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Oregon's Clean Fuel Standards with Abby Husselbee and Cory-Ann Wind – November 17, 2022

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Abby Husselbee: Welcome to Clean Law from the Environmental & Energy Law Program at Harvard Law School. I'm Abby Husselbee, a legal fellow with EELP, and in this episode I'll be speaking with Cory-Ann Wind. Cory-Ann works for the Oregon Department of Environmental Quality as the Oregon Clean Fuels Program manager. Cory has worked with ODEQ for over 29 years, the last 12 in fuels transportation and climate policy. Cory holds a BS in bioresource engineering from Oregon State University. Cory and I will be discussing Clean Fuel Standards and their benefits, Oregon's program and history, prior legal challenges to the program and some lessons learned. We hope you enjoy this episode.

Welcome, Cory-Ann. Thank you so much for joining us on Clean Law. To start out, I think our listeners would love to hear more about your background and interests and specifically what piqued your interest in environmental policy.

Cory-Ann Wind: Yeah, sure. Happy to have you here today. By degree, I have a bioresources engineering degree from Oregon State University. And so, I think my story is one of when I graduated from college, I had no idea what I was going to do and I ended up taking an internship with the Environmental Protection Agency and started learning about emissions from transportation sources. And when I was done with that internship, I came back to Oregon and thankfully had an opportunity to join the Department of Environmental Quality, but with my engineering background, that meant I did a lot of compliance work and writing permits and doing inspections and worked my way up from there.

I did a lot of that with our industrial sources in the Portland area, and then I came to manage that program. And then I think as life happens, ended up having two children and decided to go back into staff work and policy work. And that's how I landed in the Clean Fuels Program. So, that was about 2009 when the bill in the state of Oregon enabled the Low Carbon Fuel Standard to be implemented, and that coincided with going back to policy work. And so, I think it was a fortuitous chance that I came upon the Clean Fuels Program and it's been my life for the past 12 years.

Abby: So before we get into the economic and legal details of a Clean Fuel Standard that we're going to be discussing today, I thought some background might be helpful for our listeners who may be less familiar with Clean Fuel Standards and how they work. So understanding that there are many details that come up in running the program, and we're not going to cover them all in this episode, can you give a brief explanation of the policy, how it works, and some of its key design elements?



Cory-Ann:

Yeah, sure. So the Oregon Clean Fuels Program implements what we refer to as a Low Carbon Fuel Standard. So for the state of Oregon, what the goal of the Clean Fuels Program is to reduce the carbon intensity, or in other words, the life cycle greenhouse gas emissions of Oregon's transportation fuels. It does so by creating annual standards that decrease over time. So in Oregon, our program started in 2016 and we have several goals into the future. So by 2025, the goal is to achieve a 10% reduction in carbon intensity and then out going into 2030, a 20% reduction, and then by 2035, it's a 37% reduction. So these reductions all occur from a baseline year of 2015. How this works is that providers of fuel into the state of Oregon, if you are an importer of fuels, if you own title to the fuels as it crosses the state line, that is who we regulate.

And so, it works on a system of credits and deficits. And a credit and a deficit is equal to a ton of greenhouse gas emissions. And so, what happens that for every different kind of transportation fuel that is provided, we assign a score to that, it's a carbon score. So for gas and diesel, those are your typical petroleum-based fossil fuels, those are higher carbon, and so they generate deficits. Other transportation fuels are lower carbon. So take for example, biofuels, ethanol, biodiesel, renewable diesel, other alternative fuels such as natural gas, renewable natural gas, propane, hydrogen, electricity, those are lower carbon, and so they generate credits. And so, at the end of the year, the regulated parties who are these importers of fuels basically have to generate enough credits to offset the number of deficits that they generate. So at the end of the year, if you're net zero, means that you're in compliance with our standard, you can over comply and you can generate and bank extra credits for future use because over time then the standard gets more and more stringent and you're going to need more and more credits to offset those deficits.

Abby:

That was a great explanation. One thing that I think comes up a lot as a key feature of Clean Fuel Standards is that they are technology neutral, meaning that any fuel is judged based on its carbon intensity. But some of our listeners might be specifically curious about how a Clean Fuel Standard can support investments in electric vehicles or EV infrastructure or even support decarbonized electricity. Are you able to talk about any of those benefits?

