



CleanLaw 63

Carrie Jenks and Kate Konschnik talk about EPA's Proposed Methane Rules– December 17, 2021

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- Hugo Fowler: Welcome to CleanLaw, from the Environmental and Energy Law Program at Harvard Law School. In this episode, our Executive Director, Carrie Jenks, speaks with Kate Konschnik of Duke University's Nicholas Institute about EPA's recently proposed methane rules for new and existing oil and natural gas sources. They discuss some of the input EPA is seeking from stakeholders related to advanced technologies and how regulations could enable their deployment to achieve emission reductions. We hope you enjoy this podcast.
- Carrie Jenks: Hi, Kate, I'm excited to have you join the CleanLaw Podcast today. And I'm looking forward to discussing with you EPA's recently proposed rules to reduce methane emissions from the oil and natural gas sector. The proposed rules would apply to new and existing sources. And you and I have been working together on some of the key underlying questions for these rules in advance of the proposal. Before we dig into the specifics, I think it'd be great to start with your background.
- Carrie: We started working together on the Climate Legislation when you first work for Senator Whitehouse, but you've also worked for DOJ and as a former executive director at Harvard Law's Environmental and Energy Law Program, and now you work at Duke. So, could you talk about your current work and your work on methane? Because I think that focus started for you when you were here, right?
- Kate Konschnik: Yeah, that's right. And I appreciate you mentioning the HEELP role. This podcast feels a bit like a trip down memory lane. So, I really appreciate talking to you today and being on this podcast. The methane issue actually first appeared on my radar when I was still on the Hill. I joined Senator Whitehouse's staff right after the House had passed the Waxman-Markey Bill, which didn't really focus all that much on natural gas.
- Kate: But between the House and the Senate, the natural gas industry seemed to suddenly grasp that it had a climate story to tell, particularly as a substitute for coal in the electricity industry. But at the same time, some scientists were starting to push back a little on this story, warning that at a certain point, methane pollution from the natural gas supply chain could negate any air pollution or climate benefit from the power plant smokestack.



Kate: So, that was swirling around a bit in the background for me but I didn't focus directly on the issue myself until I came to Harvard. At first, at Harvard, I was working on other environmental issues related to the shale gas boom like hydraulic fracturing chemical disclosure, and induced seismicity from some of the disposal wells. I was really interested in how you regulate activities when we don't fully understand the risks that they pose. I met with a lot of policymakers and industry at this time, and the methane issue just kept popping up.

Kate: So, in 2014, I wrote an article with an industry lawyer about regulating emerging risks from oil and gas. And methane was one of our case studies. It turned out this is like a classic example of the need to adapt regulation and industry practice to meet emerging risks. Methane as you know is a primary constituent of natural gas. So, it's a useful energy source. It's also a super dangerous gas.

Kate: And so, commonly, it's been vented over the years from coal mining and other oil and gas activities to prevent explosions and protect workers and communities. But now, we've realized that it's this really potent greenhouse gas as well that's causing a third of the global warming we're experiencing today. We're also realizing we don't have a great handle on how much of it is being emitted or where from in the oil and gas industry, which makes this a really interesting policy challenge.

Kate: So, yeah, when I was at Harvard, I worked a little bit with EPA and the BLM on methane rules during the Obama administration. And ultimately, I ended up spending some time at the International Energy Agency in Paris, studying methane abatement policies for the sector from around the world.

Carrie: It's a great background. And I think for this rule, you and I have been working closely in advance of EPA's release. And I think we saw an opportunity given our background to explore the regulatory options based on the legal framework of section 111, which is where EPA is moving now and with the development of some of the advanced technologies that you were just mentioning. And we convened some technology experts, as well as stakeholders, not necessarily to reach an agreement on what the best regulatory approach was that this Biden administration could take, but rather establish an understanding of what was possible, both technically and also legally.

Carrie: And as you've mentioned, you've been working on these issues for a long time. And you flagged at the Biden administration's focus on methane is really a critical opportunity to drive significant emission reductions, both in the near term and the long term. To kick us off on this and regulatory steps that the Biden administration is taking, do you want to talk about what they did in advance of the proposal?



