire careers working on environmental protection – to guess what the rate of serious noncompliance is with environmental rules. The most frequent response: 5% to 10%. You wish. It is nowhere near that low for most major environmental programs for which EPA has national data.

PART 3: STRATEGIES FOR MAKING COMPLIANCE THE DEFAULT

Once we understand that violations are serious and widespread, and that rule design is the key to better results on the ground, what should we do? While we have a lot to learn, the good news is that we already know about many ways to build compliance into rules. Part 3 will explore ideas that have been proven to work.

The best rule designs use strategies that match the problem. No two rules are identical and the forces that push against compliance will differ. Rule writers need to understand the motivations that already exist, as well as the incentives that the new rule will create. There isn't a universally applicable answer, but there are many strategies that have succeeded

and that rule writers can consider. New technologies are opening doors to innovative solutions. Continuous monitoring as was required in the Acid Rain Program, is feasible now for many pollution types and sources. This type of monitoring is likely to be a game changer for many intractable compliance challenges of the past. Electronic reporting will make noncompliance much harder to hide and at the same time allow use of advanced analytics to detect and prevent violations.

Not all good solutions are high-tech. Sometimes the low-tech answer works well, such as requiring a physical sign where the pollution is occurring. Sometimes a total ban or a one-size-fits-all mandate is the most effective way to get the job done. Complexity can be simplified through elegant design. Or a solution can just be simple, such as making the dangerous action impossible.

Next Gen is practical. It asks what will work and eschews ideology, so in Part 3 I also examine some of the current ideology-heavy approaches – such as performance-based and market methods – to see if they will produce better compliance. These ideas show promise in some situations, but they require even more mandatory safeguards than other approaches do. And all regulations, including market and performance-based rules, require use of what is often dismissively referred to as “command and control.”

PART 4: THE GUIDANCE YOU NEVER HEARD OF THAT IS UNDERMINING POLLUTION RULES

We know that rules only deliver when they produce results on the ground, so including provisions in rules to ensure action in the real world may seem obvious.



Why hasn't it happened more so far? An arcane but powerful provision in EPA's benefit-cost guidelines kills most Next Gen ideas dead in their tracks.

Federal law requires all rules to compare expected costs and benefits. Deep in the minutiae of EPA's guidelines for calculating benefits and costs is this directive: assume 100% compliance. That assumption is a death blow for Next Gen rule designs because it means Next Gen strategies run headfirst into the imperative for benefits to exceed costs by as much as possible.

“The 100% compliance assumption invites rule writers to live in the imaginary world where achieving universal compliance costs nothing.”

Will Next Gen ideas in rules increase costs? Most likely yes, even if not significantly. Will they increase benefits? By definition, no; rule writers are directed to just assume they get all the benefits of full compliance. The 100% compliance assumption invites rule writers to live in the imaginary world where achieving universal compliance costs nothing. For rules that are already close to the break-even point on benefits and costs, adding any additional cost can be fatal. The Next Gen extra baggage is thrown overboard to lift the rule above break-even.

The 100% compliance assumption is a key reason that the seemingly self-evident proposition of Next Gen is sidelined in rules. Even if everyone involved agrees that Next Gen ideas make sense and will

improve compliance, they usually don't survive the rule writing process. That's the inevitable result of a relentless focus on the benefit-cost ratio coupled with a presumption that universal compliance is essentially free. Part 4 explores this esoteric provision and why it presents a huge obstacle to fixing the compliance problem.

PART 5: UPDATING FEDERALISM

Another significant but underappreciated challenge for compliance is the relationship between the federal and state governments. Federalism is a central part of environmental law. Laws adopted by Congress protect people across the nation and assure a level playing field. States implement the federal laws in a way that fits local circumstances. There has always been a dynamic tension between the imperative to protect all Americans equally and the different circumstances of each state. This tension has fueled many environmental advances. But the dynamic has gotten out of balance, to the detriment of compliance.

States have a chokehold on environmental compliance information. States' failure to share that information with the feds – even when sharing is required by law – obscures violations, reduces protection, and prevents us from understanding how well our national laws are working. At the same time, the federal government resists the states' important role as innovators and laboratories for new approaches. It's time to recognize that the model of federalism that made sense in the 1970s when most environmental laws were created is not working for us now. We need more reliable national information about environmental compliance



and increased autonomy for states to try new approaches. Both problems have a common solution: use today's monitoring and information technologies to build a federalism model for the modern era that strengthens protection and innovation at the same time. Part 5 will outline what that updated federalism could look like.

PART 6: NEXT GEN AND CLIMATE CHANGE

One area where we can't afford to repeat the regulatory mistakes of prior rules is climate change. Time's up. Our next national moves to cut climate changing pollution must succeed. Markets are a necessary part of any climate solution, but when structural flaws are allowed in markets, they can multiply across the economy. These flaws are nearly impossible to fix – or even track – after the market is launched. We know a lot about what works, and what doesn't, in markets for pollution; let's learn these lessons now and not make avoidable mistakes when the chance to do something is upon us. Next Gen is agnostic about ideology and asks just one question: will it work? Part 6 will apply what we know about getting results in the real world to the most pressing issue of our time.