Cory-Ann:

Yeah, sure. So like you mentioned, the policy is fuel neutral, so I referred to before some maybe biofuels like ethanol or biodiesel or renewable diesel. So the value of the liquid biofuels is that they are lower carbon, they can be blended directly in with gasoline or diesel so that the internal combustion engines that are in today's passenger vehicles, that is a way for them to become cleaner and lower carbon. Generally speaking, ethanol is about 40% less carbon than gasoline. And for biodiesel, renewable diesel, they can be anywhere between 40% to even 80% cleaner than diesel that they would replace. So that is a way the more of these biofuels you use, then you can lower the carbon intensity of the fuel that operates those vehicles. What's really good about this too is that electricity is also a lower carbon fuel. So for a state like Oregon, we do get a large percentage of our electricity from renewable resources.



So on average, electricity, just a statewide electric grid average is about 70% cleaner than the gas or diesel that it replaces. And so, because it's lower carbon, it generates credits in the program and those credits can be sold to somebody that provides fossil fuels. And then it's the revenue from those credits that can be used to offset whether it's charging that's necessary for those vehicles or the vehicles themselves or any other kind of costs that are associated with electric vehicles. We know that the upfront costs for the transitioning to electric vehicles are more, but in the long-term, the fuel costs, the operating costs, the maintenance costs are cheaper, and then the revenue from the Clean Fuels Program just helps to bring those costs even further down.

Abby: So we've talked a bit about some of Oregon's goals in implementing its Clean Fuel Standard, but I thought we could dive more into some of the benefits. So just as some background, California, Oregon and now Washington have Clean Fuel Standards, but this might be important because many other states have introduced legislation, have executive priorities or are otherwise considering adopting a standard. And so, given that there are states who are currently considering this, I think it might be helpful for any of the advocates or policy makers who might be listening to hear about broadly some of the benefits of a Clean Fuel Standard. So now the Oregon standard has been operational for a few years, can you describe some of the benefits that Oregon has seen or expects to see in the future?

Cory-Ann: Yeah, absolutely. I think we'll start with greenhouse gas reduction because that is the primary goal of the policy. So we have been implementing the program since 2016 and over the first years of the program, we've seen reductions of greenhouse gases from Oregon's transportation fuels by about 6.5 million tons of greenhouse gas emissions. And so, that's a significant reduction for Oregon's transportation fuels. But in addition to the greenhouse gas reductions, the clean fuels that are lower carbon also are lower in the tailpipe emissions as well. So typically in transportation, there are significant emissions of fine particulate matter, nitrogen oxides, carbon monoxide, and so the lower carbon fuels also reduce those pollutants as well.

For example, when we recently expanded our program to achieve 37% reductions to 2035, we commissioned a study that we worked with the researchers at University of California at Davis. Part of that work was to determine what the benefits of reducing those tailpipe emissions were. And out in 2035, the estimate is about \$90 million per year in avoided health costs would benefit Oregonians and especially Oregonians in communities that live closer to the transportation corridors where the gas and the diesel trucks frequent. These communities have been historically overburdened by these transportation emissions. And so, by cleaning up those emissions, the reduction in the tailpipe emissions and then the health savings benefit those communities as well. It is a huge issue for environmental justice in the state of Oregon that we address these emissions, and so the Clean Fuels Program is core to that.

In addition to improving the air quality and reducing the health costs, the Clean Fuels Program has been key to spur innovation and investment in the state of Oregon as



well. Since the program has started, we have seen several new fuels being available to the market, and the diversity in the market helps stabilize the volatility of the transportation fuels as well. We've seen significant increases in investments for electric vehicles and electric vehicle charging, but we've also seen renewable diesel come into the market where we never had that before, renewable natural gas that we're getting from landfills and wastewater treatment plants and anaerobic digesters. And we're also seeing renewable propane, which is something that didn't exist in the program before the Clean Fuels Program came to be. All of those fuels have emerged in providing lower carbon and a lower polluting options for the fleets that use those vehicles too. So for example, there's transit buses and school buses and garbage trucks that can take advantage of the renewable as opposed to the fossil versions of those fuels, so that's even cleaner than they were before.

Abby: So you touched on the volatility of the fuel markets prior to some of these alternatives coming in. I wanted to address a myth that often comes up during the discussion of Clean Fuel Standards, which is that the programs may drive up the price of fuel in the state, but there's data to show that that's not necessarily the case or what Oregon has seen. Can you speak to that at all?