- Kate: Yeah, sure. So, EPA in 2016 had regulated methane emissions from new oil and gas infrastructure through a funny provision in the Clean Air Act, which we might get to—regulating methane from this infrastructure triggered the need for EPA to regulate the pollution from existing infrastructure as well, which includes nearly a million oil and gas wells. But the 2016 election of Donald Trump slowed that momentum.
- Kate: I think it's really notable that that administration, which was quite aggressive with environmental deregulation left the 2016 methane rules in place until 2020. And even then didn't completely roll them back. But they certainly halted efforts to regulate existing infrastructure.
- Kate: When the Biden administration came in, they signaled really early on that they would not only strengthen those methane requirements for new oil and gas infrastructure, but they'd pick up where the Obama EPA left off and start to regulate the existing sources as well. So, they've spent a lot of this year meeting with states, including states who have been out ahead of the federal government in methane regulation of oil and gas.
- Kate: They've been meeting with environmental justice communities, fenceline communities near oil and gas activity and industry to learn more about the issue. In particular, technologies for monitoring and measuring methane emissions have really evolved quite rapidly since the 2016 rule. And so, the Biden EPA was wanting to learn more about those technologies and methods and figure out how they could incorporate them in this rule.
- Kate: So, EPA issued this proposal in November, asked for a lot of information on a number of grounds, but including in this space about advanced technologies, and they're anticipating they're going to get so much initial information that it might actually ultimately shape where some of these rules are going.
- Kate: And so, they've already flagged that they're going to be in the spring also issuing a supplemental proposal, which will build on what commenters provide in the record for this proposal on the alternative monitoring and measurement technologies and methods. And EPA hopes in the supplemental proposal to get more granular on how it might use these new technologies going forward.
- Carrie: And I think that's where we want to spend most of today. But before we dig into some of those questions, I'll provide a little bit of background on the rule overall. As you mentioned, the proposal addresses methane emissions from new and existing sources, and EPA is estimating that it would result in 41 million fewer short tons of methane emissions emitted between 2023 and 2035. And a large share of those avoided emissions are being driven by the fact that as you mentioned for the first time this is going to apply to existing sources.



Carrie: For new infrastructure, EPA proposes to restore the methane rules, which the Trump administration had rolled back for upstream segments. And the proposal would also strengthen emission requirements for oil and natural gas production and extend the coverage to a lot more equipment than was originally included even in the Obama administration rules.

Carrie: One important thing that I think is important to keep in mind is how this sector and this rulemaking really differs from regulations of other sectors. Specifically, these rules don't say that a source must meet a set emission performance rate.

Carrie: If you contrast that with the power sector, which is very used to EPA saying, a certain type of plant must demonstrate that either on a monthly, annual, or even an hourly basis in some instances, it must make sure that it emits below a certain emission threshold or only emits on rate, pounds per megawatt-hour, basis or a tonnage basis.

Carrie: However, methane emissions from the oil and gas sector is harder to regulate in that way because we don't have good information about what emission rates are coming from various points within the infrastructure and it varies. Do you want to maybe start, Kate, with how the sector detects emissions and what that means for regulation of the sector?

Kate: Sure, and yes, you and I both come from a power sector background. And I think in many ways, this sector, the oil and gas sector, is a lot tougher to regulate for air pollution. The power sector as you said they get numerical pollution standards. And since about 1990, our power plants in this country have had continuous emissions monitoring systems installed on their smokestacks. So, we know in real-time what's coming out of those stacks, not so with the oil and gas industry. It's a much more decentralized, geographically dispersed industry.

Kate: There are many, many more pieces of equipment and activities that can be emitting pollution at any given moment, sometimes intentionally, or by design, sometimes completely inadvertently. There's nothing very predictable or steady-state about methane emissions. You can tell from the sulfur content of coal from a particular mine what amount of sulfur dioxide you can expect to come out of a stack. That's not how it works with oil and gas.

Kate: The same type of component can leak a little or leak a lot at different sites. The same type of maintenance activity can vent a whole lot of methane or not very much. It's really hard to predict. So, with so many randomly distributed potential emission sources it's much harder for EPA to figure out how to tackle. So, for this reason, we've seen in the past and we can expect out of this initial proposal that we won't have just the one emission limit expressed as a rate the way you just described the power sector has.



