

## **Transcript for #84. Parsing the Canadian Clean Fuel Regulation**

**Guest: Fred Ghatala, Director of Carbon & Sustainability for Advanced Biofuels Canada**

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### **Introduction**

You are listening to Fueling the Future of Transport hosted by Tammy Klein, the Founder and CEO of Transport Energy Strategies. We'll talk all about the fuels and energy it takes to keep the world moving forward.

Tammy Klein

Hi everyone, welcome to the show today.

In November of 2022, I had the pleasure of hosting Fred Ghatala, the Director for Carbon and Sustainability for Advanced Biofuels Canada, the national industry association established to promote the production and use of advanced biofuels in Canada. Fred leads ABC'S work to establish biofuel, carbon value, life cycle analyses and regulations and expanding advanced biofuel use into the aviation and marine sectors, which is so critical.

Fred led the webinar and he talked about parsing the Clean Fuels Regulations, so this is the Canadian version of the Low Carbon Fuels Standard or clean fuel program. And, he led the webinar giving an overview of the standards and the fuels landscape out there which I thought was incredibly thorough and insightful. I'll share just a bit of his presentation first.

Then, we had an engaging discussion where we covered audience questions as well as my own, of course.

I hope you enjoy this discussion with Fred Ghatala!

Fred Ghatala

I'm Fred Ghatala, Advanced Biofuels Canada. The presentation is "Parsing the Clean Fuel Regulations." Parsing means to break something into its constituent parts and then start to analyze it. So, the one thing about the CFR is it's a pretty big regulation.

I'm coming at this from a low carbon intensity fuel perspective. So the CFR establishes a vastly improved credit market platform compared to the renewable fuel regulation. If I had to say the key thing that the CFR will do, it will establish a credit, a compliance credit trading market that will ascribe values to the different compliance options. So because we have provincial policies in Canada, some of them with compliance credit markets, some of them with publicly visible markets, how that interacts with the CFR is going to change the economics of which fuels are used where, and it will actually divide out that compliance value, just like you get a RIN/LCFS stack in the US and California will have the same thing in Canada.

It creates a platform for post 2030 tightening. So this regulation is the going to be in place for assumed decades. It has the ability to ratchet up the strength of the carbon intensity reduction target. So during the reg development process, part of the refrain from government was, "let's get the reg out; we can make adjustments as we move forward, we can tighten it as we move forward." So, this is the platform for that. It creates credible sustainability criteria for biofuel speed stocks. So new renewable fuel policy

that includes agriculture and forestry products always includes some type of sustainability or in the case of the clean fuel regulations, land use and biodiversity criteria. They are strict. They are slightly different than what's in place in other jurisdictions, and I think that lends them a lot of credibility for ensuring that the biomass used in the CFR complies with significant requirements.

It incents the refining sector to uptake advanced biofuels and EVs and hydrogen and renewable natural gas. So, it has a strong signal for obligated parties to generate their own compliance. Areas for improvement is that the broad inclusion of upstream reductions can dilute the non-fossil clean fuel signal. So, because Canada has a number of regulations that are being developed that focus on the oil and gas supply chain emissions, it's likely that things or activities or emission reductions generated in the CFR may also be counted in other policies. So that ultimately dilutes the signal for low carbon intensity fuels like renewable diesel biodiesel, fuel ethanol, et cetera, et cetera. The stringent sea of the CFR is likely delayed, which means that it doesn't really start to bite until 2026. So like many other carbon reduction policies, likely starting with a bit of a long credit compliance market rather than a tight one, it provides credits for non-fuel aspects of a refinery's production.

So compliance category one that I'll get into will provide credits for emission reductions that attach to non-fuel products and reporting. First real data coming out of the system is 2025. So the market will need to figure out what the supply and demand of credits versus debits will be. So that's the highlight, the overall surveying of the elephant for the positives and the rooms for improvement. Now I'll get into the bit of ABFC. So our mission is to promote the production and use of advanced biofuels in Canada. We cooperate with stakeholders, work with governments, all to expand market access and use of those fuels in Canada.