Cory-Ann: So it is a myth that the Clean Fuels Program can add onto the cost of gas and diesel. And I think the primary thing that I would add onto that statement is if you stick with the traditional fossil gasoline and diesel, then yes, there is a potential cost increase because what there is for the providers of that fuel, it does cost money to purchase the credits or to have the lower carbon fuels to be able to be comply with the standard. In the first six years of the Clean Fuels Program, it has added about 5.5 to 6 cents per gallon of gas or diesel to the cost if that fuel is still the base fuel. The way that the Clean Fuels Program actually helps bring down the cost is an example where the cost of the liquid biofuels are actually cheaper to make than fossil gas and diesel.

And then also that the credits that are associated with it being lower carbon, it actually additionally brings down the cost of those fuels as well. So, for example, in Oregon, we require 5% biodiesel be blended with all of the diesel in the state, but most commonly we have a lot of fleets and a lot of truck stops that actually offer a 20% biodiesel with an 80% diesel. The biodiesel that is used is lower carbon, so it generates credits and so that the price at the pump for B20 is actually cheaper than B5. And as the standard becomes more and more aggressive in the future, it will generate more credits.

And again, that is a great way for the Clean Fuels program to actually bring down the costs of future liquid biofuels. I think the same thing for electricity as well as we transition from gas and diesel vehicles to electric ones, the cost and the credits of the electricity as a fuel are much cheaper. And so then, if you look at a total cost of ownership over several years, not just the upfront capital cost that it costs to buy that electric vehicle, that total cost of ownership is actually lower as well.

Abby: So we've talked now a bit about the substance of what a Clean Fuel Standard is, and I thought we could talk more about the history of Oregon's Clean Fuel Standard and



how it came to be. As I mentioned, a lot more states are considering adopting Clean Fuel Standards, and so, as policy makers and advocates debate legislation and executive priorities, I think that there's a lot of consideration about what the process is and what that might look like. So I would love to hear just a brief history of how Oregon's Clean Fuel Standard was passed and implemented.

Cory-Ann:

Yeah, sure. So the history of the Oregon Clean Fuels program goes back to 2009, and in that legislative session, it was a time where California had recently adopted early actions for their climate scoping plan. And so, as many states do, we do look to California quite a bit for leadership in policy space. And so, there was a list of actions that California took, and we basically brought that list up to Oregon and considered things like a cap and trade program, a Low Carbon Fuel Standard. Those are some of the bigger ticket items, but there were some other things like truck efficiency standards. We considered the list of the different kinds of early actions, and the one that actually ended up passing the legislature in 2009 was the Low Carbon Fuel Standard. So we did need statutory authority for the state of Oregon to implement this. So that's what that bill did, that was House Bill 2186. So it directed the Environmental Quality Commission, who is our rule making body, and then the Department of Environmental Quality to design and then propose rules for the Low Carbon Fuel Standard.

We ended up working with our stakeholders for several years designing a program. We took what California had adopted, but then considered special circumstances for how the fuels market worked in Oregon, it is different, and we have different stakeholders, we have no refineries, so all the fuel is imported. Our fuel providers are very large and very small companies. And so, there's a lot of considerations that we had to consider that basically led into a program design that I would consider about 90% based on what California's Low Carbon Fuel Standard is and 10% customized for Oregon. I think that has worked really, really well, and it's something that I always tell other states that are interested in pursuing a Low Carbon Fuel Standard.

It doesn't have to be carbon copy of what California has, but why recreate the wheel for the core program design elements when you don't have to. The market knows what the general rules of the game are, they know how to value the fuels, they know how to work the reporting tool. That's the mechanism where they report to us how much and different kinds of fuels. And so, if you stick with those core features and then design in customizations for what your state and your legislature is interested in, I think that's a really good calculus. For example, in the state of Oregon, we do have different exemptions for different end fuel uses or we have some safeguards that are built into the Oregon program where we look at a fuel supply forecast on an annual basis to ensure the feasibility of the future year standards. This is a way that our legislature wanted to make sure that there's enough of the cleaner fuels in the market to be able to support the standards. And so, that's something that we've built into our program.