Kate: There are some parts of the methane regulation of oil and gas that try to approximate that power plant model. So, for instance, there are sometimes various emissions sources that are then tied into a flare at a well site. And that's to be able to combust the methane to carbon dioxide, which is still not great, but a less potent greenhouse gas. But that also starts to approximate a little bit the smokestack model, but there's still many, many other components and activities, even just at a single wellsite that could be emitting.

Kate: So, what EPA has done is instead of setting numerical limits for all of those, which would be really tough, they've been using what are known as work practice standards. So, where there's not really a straightforward pollution control device to install on a discreet, potentially emitting source.

Kate: So, instead, EPA says to an operator, for instance, "Conduct this leak detection inspection twice a year at your wells sites and look for things that might be leaking. And if they are leaking above a certain threshold, repair those." So, it's these, please go do these things, we expect to get the following emissions reductions from it. And it's trying to approximate that numerical limit that you see for other sectors like the power sector.

Kate: It's pretty easy to determine compliance with these work practice standards. Did the operator go out twice a year to the well pad and look at potentially emitting components and log the results? Yes or no. But it's really hard to figure out ultimately, what the emissions or environmental benefit of that was because of the uncertainty about methane emissions.

Kate: The regulator is also in a really tough position of trying to identify everything that might possibly emit and then come up with some engineering or operating practice that would get at that. The goal ultimately, here, what we're seeing still in this proposal of EPA, identifying very specific sources of likely emissions and telling operators to do specific things with them, the goal is really to be able to shift to more of a regime that looks like the power sector regime where EPA could set numerical limits on methane.

Kate: For instance, a well site cannot have more than X tons of methane emitted to the atmosphere in a given year. The challenge has been, we haven't been able to monitor and estimate the methane emissions leaving a full well site with a high enough level of confidence. And so, regulators have been hesitant to move there. But that's where the technology has been advancing really quickly, which makes this a really exciting policy space.

Kate: At what point can we move away from please replace every single valve on this site that might possibly emit to a regime where EPA says, "Don't let more than X tons of emissions leave this well pad." And we leave it to the operator to have good engineering systems and practices to find those big leakers or big emitters and swap them out to get the deepest environmental benefit at the lowest cost.



Carrie: And what are some of the technology advancements that we are seeing in the industry?

Kate: Yeah, what's interesting is they're not necessarily in and of themselves new technologies. It's that technologies are getting better. We're getting sensors that have lower detection thresholds so they can spot smaller amounts of emissions. We're getting sensors that can do a better job of estimating the volume of emissions that are coming off of a component or out of an activity. And what we've seen a lot of is a lot of change in the delivery systems for sensors. So, how we're taking measurements.

Kate: So, for instance, continuous monitors are getting better and cheaper. And so, we're actually seeing, while you couldn't put a sensor in every single piece of equipment that might possibly emit, we're seeing some operators, subscribing to services, where they have several continuous monitors, for instance, at a well site, and from that can triangulate if they see a big hit of methane, they can figure out much more quickly if there is something that is emitting that shouldn't be.

Kate: We're also seeing just better, more sensitive and lower-cost sensors, which are then being deployed in drones and in airplanes. We're seeing the development of new really interesting protocols about how airplanes would fly over an oil or gas producing basin, how often they would fly over in order to capture some big emitters, where the benefits start to level off as you go more and more frequent. So, really interesting protocols.

Kate: Also, learning how to combine these flyover technologies with then on the ground follow up to really find specifically what's going on, why are we seeing suddenly a giant hit of methane off a particular site, how quickly can we follow up and figure out where the problem lies?

Kate: Finally, we're also seeing a lot about satellites in the news. And this has been grabbing a lot of the headlines. We're now getting a lot of satellites that are able to detect super emitter events of methane. In the near term, we're not likely to see satellites displacing some of these closer to the ground technologies. But satellites are a really nice big from an atmospheric level, constant changing of pictures about what methane is looking like.

Kate: And we've found in the last couple of years that satellites have been able to pick up really big super emitting events and capturing them when otherwise it looked like operators and regulators either weren't seeing those events on the ground or weren't responding to them.

