



CleanLaw 51: Joe Goffman Speaks with Cynthia Giles About Her Ongoing Work on Next Generation Compliance, October 30, 2020

- Robin Just: Welcome to Clean Law, from the Environmental and Energy Law Program at Harvard Law School. In this episode, our executive director, Joe Goffman, speaks again with Cynthia Giles, one of our guest authors and former Assistant Administrator for EPA's Office of Enforcement and Compliance Assurance. They discuss her ongoing work, examining how well environmental rules do in ensuring compliance with pollution and waste reduction requirements, where they fail, and how to make sure they succeed. Cynthia's third installment of her series on Next Generation Compliance is now up on our website, linked in the show notes. We hope you enjoy this podcast.
- Joe Goffman: It's a pleasure to have our Guest Fellow, Cynthia Giles, back on the Clean Law podcast, I think, for the third time. The good news is that we get to talk about something different every time, which is in this case a sign of how prolific Cynthia is in writing about a really important part of not just environmental law, but environmental governance. And that is, what happens after a regulation is issued or a statute is enacted in terms of whether or not we see the reduction in say, air or water pollution, that the rules expect us to see.
- Joe: Cynthia has been a guest Fellow here at the Environmental and Energy Law Program for approaching a couple of years. And in the last several months, she's begun publishing a series of essays which bear a close resemblance to book chapters about what she calls Next Generation Compliance. We've published, I think, three of these in the last few months and this is a great opportunity to start talking about what those essays contain.
- Joe: Cynthia and I, at least from my perspective, had the good fortune of working together at the Environmental Protection Agency between 2009 and 2017 when she was the assistant administrator for the Office of Enforcement and Compliance Assurance. As we'll hear, some of these insights, some of the insights she's been writing about and that we'll be talking about and some of the ideas for improving and really modernizing compliance with environmental rules, were ideas she started to put into practice while she was at EPA. With that, Cynthia, let's begin from the beginning and walk our listeners through the papers that you've published with us so far.



Cynthia Giles: Thank you, Joe. I'm really happy to be here with you again, and always thrilled to talk about Next Generation Compliance. What is Next Gen? The top line is, Next Gen says that we need to change how we write environmental rules so the companies actually take the actions necessary to protect people and the environment. Assuming they will doesn't work. So we need rules with compliance built in. That is in short, what the entire Next Gen writing I've been doing is about.

Cynthia: The origins of this starts with two very commonly held beliefs. I've been doing this compliance and enforcement work for my entire professional career, and I've heard these expressed throughout the entire time that I've been doing that. The two commonly held beliefs... The first one, that most companies comply. You hear this everywhere. There might be a few bad apples, but most companies do follow the rules. Certainly, the large ones do. Maybe there's an issue with the smaller ones. But, that compliance is overall very good.

Cynthia: The second commonly held belief is that compliance is the job of enforcement. Government regulators write standards and then they hand it over to the enforcement people to find the violators and take enforcement action. That second one, that compliance is the job of enforcement is so common and so deeply ingrained, that most people don't even know it is a belief. They think that's just the way it is, like gravity. Those two foundational beliefs I think are responsible for many of the compliance challenges that we have experienced.

Joe: When we hear people on the private sector talk about what they refer to as cultures of compliance or express pride in their corporate commitment to sustainability, that may or may not correlate with their behavior on the ground level when it comes to say, installing or operating pollution control equipment or disposing of their waste or their outflows.

Cynthia: Well, there certainly are companies that are committed to good compliance performance. But what government cares about is the situation at large. Having a few good high performers is terrific, but it's not sufficient. It turns out that the assumption that most companies comply isn't right. In fact, serious violations are widespread. They are common in all sectors, all sizes of companies, all different kinds of regulations. They are common for regulations that control the amount of pollution that can be released. They are common in prevention programs, like the obligation to check for corrosion to make sure there's not a huge explosion. They are common in monitoring and reporting obligations, which is how government even knows what's happening out in the world.

Cynthia: Interestingly, over the course of my career, I have asked many people, including people who have spent their entire professional careers doing environmental protection work, what would they guess is the rate of serious violations of environmental rules. The most common answer I get back is, "Oh, 5% to 10%."



You wish. Okay. It is nowhere near that low. 25% of serious violations is the norm, and many programs are substantially higher than that.

Joe: What you're saying is... violations is sort of an abstract word. But what you're saying is that abstraction is masking the fact that more pollution is being released into the atmosphere or into water. More hazards are continuing unchecked even though what's written in the Code of Federal Regulations promises that that pollution won't be occurring or that waste won't be being released and mismanaged. The real world behind the word violations means more pollution, more waste, more hazards than there are supposed to be.