For Oregon, it has always been a core climate strategy, but I also feel that it's a really good policy to talk about economic development, to talk about air quality for the state



that you're in as well, and just the diversification of the different kinds of fuels, especially for states that want to lean in very heavy with zero-emission vehicle regulations. It's a way to complement those policies and bring down the cost of what it takes for the fleets to transition to those technologies.

Abby: That's really helpful. I mean, I think now states have the benefit of not only California, but they can now look to what you've done in Oregon in designing a program, and now Washington is designing a program. So there are these great examples to take from. So then, in the years following the passage of the Clean Fuels Program, Oregon's program faced but ultimately defended against some legal challenges. So to the extent you're able to, could you just walk us through an overview of what happens with those?

Cory-Ann: I think the litigation that has happened in Oregon very much mirrors the litigation that happened in the state of California. So we did have challenges on Dormant Commerce Clause issues related to the Clean Fuels program, and we were successful in defending against those challenges as well. I think the little nuance that was different from Oregon versus California was the fact that there were no in-state refineries in Oregon. And so, again, this issue that all of the fuels came from out-of-state and whether the policy chose winners and winners being in state production as opposed to favoring those in state facilities versus the out-of-state facilities. But I think it was clear in both the California and the Oregon challenges that it is the math that is the core of the Low Carbon Fuel Standard that dictates who the winners are. So it's clearly about how low carbon your fuel is, it's not location specific.

Transportation emissions do play a role in that calculation. So if you had the exact same facility out-of-state versus in Oregon, yes, that means that that out-of-state facility would have slightly higher emissions. But again, that is a factor of the math of the low carbon fuel, not a state having a preference that the in-state producer is favored. We did have one additional state challenge that was basically a challenge on the procedures that we adopted the Clean Fuel Standard in Oregon, and so, that was administrative. And as we proceeded with administrative updates and rule makings, we basically corrected that issue. Our initial adoption of the program, we failed to consider one of the factors that our original statute required us to do. So upon subsequent rule making, we address that.

Abby: Yeah. I think that's important information for states that are considering these programs and weighing the risks, but also another opportunity for states to learn from what you have been through and what California has been through and think about how the programs were designed to withstand those challenges and think about how they might design their own programs. So then moving forward to the present, to 2022, Oregon is going through an expansion rule making. Could you talk through some of the changes that you're expecting through that expansion rule making and what you expect the rule to look like?

Cory-Ann: It's a big step forward for the Oregon program. So we started implementing in 2016, so the original 10 years of the program did go from 2016 to 2025. One of the critical



design features of the Clean Fuels Program is just that it provide the long-term certainty to the clean fuels market that it really needs to expand and to invest in future capacity and just to continue to lower the carbon intensity of the fuels. And so, we began in 2021 to expand the program, so beyond the initial 10% requirement and then beyond the 2025 timeframe. So we actually just recently completed our rule making. In late September, we took rules to our rule making body, which is the Environmental Quality Commission, and have now adopted new standards, as I mentioned at the beginning of the program. So into 2030, it would be to achieve 20% reductions, and in 2035, to achieve 37% reductions.

So on its face value is almost quadrupling of our standards. The program has been very successful in the beginning years, and we can see the trends of the fuels working into the future. So we did technical analysis of what we think the fuels and the vehicles are going to be in 2035, and that was the assumptions that we had put into our models. Oregon is Section 177 State. We have already adopted the Advanced Clean Trucks Regulations, and we are working on adopting the Advanced Clean Cars II Regulations. So at its core, we know that the fleet in Oregon is going to be transitioning to electricity. Those two regulations alone would allow us to achieve 25% carbon intensity reductions in 2035. But in Oregon, we are interested in more than just supporting the zero-emission vehicles regulations. Even if as implemented, these regulations will mandate high percentages of ZEV vehicles out into the 2035 future timeframe, that also means that we will have liquid fuel vehicles for decades to come.

And so, we really want the Low Carbon Fuel Standard to provide additional incentives for ethanol, for biodiesel, for renewable diesel, for the renewable natural gases, and propane and all of those fuels. We needed to go beyond 25%, and so when we added in assumptions about what we thought likely carbon intensities of future biofuels and blend rates, how much more can you blend into your fossil fuels? That's where we landed at 37% reductions in 2035. So I think it balances some of the expectations about how vehicles will transition to zero-emission, but continuing to have lower carbon liquid fuels in the market.