So key parts about the Clean Fuel regulations are that it's active the first we're in a pre-compliance period, but the first compliance period starts July 1st, 2023, and goes to the end of that year. Compliance credits can now be created because we're after June 21st, which when is when the regulations were published. And so the early compliance credit period goes from that date until the day before July 1st, which is June 30th for creating early compliance credits. The obligated parties to the regulation are fossil fuel producers and fossil fuel importers. These are called primary suppliers and the vernacular of the Clean Fuel Regulations.

So compliance credits for low carbon intensity fuels are created upon production in Canada or import to Canada with the requirement that if the fuels are later exported, that they're removed from the compliance reports of primary suppliers. Marine fuels, low-carbon, marine fuels are eligible if they are produced in Canada, imported into Canada and put onto a ship in Canada, regardless of destination. SAF fuels are eligible with the same approach that I outlined for marine fuels. It includes a volume metric requirement that takes the place of the renewable fuel regulations that will be rescinded at the end of this year. So that's the 5% in gasoline and the 2% in diesel, they've expanded what is includable in the diesel component of the volume metric requirement to include other fuels like SAF.

The Clean Fuel Regulations has three compliance categories. The first one, cleaner fossil fuels called compliance Category One generally includes upstream emission reductions that happen along the fossil fuel supply chain. It's driven by a protocol process that are called quantification methodologies to determine how the reductions are calculated and the different requirements for verification of those reductions. So it's not through an LCA Model that the compliance category one credits are created. It's through a QM process.

Biofuels and synthetic fuels compliance Category Two, those are called low carbon intensity fuels, LCFs, they're defined in the regulation is having 10% less lifecycle GHG reductions than the base case fuel. And the base case fuel is for the purposes of the CFR, a blended number that is the same for gasoline and diesel fuel, which are the two fuels included under the regulation. So the LCFS's in California, Oregon, British Columbia, they include gasoline and diesel. The CFR in its inception, and over the six years of its development through to publication of final regulations was going to include liquid, gaseous and solid fuels.

As it got towards final regulations, gaseous fuels was dropped off along with solid fuels. Aviation fuels, which were initially going to be included, were dropped off. So it's basically a gasoline and diesel focused reg. However, there is the ability to create low carbon fuel credits or compliance credits through lower carbon gaseous fuels introduced into Canada or imported into Canada. So some of the flexibilities are retained from the broader inclusion of fuel types in the CFR, but generally LFCFs are 10% below, and these are the ones that go into displacing gasoline and diesel. However, low carbon fuels into aviation and marine also count. Compliance Category Three, fuel switching, electric vehicles and GS transport. So this is where EVs have an hydrogen fuel cell vehicles have a clear path to creating compliance credits. These are the boxes at the bottom. The eight of them are quick hits on key components of the CFR.

So the one that is struck out is export credits on crude and refined product. So, what this relates to is that in the initial versions of the CFR, up until final publication, there was the opportunity to create compliance category one credits. So CCS is the good example of that project type. You are allowed to create compliance category one credits that related to energy, so crude refined products that related later exported from Canada. This was removed from eligibility between draft regulations in Canada Gazette one and the final regulations in June of this year, import credits. So crude refined biofuels, that is when those are imported into Canada, they can create emission reduction. So if there is ccs, for example, that occurs outside of Canada and that energy is imported into Canada, that those credits can be counted in the compliance approach of an obligated party. There's a compliance fund that you can use up to 10% of your obligation gaseous fuels.

So, if you put in low lower carbon gaseous fuels, you can use that up to 10%. That's one of those remaining flexibilities that has gone through the CFRs development process. The rules for the quantification methodologies exist outside of the regulation, which means that changes to the QM can happen much faster than changes to the regulation. The one with the asterisks by it is double counted biofuel volumes in 2022. This relates to the transition between the renewable fuel regulation and the CFR. So, from now, from the date of the publication of the regulations in June through to the end of 2022, there's a period of double counting where volumes placed into the market that create renewable fuel regulation compliance. They turn into CFR credits when they're in the account of an obligated party, and they do that at a specified carbon intensity value that's listed in a regulation, but those volumes also become CFR credits later using the actual carbon intensity of the fuel pathway that created those low carbon fuels.