Cynthia: Yeah. Serious and widespread violations means we're not achieving the environmental goals that are set out in the law and not protecting people. There's lots of evidence of this. For example, about 130 million people in the United States live in places that are not meeting air quality standards. Almost half of the United States rivers and streams are labeled as in poor condition. In many of those places, we're going in the wrong direction. It also means a lot of the health threats that are not being monitored are going unchecked. For many of these problems, assuring compliance is the first and sometimes the only line of defense for protecting people's health.

Joe: Well, let's pause a little bit and talk about the fact that approaching half the population of the country lives in areas where the air quality is substandard, where the air quality exposes them to health risks. I think from the point of view of our former colleagues at the EPA and the Office of Air and Radiation and the regional offices, and from our former state level colleagues, the going and persistent belief is figuring out what has to be controlled in terms of sources of pollution. It's just really hard to do in order to get the air quality in communities down to the level where the air quality is attaining the standards.

Joe: It sounds like what you're saying is that may be true, but it's not the whole story. That even where, say, state regulators or federal regulators have to a degree at least figured out what has to be controlled in order to protect air quality, there's a margin of failure that is due not to poor or inadequate thinking through the requirements, but also to noncompliance with those requirements.

Cynthia: Absolutely. As you're pointing out, it certainly is true that some kinds of environmental protection are very complicated and figuring out what to do is not simple. Compliance is about making sure we're actually doing the things we've already decided are the right things to do, and they're reflected in the law. They're obligations. That's the minimum. We should be doing the things that we've already realized and regulated that are necessary to protect the public. That's what compliance is focused on, is making sure we do those things at minimum.



- Joe: Now I think a lot of people listening to this discussion up til this point would say well, this is really a problem that can be addressed, or it's a problem that reflects the fact that we put inadequate resources into assuring compliance or enforcing against violators, that the action or the failure is all downstream at the point of compliance and enforcement.
- Joe: But your insight, and again, I think this goes back to some of the things you were trying to do when you were back at EPA and something that's been the focus of your work since then and in the papers you've published... is that it's not just the downstream problem or that the solutions don't lie exclusively downstream in enforcement, but the solutions also lie upstream in the design of the rules themselves. And that what Next Gen really is focused on is recasting, reframing, how the rule writers should think about the way they structure requirements in order to enhance the probability that the rules that we comply with in the first place.
- Joe: It's not just a matter of tripling the budget of the Office of Enforcement and Compliance Assurance and its counterpart at the Department of Justice, it's a matter of getting the rule writers themselves to think in a more expanded frame.
- Cynthia: Absolutely. That's right. Remember, I started at the beginning with saying that there's two assumptions?
- Joe: Mm-hmm.
- Cynthia: One is that most companies comply, and the evidence is that's not right. The second assumption that compliance is the job of enforcement, that is also not correct. In fact, rule design is what determines compliance. If you design the rule to make compliance the default, compliance will be good. If there are many opportunities created in the rule to evade, avoid, obfuscate, it won't. Enforcement can never fill the gap created by a rule with bad compliance design.
- Cynthia: I just want to clarify because sometimes when I talk about the important of rule design, people say to me, "Oh, so you're saying we don't need enforcement." No, I am not saying that. Tough enforcement is essential. You cannot have an effective regulatory program without it. What I'm saying is that enforcement alone will never be enough to fill the gap created by a badly written compliance rule.
- Joe: In the first part, what I'm hearing you say is that it's not an either/or problem, it's a both/and problem.
- Cynthia: Right.



Joe: And that it's not so much substituting insightful rule writing for enforcement. It's really more of a kind of intelligent allocation of responsibilities. In other words, make it easier for sources to comply. Choosing compliance over noncompliance the more attractive or at least a not unattractive option so that the enforcement resources can be more focused, more concentrated on the real problems.

Cynthia: I would put it a little more strongly actually, than that, Joe. I think that yes, we have to have both. But the most important determinant of the outcome is how the rule is designed. It isn't just to make compliance easier, we need to make compliance the path of least resistance. We need compliance to be the default setting of the rule. There will continue to be outliers. There's always people finding a way around, and enforcement is essential for those folks. But enforcement cannot be the main strategy for assuring compliance.

Cynthia: The rule has to be written so that it will operate to ensure compliance on its own. It is possible to do that. But it is because of this assumption that compliance is the job of enforcement, most rule writers haven't really grappled with that and thought about it. There are many of them not familiar with what are the tools to ensure compliance. They tend to look towards the enforcement offices of the people whose job it is. I'm saying no, no. That is the wrong way around. We have to build compliance into the rules when they're written.