And what was coincidental, but actually works really great from a policy standpoint is 37% life cycle Greenhouse Gas Reductions translates to almost 50% tailpipe Greenhouse Gas Reductions in 2035. And so as many states have and as we have in Oregon, our climate reduction goals for the state is to achieve 50% reductions by 2035 and 90% reductions in 2050. And so, this 2035 Clean Fuel Standard now aligns exactly with what the state's climate goals are. And so this is a way where in Oregon we can assure that the transportation emissions will play its role in the state meeting those reductions.

Abby:

So we spoke earlier about some of the air quality benefits and how those might assist communities that have been historically overburdened with pollution as states consider how this program might serve some of its environmental justice goals. Are there any environmental justice initiatives within Oregon's Clean Fuels Program that they could consider?



Cory-Ann:

There's a special program that lies within the Clean Fuels Program that we've designed to really take advantage of the fact that credits being generated in the electric vehicle space get used in the right ways. And so, what happens is that for electric vehicles in Oregon, for the charging of those vehicles that happen at home, the residential charging, those credits are generated by the state's electric utilities. This is not a mandatory requirement, it's voluntary. And so the utilities can opt in to generate those credits, and then they can take those credits and then sell the credits and then create portfolios for which they want to spend that revenue. But what happens is that there are sometimes where the utility doesn't opt in, sometimes there are utilities where there are just not that many EVs or the electric vehicles are not their priority, and so, there are some credits that would otherwise be stranded.

And so what the Department of Environmental Quality then does is we'll take those stranded credits and we go out and contract with an entity that basically serves as an aggregator of those stranded credits. So there's kind of a twofold purpose there. It's like then we have those stranded credits and we assign it to this aggregator and they sell those credits and then they work with the department as far as a budget and a work plan for how to spend that revenue. And so, it's in that interaction that we have with this aggregator to design programs that would benefit environmental justice communities. And so, what that has led to is a series of pilot projects with different community-based groups on purchasing electric vehicles and chargers, doing in-state outreach and education about the benefits of electric vehicles. A lot of pilot projects for new technologies such as like e-trikes or e-bikes, or we've had a really successful pilot in agricultural tractors.

So a way that we can reach out to our agricultural parts of the state and really promote small scale sustainable farming by the use of electric ag tractors, those kinds of projects where it's like they're new and emerging and we need to do a little of just establishing that it can be a viable technology moving into the future, but with the environmental justice focus. And so, that is something that I think is going to become a little bigger piece of the Clean Fuels Program as those credits and as the revenue from those credits increase and then we can do more work to support these environmental justice projects.

Abby:

Is there anything else that you would like to add today before we conclude?

Cory-Ann:

I think I just want to end with, for the state of Oregon, the Clean Fuel Program has been very successful. We are a small state compared to California, we're probably about 10% of the fuel consumption, 10% of the amount of vehicles, etc. As I mentioned before, we don't have in-state refineries. And so, for a state like Oregon to tackle a really difficult transportation sector to decarbonize, I think a lot of people had their doubts when we first started and we've figured out ways to leverage the fact that the producers of these lower carbon fuel just have so much interest and so much energy in this space right now. Again, I mentioned that we didn't have to create everything from scratch, we borrowed heavily from an existing policy and lessons learned from the early years of California implementing. We were able to avoid the things that maybe got them into trouble early on with litigation and with program



design, and I think has just been a testament to the policy that it's flexible and that it can be customized for what other states are looking for from policy.

I think it has really helped spur innovation in ways that we didn't imagine could happen when we first started the program. And then it has just become a really nice tool to compliment our zero-emission vehicle goals as well as recent state policy for a cap and reduce program to reduce emissions. So, we often talk about the climate policies in Oregon. We don't have the full slate of policies, again, like a state of California has, we have a half a dozen programs that we think are critical and work really well together. I think the image that we've been talking about is more of a set of Russian Dolls where they do nest inside of each other, but complement as well to get the Greenhouse Gas Reductions, to get the air quality benefits and to get the economic stimulation in the market to be able to just bring the cost down from a lot of these technologies, I think has been a really good winning formula for Oregon for the first six or seven years of this policy.

Abby: That's a great image. So I know you've been busy, especially since Oregon has been in a rule making this year, so I really appreciate you taking the time today to speak with us. So thank you.

Cory-Ann: Yeah, thank you for having me.

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