Carrie: And that's really helpful background for what EPA was looking at when they were thinking through this proposal and what the technology advancements might mean for regulatory framework. The other piece that's important background to keep in mind is normally when a new administration comes in,



like the Biden administration that wants to change a regulation, they have to propose the repeal of the prior regulation and then propose a replacement.

Carrie: This time Congress, however took the unusual step of using the Congressional Review Act or CRA in this past June to disapprove one of the rules the Trump administration finalized in 2020 what was referred to as the policy rule. As a result, EPA can now treat that rule as though it had never taken effect. In other words, Congress eliminated the need for EPA to take the regulatory step of repealing the prior rule.

Carrie: Instead, EPA now only needs to move forward with any changes it wants to propose to the prior 2016 rule that you mentioned based on the technology advancements and additional information that we now understand about the sector and its emissions.

Carrie: A CRA is rarely used, though, because one consequence is that the agency cannot issue a substantially similar rule as to the one that was disapproved. So, in this instance, EPA and the White House are arguing that even under a future administration, EPA cannot propose a rule that deregulates methane emissions. The CRA also enables EPA to argue that Congress clearly intends EPA to regulate methane emissions from the oil and gas sector.

Carrie: So, with that background, Kate, is there anything you'd add? Or maybe we can start with what EPA is requesting comment on related to what are the known emissions? In other words, what is EPA hoping to get information for from those sources?

Kate: Sure. Just a comment on the regulatory background, I feel like EPA's actions over the last six years on methane for oil and gas could be a really great law school, like administrative law school exam. It's just been a lot of intrigue, and even with Congress getting involved here. So, yeah. And the meat of the proposal, EPA... I was talking before about, we have known sources of emissions, and then there's a lot we don't know. So, EPA is still doubling down even on regulating known sources of emissions.

Kate: So, there were ones that were regulated in the past. For instance, in 2016, EPA asked operators to swap out high bleed controllers, these pneumatic valves that work by periodically expressing a little bit of methane, switching them out for ones that emit less methane.

Kate: They asked them to take some steps to control emissions from storage tanks and to capture methane at oil wells when they are completing the well, right when you're beginning to produce at a well, both product starts to come out. And methane often is coming out at that time so they wanted them to capture that.



- Kate: They've enhanced some of the requirements around those. And then, now they've added new activities and new sources that they know are big sources of methane. And they want the operators to get a handle on those too. So, different maintenance activities, ongoing production of associated gas at oil wells, often wells are drilled for oil, but gas is co-located there and is coming out as well. EPA wants to make sure that companies are capturing that and putting it in a sales line or using it on site.
- Kate: And they're looking for even more information for that supplemental proposal for additional sources like abandoned oil and gas wells, pipeline maintenance activities, things like that. There's this constellation of leaking components that they know are a constant chronic problem at least at oil and gas well infrastructure. And so, they don't know with precision when and where something is going to leak. But they know that this is a category of issues.
- Kate: And so, I had talked about this in the past, EPA has had this work practice standard of, for instance, at an oil or gas wells site, that twice a year operators would have to walk around with handheld devices and point them at a list of components that they know might leak and see if they're leaking. And if they are above a certain level, they'd have to repair them. So, that kind of regime has been somewhat effective. But it begs two questions, right?
- Kate: First, what if something starts leaking the day after one of these semi-annual inspections? Does it sit there unabated for six months? That's a problem. Two, what happens if a leak happens at a piece of equipment that wasn't on the list for the inspectors because people didn't expect it to be a source? For instance, a huge source of methane emissions that we're finding more and more through the research are flares at sites which are there to burn methane and combust it to CO₂ and make it a less potent greenhouse gas.
- Kate: Often those flares are not lit, and methane is just venting through them. That's not typically something that they're looking for on those leak detection inspections. And so, EPA also in this proposal is looking to enhance and broaden those leak detection regimes, moving them at oil and gas sites from two times a year to four times a year, including on the list, potentially malfunctioning components, and not just that list of things that might leak. So, broadening the universe of what's getting inspected.
- Kate: And this is also where EPA is signaling a real openness to alternative monitoring technologies and methods. Are there other ways that companies could be detecting these leaks or these malfunctions perhaps more quickly to get deeper reductions over time? So, thinking about, for instance, monthly aerial flights over a well pad to catch emissions that may have happened.
- Carrie: And I think that's a tension that EPA, that we've heard EPA have is that how do you incentivize these new technologies that may detect more greater emission reductions in terms of tons, but not lose those little things? Can you talk a little



about how they're balancing those factors? And they included the detection limit, so if a technology meets a certain threshold, then they may allow it to emerge. How is EPA looking for feedback from stakeholders on those tensions?