Joe: Let's talk about a couple of examples which you wrote about in part one, and in once case revisited in part three which we published a couple weeks ago. In part one, you wrote about the Acid Rain Program as more or less a model of creating a set of features that made compliance the path of least resistance. And then you also contrasted that with the New Source Review Program. In both cases, the application was to coal-fired power plants.

Cynthia: I find that for some people, the concept of Next Gen feels a little abstract and that it is very helpful to give concrete examples of the real world, of a rule that does a good job of assuring compliance and what are the features that allowed it to do that. And a rule for the same sector, regulating the same sources, that did an exceptionally bad job of assuring compliance so it gives people something specific to be able to focus on to understand Next Gen.

Cynthia: Acid rain as you've mentioned, Joe, is really the leading terrific example of how a statute and a rule can be designed to push companies to comply. They've achieved fabulous compliance rates, like over 99%. That program was to address sulfur dioxide emissions from power plants that were causing literally, acidic rain to fall on big parts of the United States, causing a lot of harm.

Cynthia: The goal was to cut the sulfur dioxide from coal-fired power plants. And established a way to do that, putting a cap on the total amount of sulfur dioxide



emissions that would be allowed, and allowing the power plants to trade these emissions amongst themselves. Hence, the name Cap and Trade. That's the most famous part of the rule. But that's not what's responsible for the incredibly high compliance.

Joe: I'm going to find a way just to draw a line under that.

Cynthia: Yeah.

Joe: For people who specialize in this Clean Air Act law and lore, it's just taken as a given that the Acid Rain Program enjoyed very high compliance. But I believe the percentage of noncompliance was almost the vanishing point.

Cynthia: Yes. Yes, it was. I think in the 99% range, which is only to dream about for other programs that EPA administers today.

Joe: What were the features that in your view brought about 99% compliance?

Cynthia: Well, it was a set of interlocking requirements. It wasn't any one alone, but it was putting these all together. The first was continuous emission monitors. Not guessing, not estimating, but actually measuring and knowing how much pollution there was from each facility. Then there was an obligation to make sure that the companies felt inspired to keep those monitors working and meeting the quality assurance requirements. It said if your monitor is down or you fail quality assurance, you have to assume that your emissions were pretty high. So that motivated the companies because there's economic consequences for high emissions. That motivated them to really focus on getting those monitors working right. Then they had to electronically report on a very regular and frequent schedule into a central database. That allowed government to have realtime information on what was going on, to easily do auditing and other data checks.

Cynthia: And then there was a very simple.... Even though it's a complicated program and hundreds of pages of guidance needed to understand how to run these monitors and do quality assurance and everything, it was boiled down to in the rule to a very, very simple compliance check. Do you have one allowance for every ton? Compare the number in column A to the number in column B. Do you have enough, yes or no? It's very, very simple and violations are hard to miss. And then added to that, there were automatic penalties. If you don't have enough allowances, you will automatically owe a penalty which is more than the cost of buying an allowance. Why wait and pay more? It's cheaper and less hassle to comply.

Cynthia: It was these features, interlocking features, that made the companies realize, "Hey, we have to do this. There is no way out. And if we attempt to evade or go



around, it's going to cost us more. It's going to be a lot more aggravation." Those were the features that gave rise to these very impressive compliance rates with this program.

Joe: The term Cap and Trade didn't come into existence, I don't believe, until several years after the Acid Rain title was adopted. That neologism had to wait a few years. But the word of the year in 1989 and 1990 when the program was being enacted was automaticity. Because a little feature or sub-feature that Congress added to that last part where you got docked if you didn't have the number of allowances you needed to equal the number of tons you emitted... Congress said that as an automatic matter, the company would pay a per-ton penalty which was as you said, many times higher than the actual cost of an allowance. And, it would have to give up an allowance the next year. Both of those penalties befell a violating company automatically without the intervention of an enforcement action that had to start from scratch.

Cynthia: Can I just say and kudos to you, Joe, as one of the principal architects of this very impressive law.

Joe: Well, there are so many different parents of this thing, probably could have been a character in a Kurt Vonnegut novel it had so many parents. But there was a high degree of suspicion about whether or not emissions trading was itself a reliable feature for a pollution program. That motivated the authors to demonstrate that the compliance side was as close to foolproof as was humanly possible.

Joe: I think it's probably worth dwelling on this because for a long time, it was economists who sort of hijacked the lessons learned exercise and focused on the fact that the main breakthrough that the Acid Rain Trading Program accomplished was to demonstrate that using a market for tradable emissions reductions could avoid cost. That masked the fact that in reality, both at the time and since, the Acid Rain Program's most important contribution in my view was... and I think this is reflected in your papers, it really was almost revolutionary or certainly extremely innovative in reforming compliance, reforming the architecture of compliance.