So you get a template CI plus your actual CI and those credit stacks. So we understand there's very good awareness of that, and we're seeing some increase in volume seeking to land in the Canadian market before the end of this renewable fuel requirement compliance here to take advantage of that. And this also helps this CFR start with a bit of a long credit market, which certainly is useful from the viewpoint of obligated parties. But for a CFR credit price being a strong driver of value for low carbon intensity fuels, of course, a tighter credit market would be preferable. And the right answer is probably somewhere

between those. A key part of the CFR that folks in Canada and outside of Canada realize is that it sits on top of strong provincial regulations that are in place in provinces that use 95% of the fossil fuels that are combusted.

So that's just a quick description of a very big and complex elephant. I hope that I've given you a bit of understanding of the different various parts and honed in on some of the key pieces that relate to timelines on CI's reporting and verification.

Tammy Klein

Thanks so much, Fred. Thank you so much for that presentation. We do have time for some questions. We do have a few that have been submitted to me and I think the question, and they're kind of like a bunch of similar <laugh> questions and they all seem to relate to the impact on both the program and low carbon fuel development of the US's recently enacted IRA, which is causing quite a stir beyond just electric vehicles, I might add <laugh>, around the world. And I wondered if, on behalf of these questioners, had any comments about that. Is this going to, for example, is it going to pull feed stock out of the Canadian market and into the US? Is it going to impact plant development on the low carbon advanced biofuel side? Are there other impacts that you're looking at? Will it ultimately impact potentially the effectiveness of this program, at least for low carbon fuels?

Fred Ghatala

That's the...what is that the...

Tammy Klein

...64 million question <laugh>?

Fred Ghatala

Oh, much bigger. Much, much bigger than that. Yeah. So, IRA is...going with elephants is a motif in my presentation, so that's definitely the elephant in the room. I'll say from the Canadian side, the government is extremely aware of the impacts of the IRA is especially 45z on clean fuel production economics. So the shift of that from a blender's tax credit to an exportable producer's tax credit is very well known. There's some uncertainty on the emission rates and the related credit values that would be in place for different types of clean fuels in the US up to the dollar based on what your ER is. So government is quite aware on the Canadian side and planning to respond to it in some fashion. We heard that in the fall economic statement, the mini-budget that's released each fall and it all points to something in budget 2023 that responds to the inflation reduction act.

Canada has a different set of tools to let it respond to it. I mean there's carbon pricing, there's the concept of contracts for differences, there's production credits, there's different funding programs that are in place that assist on the capital side. So it's really about pulling things together so that there is cross border competitiveness for projects that seek to establish in Canada. So that's a long way of saying that there is an expected response. Will it impact where projects locate and project economics? Absolutely. If there's access to an exportable tax credit in the US that can come to Canada, unopposed, and that of course will change economics. As it relates to the CFR, the CFR is a big demand signal for low carbon fuels. So, fuels produced in the US will obviously be used under the CFR. I mean that's currently the case.

Now Canada is just now standing up renewable diesel projects, but we use a lot of renewable diesel. It's all coming from the US and abroad. So even if fuels are produced in the US, even if they're produced in

the US from Canadian feed stock, they still have to have all of the pieces in place to enable CFR compliance. So registered CI's, compliant feed stock, that meets the LUV criteria going into their plants in the US and then being exported to Canada. So, CFR creates a firm demand signal. It is really up to finance and related ministries to create those competitive conditions. A key theme that's running through this is it's not just Canada needs to respond to the IRA because we need equivalent business conditions. I think the real rallying cry is energy security, clean energy security, and that's very amplified with geopolitics at this moment.

It of course is an opportunity for Canada to keep the projects that have announced and there's many more that have not yet announced and have actually announced and have steel on the ground, keep them on track towards building so that these fuels are produced and consumed in Canada. Because we are not a net refined fossil fuel exporter, we're a net refined importer. We're a net clean fuel importer. So getting production assets in Canada is certainly understood to be an aim of the current government. So to be determined, very important would certainly like to know how Treasury is going to do the emission rates and related credit values, especially for the SAF. That happens in how many days, Tammy? Maybe 45 days until we're supposed to know what emission rates are for LCA modelers, I mean having LCAs and CIS and ERs in the middle of tax code is certainly exciting. Add some complexity with it too.

Tammy Klein

Oh, it's the US after all. <laugh>. So there is a question in the chat and then I have another question if we have time in these last few minutes. The question is where will the CFR credits be traded and what level of price discovery will be possible? Care to venture a guess?