Kate: Yeah. So, as you said, EPA in the proposal said, currently, we've got these two types of handheld devices that we use for our semi-annual surveys that oil and gas well sites, we're now proposing, you have to do these inspections using those two devices four times a year. But in addition, EPA says, we're interested in learning more about what alternative monitoring technologies could do, and are trying to figure out the tradeoff between something that might be a little bit less sensitive. So, it might not detect the smaller emissions because it's not held by a person standing right in front of a piece of equipment, but is attached to an airplane flying above the site. How do we balance that lower sensitivity with higher frequency that for the same or less cost companies can be hiring flyover services to detect on a monthly basis?

Kate: And so, what EPA suggested in the proposal, they wanted to hear people's reaction to what if we said any technology that could at least achieve a sensitivity threshold of 10 kilograms of methane per hour, should be automatically allowed or considered by EPA and the state regulators if an operator brings that to them?

Kate: In the alternative, EPA is, again, grappling with this sensitivity versus frequency issue, the more often you go out there, the faster you'll find a leak. But if you're going out there with less sensitive instruments or just instruments that are being used at a further distance from the site, you might not get all the little sources of emissions.

Kate: EPA is asking whether it would make sense to have some matrix for approval that as a piece of equipment as a sensor is less sensitive and picking up fewer of the smaller emissions, should it have to be deployed more frequently to make up for that? And so, that is also something that EPA has teed up in the proposal asking technology companies, industry, and others, researchers with information about how these technologies work, wanting to figure out, is this a good way of thinking about it?

Kate: Do we say that anything that is more sensitive, or at least as sensitive as 10 kilograms-per-hour of methane is good? Or do we create this more nuanced matrix of depending on what your sensitivity is, it might not even be as sensitive as something that could detect methane at 10 kilograms per hour. But then, we're just going to make you deploy it a lot more often, so that you're capturing the big leakers so often that you're making up for missing the little ones.

Kate: Really interesting that they've put both of these frameworks forward. And I think there's a lot of opportunity for technology companies and researchers



and industry to provide information in the record to help EPA figure out where to go from here.

Carrie: And I think it's interesting because if they do create this matrix, it allows EPA maybe to say, "Here's your options", and industry gets to decide whether it's cost-effective or not, which may change in the future. But then, EPA doesn't have to go back and do a new rule. But cost is a factor of how they should set that standard.

Carrie: But if they can set the standard in terms of as you're mentioning frequency and detection, and then industry could decide what makes sense to them based on their operations and their facilities, I think that creates an interesting opportunity for the regulation to evolve with technologies.

Kate: Absolutely. And it's interesting. So, even under current methane rules for EPA, there's this theoretical on ramp for these alternative methods. There's this thing called the alternative method of emission limitation process. This is actually something that industry was not ever able to actually use successfully at EPA because the bar is so high, it requires field data for over a year. And it is only good for the very specific well site where you demonstrated that field data, requiring companies to go in and submit a year of field data to EPA for every single well pad, for instance, that they might want to use new technology, that has just not been feasible. And so, no one had used that method.

Kate: The Trump administration, in some of their rulemaking in 2020, had tried to lower that barrier a little bit. And so, some companies have tried to get alternative technologies through EPA under the slightly easier process. To date, no one has been successful. And so, this is really signaling EPA's interest and really on ramping in a very real way these alternative technologies.

Kate: So, rather than having this theoretical on ramp that no one ever seems to be able to drive on to, this is really saying, "Let's be a lot clearer upfront about the performance metrics that we would expect of technologies to monitor and detect methane."

Kate: But then yes, exactly as you said, Carrie, like then once you've got those metrics in place as technology continues to advance, companies could take these technologies, and with pretty minimal demonstration to EPA of their effectiveness, grab them from the shelf, deploy them, and hopefully continue to get deeper methane reductions at lower cost without EPA having to rewrite the rule or go through a laborious technology approval process.