Joe: Because you really did define the environmental goal and what sources individually and collectively had to do to be in compliance as synonymous with each other. And the penalty structure, including its automaticity, achieved what you talked about, which is the path of least resistance was simply to comply. In a way, the Acid Rain Program from a point of view of the compliance regime was the first iteration of Next Gen compliance.

Cynthia: I totally agree. I think the Acid Rain Program, its market feature is certainly good and it did reduce costs, which is what the market features of most programs are



mainly focused on doing. But the brilliance of Acid Rain Program comes from its very deft application of command and control. Often derided term, has a bad rap which is undeserved. Because I think command and control as this program demonstrates, that's how we build compliance into the rules, through skillful application of mandatory obligations that make compliance the path of least resistance.

Joe: In your first paper, you also set up New Source Review as a contrast that potentially illustrates compliance challenges to be avoided.

Cynthia: The beauty of comparing Acid Rain with New Source Review is that it is two different rules applied to the same sector. It helps to illustrate the point that it's not the sector, it's the rule that makes the most difference. New Source Review was a program set up by Congress to address the huge public health impacts from large sources of air pollution, including coal-fired power plants but not limited to them.

Cynthia: What Congress did was say, "Okay, we're going to have tight new standards for new large sources of emissions. And as the existing group of large sources are modernized, they're going to have to install the new pollution controls." In many cases, these new pollution controls were huge... 95% reduction in pollution that has direct and measurable and well understood impacts on human health.

Cynthia: What the New Source Review program did on the compliance side... I would say in contrast, Acid Rain, which was a terrific illustration of how to use Next Gen ideas. New Source Review is the perfect storm of bad compliance design. It was very complicated. When these new controls would be required, there were multiple exemptions, exceptions, and high degrees of complexity made worse by the fact that there were facility specific determinations very fact-intensive, different for every single application. There was almost no required reporting.

Cynthia: The key information to figure out if a company was subject to this requirement and had to modernize its pollution controls was held by the company, and EPA was not going to get that information without a fight. You put this very complicated messy fact-intensive hard to figure out program in a situation where the controls that would be required were very expensive... worth it. Worth it, because there was such a huge public health benefit. But it's a situation where the company is highly motivated to find a way out. The big cloud of ambiguity created by this very complicated and difficult to find violations structure that was created, made it easy for companies to find that way out. In contrast to the excellent compliance record in the Acid Rain Program, New Source Review for coal-fired power plants, over 70% of the top 25 companies that ran coal-fired power plants had serious... these are not minor. These are gigantic, serious, the



largest pollution sources in the country in serious violation with very significant public health implications.

Cynthia: The contrast between these two rules is, I think, profound. And you can see, it's the same facilities, the same managers. It's all the same types of facilities being regulated. The difference is you had a tightly designed compliance rule in one, and you had a very porous messy lots of ways out compliance design in the second one. And we saw the huge difference.

Joe: I think a lot of critics of New Source Review... Not necessarily you, Cynthia, but a lot of detractors and even a lot of supporters, would say, "Well, what you just described in terms of the contrast between New Source Review and something like the Acid Rain Program is an unavoidable consequence of the fact that New Source Review necessarily is a case by case exercise." That the question that the writer of a permit for an individual source that's subject to New Source Review or the regulator that has to examine whether or not there needs to be a new permit in the first place is shall we say, doomed to doing fact-intensive case by case examination. There's just no way around New Source Review functioning the way it does and no way to get it to resemble a Next Gen type rule design. I guess my question is, is that right?

Cynthia: I don't agree with that, no. Because I think if you take a step back, what was Congress's purpose? They wanted a cutback on the huge amount of air pollution that we had in this country from these large sources. That was the goal.

Cynthia: The way the program was designed is a choice that was made about how to design that. The decision to exempt a lot of facilities, the decision to give indefinite extensions to people and lumping it into this program that has very fact-specific individual choices, this is part of what made it so bad as a compliance program.

Cynthia: I think if you had someone who understands Next Gen sitting in the room with the people, Congress or the rule writers who are writing it, who could say, "Hey, listen up. This is what's going to happen. When you do it this way, this is what's going to happen." It's definite. It's not a prediction or a maybe, it's a definite that will happen and that is what happened.

Cynthia: Every program is a little bit different. It's not like you can take the Acid Rain Program and plop that down on top of a wholly different program and say those same features will work. No. You need to design to the specific problem that you have. And New Source Review is not Acid Rain. But there are many additional things that could be done in that program to substantially improve the compliance rate. I would say principal among those which is not an NSR design question, but principal among those was the decision to exempt the existing



facilities indefinitely. That is part of the design choice that was made. It doesn't have to be that way. Clean Water Act didn't do that. That design choice is what set down on the path of a very, very difficult to design. It could have been designed much better in my opinion, but Congress created the circumstance that was going to make it tough by exempting basically, the existing facilities.