PART 7: ENVIRONMENTAL ENFORCEMENT IN THE NEXT GEN ERA

Tough enforcement – both civil and criminal – will always be essential to environmental protection. Bad guys are infinitely creative in trying to get around environmental rules and regulators have to be just as insistent in ferreting out bad behavior and holding companies accountable. We know deterrence works and it is an essential strategy in any robust compliance program.

Next Gen's focus on building compliance into rules doesn't replace enforcement. Next Gen will strengthen enforcement. Enforcers have long been given the impossible task of trying to get millions of companies to play by the rules. Once regulations force better compliance out of the gate, enforcers will be better able to do what they do best: focus on the worst violators. With robust Next Gen provisions in rules, regulators will know who those violators are; they will stand out because serious violators will be less common. Spending less time chasing after routine violations – because there will be far fewer of them – gives enforcers more time to tackle the most egregious problems.

“One area where we can't afford to repeat the regulatory mistakes of prior rules is climate change. Time's up.”

Enforcement is essential for another reason too: some of the Next Gen strategies work because the serious violators know there is a credible threat that they will be held to account. Part of the power of transparency, for example, comes from the fact that companies pushed into the open know they might be forced to comply.

It is surprisingly common for companies tagged in an enforcement case to be motivated to try something new. Enforcement starts when companies are caught breaking the law; being sued drags them to the table. But once they are there, many defendants decide to do more than the minimum. They suggest a more effective way to monitor pollution. They offer to field



test promising pollution control technologies. What starts as regulators forcing a violator to play by the rules can end with a company leading the way.

“The innovative strategies that are part of Next Gen defy classification as regulatory or anti-regulatory, making them potentially attractive to all sides of the current divide.”

The same paradigm shift needed for rules is also important for enforcement. Enforcement remains stuck on the tired and boring debate between tough enforcement and compliance assistance (or just ignoring violations, which is more an abdication of responsibility than a strategy). This has been the dynamic for decades. It is time to get over it. While the world has changed around us, the enforcement and compliance debates are mired in last century thinking. Part 7 describes what revitalized enforcement could look like in the Next Gen era.

Why Next Gen Matters Now More Than Ever

The initial steps EPA took toward Next Gen innovation in regulatory governance in the Obama administration have been buried in the avalanche of anti-regulatory actions by the Trump administration. Health protections, the rule of law, and science itself are all under attack. Defending environmental protection against this assault has understandably

claimed center stage. But we should also return attention to the paradigm shift that was underway, for three reasons:

- 1) The innovative strategies that are part of Next Gen defy classification as regulatory or anti-regulatory, making them potentially attractive to all sides of the current divide.³ Next Gen offers hope that progress toward better protection might be possible, even today.
- 2) We will eventually have a federal administration committed to environmental protection. When that day comes, we should be ready to do more than return to the outdated practices in rule writing and enforcement that served us well in their time but won't solve the problems we confront today.
- 3) Nowhere is the need for innovation in governance more pressing than in climate change. We don't have time to repeat our past mistakes. The insights of Next Gen are essential for designing climate policies that are sure to work.

3. The Trump EPA has boasted about Next Gen initiatives started under the Obama administration, which is encouraging evidence that some of these ideas have broad appeal. See, e.g., *EPA Announces Renewed Emphasis on Self-Disclosed Violation Policies*, EPA (May 15, 2018), <https://www.epa.gov/sites/production/files/2018-05/documents/refreshannouncementfordisclosures.pdf> (touting the e-Disclosure system set up under Obama to provide a centralized web-based portal to receive and automatically process self-disclosed civil environmental violations); see also Matthew Thurlow, *Practitioner Insights: The Next Generation of Federal Environmental Compliance and Enforcement*, BLOOMBERG LAW (May 9, 2018), https://www.bloomberglaw.com/document/X9J9BMMG000000?bna_news_filter=environment-and-energy&jcsearch=BNA%2520000001632be5dcfba7e77fe5b98d0000#jcite (stating that while the Trump EPA has abandoned the Next Gen terminology, it has continued to support many of the underlying principles and reforms of Next Gen).



When we admit that violations are common, and that rule design is the most important factor in achieving better compliance, we see the work of environmental and public health protection in a new light. That's the power of a paradigm shift; opportunities appear where previously we saw only problems. Next Gen is fundamentally an optimistic idea. Yes, it can feel discouraging to face up to the reality that left to their own devices many companies violate. But that's not the end of the story, it's the beginning. We have the tools to change the outcome. We just have to decide to use them.

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

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AUTHOR NOTES

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