Carrie: I think the other thing that it's opening the door for that's interesting is related to environmental justice and the community empowerment. Do you want to talk a little bit about how they're trying to get information about what how communities might use this information?



Kate: Yeah, this is really interesting. So, traditionally, Clean Air Act compliance for oil and gas has just necessarily been something between the regulator and the operator. So, the operator, for instance, would do these leak detection inspections and log what they found and submit that to the regulator, the regulator would determine whether they had complied with the process or not.

Kate: What EPA is proposing in this regulatory package is pretty transformational. And it's about putting information in the hands of fence-line communities to actually play a role in identifying leaks and triggering a regulatory response. So, with the proliferation of new technologies, sensors getting a lot less expensive, the ability for someone to drive by with a camera or a sensor, there is more information that is available to the public.

Kate: EPA has struggled for some time across a lot of industries to figure out how communities could play a role now that there are these cheaper detection technologies where a community group could find out that there's pollution happening. It's been difficult for EPA to figure out how to build that back into a regulatory process.

Kate: Here, EPA is proposing to do just that and to set up a process where if a community saw that there was a big plume of methane from an oil and gas facility that they could actually let the company know and the regulator know and this would trigger a response by the company to actually address the emissions. That's a really interesting and exciting path forward to think about actually empowering community groups to play a formal role in the regulatory process.

Kate: It's only becoming possible as technologies are becoming less expensive and more easily accessible to the public. Also, as we start to see more publicly available data, for instance, from satellites, and it really marks I think a watershed moment in regulatory policy development. And it would be really interesting to see how this works.

Kate: EPA was quite vague about it for this initial proposal. We expect to see a lot more detail in the supplemental proposal. And a lot of it will turn on what EPA hears from commenters, both community groups on what they would like to see in that regime and from folks who know a lot about the technologies and can say, "This is or is not a role that these technologies could play."

Carrie: And the other key piece of how these technologies will play is also related to the state plans for existing sources. So, as you mentioned, one reason, this rule is expected to achieve the significant emission reductions is because of its application for existing sources, and this is the result of this fact that 111(d) in the Clean Air Act triggers this obligation for EPA as soon as it regulates methane emissions from new sources.



Carrie: But 111(d) sets up this partnership with states and EPA, where EPA sets the emission guidelines and then states craft the implementation plans, and the state plans must reflect the degree of emission limitation achievable through the application of what's called the best system of emission reduction or BSER. And that's what EPA determines.

Carrie: States, though, they consider units remaining useful life and other factors which EPA acknowledges can justify some deviation from the emission guidelines that EPA establishes. But EPA in this proposal is establishing presumptive standards to assist states in developing their state plans. And these presumptive standards essentially can serve as a model rule to streamline the state plan process.

Carrie: But, Kate, one of the aspects you and I have discussed is whether the state plan process allows some states to be more creative or allow flexibility or leverage their own potentially more stringent approaches to regulating methane as there are states that have already moved forward on some of these rules. And we've also considered whether these state-federal partnership allows the regulations to evolve with technology advancements, because states will have to develop the plans after EPA finalizes the rule in 2022.

Carrie: So, as stakeholders, whether they're states, EJ communities that you've talked about, or some of the industry, or environmental NGOs, consider this process, are there any factors or comments you think they'll be important for stakeholders to keep in mind as they develop their comments?

Kate: Yes, I think this part is really interesting. This is another area of first impression. EPA hasn't regulated existing oil and gas infrastructure before. And they, as you said, have this partnership with the states for regulating any existing sources under 111(d). I do think there are a few things that commenters could consider offering now. My guess is we will see more detail on that 111(d) piece and on state plans in the supplemental proposal.

Kate: But thinking about now the comment period and how to help inform EPA's thought process, I can think of three things in this space. One, what we were talking about earlier about accommodating new technology and new monitoring methods without having to go back and rewrite a rule, that is going to continue to be a really important strand to pull through to the state plans as well.

Kate: And EPA and the states will want to make sure that technology can continue to evolve, and that as long as it meets certain basic standards, that companies can adopt these new technologies to improve the environmental outcomes, states are probably going to have some proposed differences to how they would approve technologies or what they might be looking for. And so, it'll be really interesting to see what EPA sets out as this is the floor. But beyond that states can potentially adapt their technology approval processes.