Joe: Those are two really important points, to my ears at least. One is, you've got to design the program to address the problem as it is. Back in the day, there were a lot of people, both supporters and opponents of emissions trading, said this is great because it'll replace New Source Review. Opponents said this is terrible because it'll replace New Source Review. They were both wrong. Because as you said, the Acid Rain Program was designed to address one set of phenomena and New Source Review was designed to address a completely different phenomenon.

Joe: But you also said something that I think a lot of people really should pay attention to which is, it was the decision to grandfather existing sources indefinitely that made all the difference, and that that was not a decision that was logically necessitated by trying to solve the problem of pollution loadings in local air sheds. But I think so many people pretend that what is an independent decision and kind of an arbitrary one relative to the problem we were trying to solve and are still trying to solve, is not necessitated. NSR isn't a box with fixed walls. You can not only think outside the box, you can actually reconfigure the walls.

Cynthia: Absolutely. I think that's one of the things that Next Gen encourages to have happen, that we think about what it is we're trying to accomplish and whether the strategy that we're adopting will accomplish that. Understanding how things work in the actual real world, not the theoretical world. But in the real world where things go wrong, people don't pay attention, they don't put a priority on a compliance. Lots of things happen. So the assumption that if you put something in a rule it's just going to happen, is wrong. We have to assume that a lot of things go wrong, that things will not automatically happen because we write it down.

Cynthia: What is a good structure that will push towards a much better outcome? I think it's worth mentioning here that for people who don't live and breathe in the compliance and enforcement world, that compliance is not just a yes/no, you're fully compliant or you don't do anything at all. There's a lot of gradation in there. Many companies comply with some rules, but not others. It's not just pollution rules, but rules designed to prevent harm... like only sending hazardous waste to a disposal facility that's licensed for that or requiring that pesticide applicators be licensed so you reduce the chances that somebody puts an unapproved for indoor use pesticide into a home and permanently harms or kills people, which has happened.



- Cynthia: Not all violations lead directly to a health problem, but they increase the risk that it will. It's important to understand that it's not just the binary comply/don't comply. There's a lot of gradation. One of the things that Next Gen focuses on, let's address what's most important. What are the things we care about the most, and push those parts of compliance the most. That's what my series of articles is focused on, the serious violators, the big health consequences, the high risk problems, not minor stuff... looking at the really big impact problems and how can we prevent those.
- Joe: It sounds like this prism or lens, the Next Gen prism, is one that can be applied not just to air pollution from coal-fired power plants as we've spent a lot of time discussing, but also to any part of the economy where we're worried either about pollution or other hazards that increase risk to people. It's both pollution which is on an ongoing basis threatening people's health, and it's also other activities, other hazards, that create big risks for people. It's a set of organizing principles, if you will, that need to be absorbed by rule writers and applied as fits the specific problem that they're trying to address.
- Cynthia: I think most people think when they think of environmental regulations, they think about pollution. They think about air and water pollution. Those things are very important, and there's a lot of public health issues. But EPA manages a lot of other kinds of programs that are designed to prevent harm. Not to control the amount of pollution, but prevent it from ever happening. Pesticide regulation is one example. Drinking water is one. It's very important that the people who run drinking water systems monitor those systems and they monitor them the right way and that they take the preventive actions that are designed to keep the water that comes to your home safe, and that you will not face health consequences from turning on the tap. Almost all the drinking water programs are preventative in nature. Hazardous waste programs are all designed to keep there from being a release of hazardous waste. Chemical safety programs. There are many, many programs that EPA runs that are not about pollution, directly.
- Cynthia: Next Gen applies to all of these and says okay, given the problem, given what we're trying to accomplish, what are the best ways to ensure that we actually achieve the objective that we're striving to achieve? It invites to ask the question, if the regulated parties want to avoid complying, are there many ways to do that? And if there are, you can count on it. There's going to be a lot of violations. The assumption that the companies will just comply is not warranted. I should be clear. I am not saying the companies want to violate. Usually, the problem is just that they're not making compliance their priority. They don't want to violate, but they also are not doing what's necessary to comply. It's just a practical question. Do you want to get the health benefits or not? The rule needs to make compliance the path of least resistance.