Fred Ghatala

Very, very good question because the regulations are not definitive on this. ECCC staff are not to date definitive on this. There's been reference that in terms of reporting for understanding what the credit values would be, there would be something similar to what British Columbia publishes they publish quarterly, the number of transactions, the mean value of those transactions per credit, the volume, et cetera. So, there would be some type of reporting I think like that, this is my estimate. We don't understand ECCC to be developing a trading platform that they would manage and oversee. So they would be business to business or there would be an opportunity for to be some type of third party assistance with facilitating those trades. But price discovery and where the debit creation sits relative to credit creation is what's going to drive value in this market and understanding and business planning. And that's one aspect that is not yet as clear as market participants would like it to be. But we've reiterated that one of the key points that the CFR does is create compliance values. Very important that those values are understood. And there are some handles that each ECCC must follow or there's...I'll go into quick detail here.

EV charging network operators are required to reinvest the value from compliance credits back into more enabling infrastructure. So there will be some type of fair market value of credits published by the Environment in Climate Change Canada that is used to determine how many funds need to be reinvested. So there is going to be the information, we're just not clear exactly how, where, when it's going to be published. There are forecasts out there. I think some of our math uses a hundred dollars per 10 now because that's simply what the Tidewater Refinery has had out in press releases around forward credit sales. But that's one of the few publicly mentioned values of what future CFR credits will be. And certainly, that's just an estimate.

Tammy Klein

So last question, quick question. You talked about SAF all throughout the presentation, do you see Canada going the way of the European Union and considering an actual mandate at some point in the future?

Fred Ghatala

I'm bullish on an SAF mandate in at the provincial levels in multiple provinces and at the federal level for the reason that it's clear that an opt-in only approach may not yield the amount of SAF that is required to make any meaningful reduction in aviation GHG emissions. So volumetric requirements certainly would be something, a necessary policy tool rather than just opt-in or even a CI reduction on aviation. You could get cheaper reductions in the on-road transportation fuel than you can with SAF. So regulator understanding and policymaker understanding I think is part of that. Second, British Columbia has consulted on exactly that question. They have indicated they want to do something on jet fuel within the LCFS, so provinces and leading provinces are actually doing something. And third, I would think that the aviation community with the targets for the SAF grand challenge of the 3 billion gallons per year in 2030, this is the way the commercial aviation sector has indicated they want to go. So having lower level volumetric requirements serves to further that goal if it is the surety created through those volume obligations that actually turn on production capacity.

Tammy Klein

What about Marine?

Fred Ghatala

And I'll just say one more thing on aviation. I know one of the key parts about the European approach is, I mean what they're consulting on or considering is an airport-specific requirement. Not sure that Canada would go to that airport-specific requirement. We've generally used a pool average approach. So maybe something between Europe and what a renewable volume obligation actually looks like.

Tammy Klein

Last and final question, because I know we're just a smidge over time, but I think as what you're saying applies to SAF, could it apply to Marine as in the Europeans are doing planning a mandate for marine, what about the Canadians on the same philosophy that opt-ins not really enough to really encourage decarbonization of transport energies in that sector.

Fred Ghatala

And marine's a bit of a bigger one. I mean, having the opt-in is certainly a big deal because you can put a lot of low-carbon marine fuels in a vessel and create a lot of compliance value for that. So, questions like, okay, so LNG into an LNG vessel, how many compliance credits may that create? Where are those emission reductions going to be calculated and what does that do to the rest of the credit market?" So I think there's bigger questions on marine that relate to just the multiple types of fuels that can be used under it. With SAF, we're talking about a single ASTM spec. With marine, we've got methanol, we've got ammonia, we've got hydrogen, got everything, but global marine has MARPOL and IMO targets to reduce their emissions. Policies like the CFR can be part of how domestic or member state level policies are used to further that in. I'll just note AFCs quite engaged on both of these. We have SAF caucus of our members that are specifically focused on providing policy input to SAF related initiatives and policies federally improv. Same with marine, we have Marine Caucus that's being stood up, approved by our board of directors to do exactly the same thing. And recognizing Marine is different

in its understanding of the decarbonization journey simply because there's many types of engines, many types of fuels, many types of ships.

Tammy Klein

Fred, I want to thank you so much again for your time and for presenting today and for collaborating with me on this. It's much, much appreciated.

Fred Ghatala

You got it. See you soon, Tammy.

Outro

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