- Kate: I also think related to that is just understanding the timeline for state regulation of existing sources. So, on the timeline EPA is on right now, it would likely finalize this package by the end of 2022, perhaps beginning of 2023. The federal rules for new oil and gas infrastructure would become effective soon after. But the final rule would start a process for states to put together implementation plans for existing oil and gas infrastructure, which could take another nine months to two years, depending on the timeline that EPA sets out.
- Kate: So, I think it'll be really interesting for commenters to think about not only what is technology capable of today or even next year, but what are we seeing coming down the pike in terms of monitoring technologies and methods that might be ready for primetime by 2024, 2025, 2026, when the EPA has approved state plans and the existing source regulations are full speed ahead?
- Kate: And so, when we were talking earlier about that matrix and wanting to make sure there's this process for bringing in new technologies to the extent that we think coming around the corner there are additional technologies that might be somewhat different.
- Kate: It would be really useful to think about how do we set up a matrix today or a set of minimum standards today that would be able to recognize the attributes of those even newer technologies and methods and be able to incorporate them in the regulatory regime without an AMEL separate approval process or without having to rewrite a rule.
- Kate: And finally, the third thing here, there will be technological constraints to this. There will also be lots of debate about the legal and regulatory constraints of 111 of the Clean Air Act. But it'll be interesting to see the extent to which there could be some flexibility of performance standards across new and existing sources.
- Kate: So, for instance, if a plane is flying over to do leak detection of an oil and gas basin, the plane doesn't care what on the ground is considered a new source versus an existing source under a regulatory construct. They're just going to be able to see where the emissions are.
- Kate: And so, I think there is some question and I'd love to see developed by commenters and then in the record, a discussion of could the states have flexibility to set more stringent methane standards that enable companies to average across their new and existing assets to overall bring deeper methane reductions, but perhaps in a more cost-effective way?
- Kate: And again, there'll be a lot of debate about whether the technology enables us to do that and whether the regulatory construct here or the context here enables that, but I think that'll be a really interesting discussion to be looking for.



- Carrie: Yeah. And on your second point on the timing, I think one thing that EELP has been working on for all federal and state rules, including this methane rule is to consider whether the rules are legally durable and the timing that you mentioned is important. Meaning, can these rules be structured so that we expect it more likely than not the courts will largely uphold the standards? Industry needs this regulatory certainty that you just mentioned over that timeline to make the long-term investments in the technologies and to deploy them.
- Carrie: And then, stakeholders also want to ensure that the rules deliver the emission reductions from these sources to effectively address climate change and reduce methane emissions. And one key step to support the legal durability is a robust regulatory record, which is what you've been talking about to ensure that the final rule is based on legally and technically sound information.
- Carrie: So, the comments by stakeholders to support this proposal and then the anticipated supplemental proposal, and then the final rule is something that's really going to be important. I'm looking forward to continuing to work with you on that. Is there anything we've missed today, Kate, that you'd want to flag for stakeholders to keep in mind?
- Kate: Well, first, I'm also really looking forward to working on this with you. It's been great to work with you in our various capacities over the years. And this is just such an interesting challenge. I don't know if I have anything to add. But just to hit on a theme here, I mean, this really is a fascinating space for policy because the science, our understanding of methane emissions is evolving so rapidly, and in response, methane monitoring technologies and methods are evolving rapidly.
- Kate: And so, figuring out this will be... Not every commenter will do this. Some commenters will be looking just at the science. Some will be looking just at technology development. Some will be looking just at cost and feasibility from an industry standpoint. Some will be looking at the environmental opportunities.
- Kate: But at some point, I feel like the record is going to need to cross all of those silos and really show that uptake of alternative monitoring technologies can be done for deeper methane reduction. So, better environmental outcomes at lower cost, and in a way that fits section 111 of the Clean Air Act. So, it's a challenge.
- Kate: I think it is a possible one. And I think with the right record, EPA can move forward in a really robust way and write a legally durable rule, but it's a really fascinating interdisciplinary challenge that we're working on here and I'm really glad I'm doing it with you.



Carrie: The same. I think that's a great point to end on. But thank you again for joining me today and we'll keep going.

Kate: Sounds great.

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