- Joe: Listening to what you just said, it makes me think that companies are not let's say, ideologically opposed to compliance and want to avoid compliance in all cases. It's that they more or less have a set... I guess, emphasis on more or less, have a set of more or less rational choices. And a well designed rule makes compliance not just low cost, or if it's not low cost, but makes compliance high on the list of rational options and makes noncompliance way down that list, makes it a highly irrational option.
- Cynthia: Well, one of the things I would say is that I think that the economists focus on the rational actor model which has so overtaken all policy discussions, I think is leading us astray on this topic. Because my experience certainly is... although there's outliers. There's definitely bad guys. We need criminal law enforcement. There are definitely people who deliberately take risks with people's health. But my experience is that a large portion of the violations that matter are people that are cutting corners. Equipment didn't work right, the people aren't trained, it's not convenient, there's a clash of priorities. These are the kinds of things that happen. This is the real world. It's messy. Complicated unexpected things happen.
- Cynthia: Next Gen is saying take the world as it is, the big messy complicated world as it is, and you have to design so that it becomes hard to avoid doing what you want people to do. You can't design on the theory that you're counting on the good faith and high levels of intention and great corporate design and the integrity of all the individuals. That's just not a strategy that's going to prevail, that's not going to work. You need to design a strategy that understands how things really work in the real world.
- Cynthia: I can give you a tiny example of this that's I think for many people simple to understand, is the herbicide Paraquat which is a widely used herbicide. Kills weeds, but it's highly toxic. A single sip can kill you. For that reason, it's a restricted use chemical, which means only certified applicators can use it and you're not allowed... You would think you don't have to tell people this, but the rule specifically says you're not allowed to put it in another container like a beverage container, for example. Nevertheless, there were 17 deaths from accidental ingestion of people who had put Paraquat into soda bottles and put those in their garage or their basement or whatever, and someone found them and drank them and died... including one case of an eight-year-old boy who found a Dr. Pepper bottle in the garage that had Paraquat in it. His brother had put it in there, and he had obtained the Paraquat from a licensed applicator. So EPA is confronting this problem.
- Cynthia: What can we do about this? Okay. It's prohibited to put that stuff in a bottle. And yet, people are still doing it. What should we do? Simple, low-tech solution. EPA put a new rule saying that packaging for Paraquat must be designed so you can't transfer it to another container. So stop relying on warnings and good judgment,



just make it impossible. That's an example of a Next Gen type thinking that says, "Okay, we understand in the real world, people are not doing what they should be doing, what even common sense and good judgment would tell you you should be doing." They're not doing it. So we have to structure this in a different way so that we do not get this bad outcome, people dying from Paraquat in soda bottles. We have to design it so that that cannot happen.

Joe: Next Gen goes miles beyond neoclassical economics to really examine what is the behavior we're trying to promote, and what is the behavior we're trying to deflect, and let's examine that behavior and come up with a solution to it or a solution that works for the way that people actually behave.

Cynthia: I think acid rain is maybe an exception where people do sit down and decide. NSR is another one where they do sit down and decide, "Am I going to comply, yes or no?" Most programs aren't like that. People don't sit down and say, "Let's violate." No, it's a progression of a whole bunch of choices or failure to make choices that ends up with a violation that can be serious. So we need to prevent that and not just have in our mind this idea of a person sitting down with a calculator adding up the pros and cons, because that's not how a lot of choices are made in the real world.

Joe: That's great. Because so many upstream when people are evaluating what the legislation should say or what the regulations should say. They just reduce it to exactly that one paradigm, which is somebody sitting down with a calculator comparing compliance with noncompliance and how each affects the bottom line, and then we write the rules or we set up a system that assumes that that's the only way to frame the problem. If anything, Next Gen is our liberation from the blinkered worldview of neoclassical economics.

Cynthia: I hope so.

Joe: I appreciate being liberated therefrom. Now, I want to make sure that people realize that this is not just coming from a brilliant intellectual vision, but that it also has some roots in experience, roots in practice. That you're not talking about something that is entirely theoretical or hypothetical, that you had an opportunity when you were at the EPA to walk some of this. Could you share a little bit about what your experience when you were at the agency was in trying to maneuver these insights into the process of writing rules and regulations?

Cynthia: You are so right. It is the opposite of a theoretical exercise. Next Gen is very emphatic at being agnostic on theory and ideology, and is asking instead a very, very practical reality grounded question. Will it work? That's the measure. Will it work?



- Cynthia: When I was at EPA with you, Joe, during the Obama administration, this was something that I was certainly pursuing with many of the programs in the course of their writing rules. One way I was doing that was taking around to the programs, the data about serious violation rates. That this assumption that most people would say, "Oh, it's 5%, 10%." Showing that no, no, no. Okay, it's not close to that, nowhere near that. My experience with that is that some were shocked and wanted to know what could they do, and many were resistant. I learned from that experience that even data geeks like folks at EPA can sometimes discount data that doesn't fit with the preconceived notion which is widespread within EPA as well as the greater environmental policy world, this idea that most companies comply and enforcement takes care of the rest. Those things are very deeply grounded.
- Cynthia: But I would say, we had a number of what I viewed as very big successes for Next Gen during the time you and I were both there. I'll give you just a couple examples. One is what is referred to by the name of the NPDES Reporting Rule, which just means the water dischargers had to electronically report on their discharges. And that was a rule that became final in 2015. It moved water dischargers all over the country. All of the major and minor... lots of other sources too, moved from paper to electronic.
- Cynthia: And, here's the key part. Make that data available to the public. It's an obvious efficiency move. I mean, what century are we in? Why are we not reporting electronically? It had a lot of efficiencies that saved a lot of money, especially for states. But its real power is a Next Gen strategy, a push for better compliance through the power of public accountability. That's not an enforcement strategy, it's saying, "You will no longer be able to be invisible. The whole world will be able to see who's violating their clean water obligations." The motivation behind that is to improve compliance by transparency, essentially... making that information public.
- Cynthia: The other example I would give of what I viewed as a great success was what's called fugitive emissions at refineries. Refineries are as everyone who's driven by one on their way to or from the airport knows, refineries are huge places and there's lots of pipes. There are thousands and thousands of places where you can have leaks of chemicals that are very concerning for public health. The walk around and look for them strategy which has often been our main pathway of trying to protect ourselves from those emissions, EPA adopted a new strategy in a refinery rule which said... no, let's make the most out of new technologies that can measure pollution at the fenceline. Along the fenceline, around the refinery, this is one of the places where we care most about this pollution. This is what's coming out of the refinery and into the community, okay? That's a very important measurement of the impact of this facility's pollution on public health.



- Cynthia: EPA included an obligation for refineries to measure at the fenceline in much, much closer to real-time. Not only does that let the community know about problems that affect them, but it gives the facility real-time access to information about where there might be a fugitive emissions problem, and lets them go in and find that and fix it before the problem gets even more serious. I would say that is an example of a terrific Next Gen idea that was actually incorporated into a regulation.
- Joe: It's really a very important example. Because I think the pre Next Gen paradigm for how to deal with hazardous air pollutants coming off of refineries was to stick with a kind of not quite whack-a-mole, but maybe sort of a treasure hunt across the refinery campus looking for ways to monitor potential sources of increments of pollution like waste pools or wastewater discharge pipes, trying to guess whether or not they were one by one, significant sources of emissions. So the whole dialogue would be between the regulator or compliance official and the operator. With the community, the real beneficiaries of this, at best being in a position to get collateral benefits of that treasure hunt.
- Joe: What was so wonderful about the fenceline breakthrough was that it turned the telescope around to be looking in the right direction, which is, what's the community experiencing from this facility as a whole? Because that's where the action is in terms of the impact of pollution, the exposure of pollution, the totality of the pollution. And then once you have everybody including the chief stakeholders, which are the people who live near the refinery... once they get full insight or full visibility on what's happening, then you try to come up with a comprehensive solution.
- Joe: The treasure hunt model, the pre Next Gen model, was just an exercise in futility and fostered the kind of behavior that you described a few minutes ago, which is... do we really have to bother with this? And it's complicated to run this refinery and why should we be looking for these different individual problems that may or may not exist? Few regulators want to make us then go ahead and try, but it's going to be a real time consuming and clumsy operation.
- Cynthia: I agree, Joe. I think one of the things that I would say that Next Gen is trying to foster is look up from the way have usually done things and ask the question, "What exactly are we trying to accomplish here? What's the end goal? And is there maybe a different way to get there that's going to be a lot more effective?" I would say one of the principal beneficiaries of doing things this way is environmental justice, because nobody gets clobbered more with the health impacts of violations than overburdened environmental justice communities.
- Cynthia: If we can find a way to ensure much better compliance without having to have government intervention in every case to make that happen, because that's not



practical, possible across every community in the country... If we can find a way to make compliance much more the default and include the community and provide them with the information about things that affect them most directly, we will do a lot to try to close the gap of pollution and public health problems caused by pollution in environmental justice communities.

Joe: Well, let's dwell on that a little bit. Let's give one more farewell to the Acid Rain Program. Because I think that was also an early exercise in starting with the problem statement being, what is the environmental outcome we're trying to achieve and then let's design back from that, rather than designing upstream... what the technology is that we might be able to use and then wish ourselves luck that it'll actually align with solving the problem. The fenceline monitoring requirement is another example of that.

Joe: Indeed, what the agency focused on when we were doing the refinery rule was that so many refineries are responsible for visiting disproportionate amounts of pollution on communities of color and low income communities. We thought of a way of really empowering those communities so that everybody had the same understanding of what the problem was that had to be solved. But in your experience just in enforcement, are we underachieving from an enforcement point of view with respect to protecting environmental justice communities? I don't know if you've done any analysis. But just in your tenure as the chief enforcement person at the agency, what were you seeing?

Cynthia: I would say we are underperforming as a country in addressing the environmental justice challenges. People have worked on this question, and part of it is we need new authorities that make it easier to address some of these things. Like cumulative impacts, for example. But this is something that we need to do much, much better on. I think that one of the key things... enforcement is an important part of it. But one of the key things that motivates Next Gen is saying, "We need to make this the protection of public health. For people who live near these facilities, we need to make the assuring compliance much more automatic." We cannot have the health of these communities depend on the resources and the good will of the government that is charged with administering them. Because unfortunately, history has shown all too often that's not sufficient. That's not going to work.

Cynthia: Next Gen is very much about pushing for a much more... automatic would be overstating it... but a much, much higher baseline of performance that we are going to get from these public health protections than we have historically actually achieved in the real world. Not what does the rule say, but what's actually happening. I mean, the present time we live in with COVID just underscores this point many times because we have seen how the communities that are more exposed to poor air quality have worse COVID outcomes. That just



underlines how vitally important it is that we address these disparate pollution issues.

Cynthia: I would say one of the things, and this relates back a little bit to the part three article that I just posted with you, Joe, is that environmental justice has to be a central part of market strategies when we look at market strategies. Acid rain was a successful market strategy, but markets are being considered for a lot of other environmental problems too. And it is really important that as we think about markets and decide whether markets work from a Next Gen perspective, will we achieve the objectives that we are setting out to achieve, one of our objectives is to make sure that the cost and the benefits are equally and fairly distributed.

Cynthia: If a market strategy cannot be designed so that it preserves that fundamental goal of environmental justice, then that's telling us we need to think of a different way. It's the same concept about compliance, that if you can't figure out a way to assure pretty good... it doesn't have to be perfect, but widespread compliance. If we cannot figure out a way to do that, we need to think about doing it a different way. And that's what Next Gen is saying, is look up from your math and say, "Are we going to get there?" And if we're not, try something else.

Joe: Markets are great at reducing cost. You almost count on them for that. But they do not automatically deliver anything else. It's your compliance regime fitted specifically for the problem you're trying to solve that's going to deliver all the other features that you want to achieve.

Cynthia: Yep.

Joe: Let's wrap up by looking forward. This is part three which just went up onto EELP website a couple weeks ago. It is not the end of our intellectual journey. What's next for Next Gen?

Cynthia: Well, I have multiple parts still to come. I have an agreement to publish a book on this topic with Oxford University Press. And there might be additional parts published with you, Joe, if I can twist your arm to do that. The pieces yet to come, the two big ones are... How does Next Gen apply to climate change? How can we take the lessons of Next Gen to address the most difficult and compelling problem of our time and try to ensure that in fact, we will get the emissions reductions that we have to have.

Cynthia: Another big section to come is to say all right, having outlined how it should work and examples of good and bad and the too many examples of bad and bad compliance... okay, what are the strategies that can work? And what does the evidence show are ideas that we should consider? So to lay some of those out and some of the evidence for them.



- Cynthia: Then also, a short discussion about what does Next Gen mean for federalism. The environmental protection endeavor is a shared federal and state experience. The dynamic tension that exists with that system which has powered, I think, many advances. We're still caught in the 1970s model of federalism that was developed after the first environmental laws. I think that needs to be updated to really address the Next Gen solutions.
- Cynthia: And then finally, enforcement. Enforcement, must have, essential. What does enforcement look like in the Next Gen era? What is the central and very important role, but updated role for enforcement, and how will enforcement help us to get these environmental results in addition to what we put in regulations? That's a quick overview of the parts still to come.
- Joe: Well Cynthia, other than saying thank you very much for taking the time to record this podcast, I have to say that we should stop so you can get back to work. Whether it's climate change or simply making sure that the pollution reductions we're counting on having happen actually occur, the world really is dependent on your finishing all that work. So thank you for doing it. You've had a remarkable career in public service, and it's just amazing to think how you've extended it since you've left the government to contribute benefit of comparable value.
- Joe: It was a blast being a colleague of yours at the EPA, and it's been tremendous to be able to support what you're doing. For people listening to this podcast, just listening to Cynthia is fabulous, but it's not enough. You have to go to our website and actually read what she's written and take it to heart.
- Cynthia: Well thank you, Joe. It's always wonderful to talk with you. It was a lot of fun working with you, and I appreciate your having me on to do another broadcast. I greatly appreciate it.