Following is a transcript of a presentation by Robert C. Casad, Jr., Director, Blue Flame Biopower, Lawrence, Kansas, to a meeting of Kansas Sustainable Agriculture District #001 at the Kingman county Expo Center, Kingman, Kansas, Tuesday, November 22, at 6 pm. A video link to the presentation is available at https://youtu.be/GPDS3WPT8uE.

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Begins 0:0:28

Slide 0

I've got my high-tech pointer here to use at some point. (Note in proof - refers to a stick) I'll try and go fast, I guess. I was going to try to give a little spiel before I started. And since I took the trouble to think it up, I might as well give it:

INTRO:

I first came to Kingman about one year ago today, almost one year ago today exactly, with my mission to establish a political proto-type of what I hope will be replicated elsewhere in Kansas of a mode of rural economic development fed by production of biomethane (also known as Renewable Natural Gas) from agricultural commodities.

This idea has attracted some support from Kansas politicians. In June I asked Joe Siewert and Mike Murphy our local state representatives to sign a letter of support for the District and Blue Flame. They signed this along with two quite left wing legislators from Lawrence Marci Francisco and Boog Highberger. Everybody told me "you're not going to get these people to sign the same letter," but they did. I sent that to the Governor and everybody told me "the Governor's not going to read that during an election," but she did. She assigned this Deputy Secretary of Commerce to help us. Well, he didn't help us. But that's not really the point. The point is that the Governor is on record saying "this is interesting, tell me more."

I am no fan of Napoleon Bonaparte but he has a famous quote which I think is relevant to our circumstances: "Between the sublime and the ridiculous," he said, "is but a step." Between the sublime story of the Kansas Sustainable Agriculture Districts where farmers come together, use tax-free bonds to finance a biomethane plant to create markets for their own agricultural commodities and fuel for their own vehicles all the while earning subsidies from the petroleum industry. Between that sublime idea and the ridiculous situation of Robert Casad dreaming up stories and tiliting at windmills is but a step. And that step is that there's enough farmers in Kingman county and the surrounding area to actually do this. To actually provide biomass for the District's plant.

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There's a lot here. It takes awhile. You're all going to get bored. I'll try to do it as quick as I reasonably can.

To refresh everyone's memory, the idea here, which I dreamed up in Denmark, where I have been living for the past 17 years, was that we have a unique opportunnity under Kansas law to create something called a "Rural Improvement District." This is effectively a political subdivision of Kingman county. It's formed by farmers petitioning the county government to have their land included in a district. These are public corporations, as I say, governmental entities with elected directors which are empowered to issue tax-free bonds to finance renewable natural gas plants.

The whole central idea here has always been that the District can supply the biomass supply logistics. Farmers don't have to spend anything on harvesting the crops or material that are used in the plant. And in so doing, the District can create a market for agricultural commodities. This is a self-feeding chain reaction where farmers form a collective, use tax-free bonds to finance a plant, and then form a market for their own agricultural commodities.

This is a map here in the corner of our District, District #001 as formed. 41 landowners from 19 families. 16,776.65 acres. We always imagined that the District will be larger than what it is, but anyway, this is the place to begin. And politically, legally, the District does exist as of February 7 of this year.

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Now I'm going to remind everyone here of the message that I have been trying to deliver from the beginning. If you create demand for your own renewable natural gas, this is an unstoppable chain reaction.

In terms of the existing demand for CNG, up here in this corner, you see an excerpt from a publication by NGV America, a trade group promoting CNG vehicles. And what you can see is that, of the CNG consumed by existing vehicles in 2021, 64% was RNG. Well, what happens is somebody puts some RNG in a pipeline in Oregon and somebody takes it out in Oklahoma and there is some kind of documentary transfer. But at the end of the day it is of course not the same molecules that are being consumed. In terms of documentary RNG, 64% of the existing demand is already satisfied by RNG. Well, you might say, gollee, there's no future in this, there's no market in this. But that is completely not correct.

The revenue production from this plant is not the sale of gas but rather it's the sale of what's called RINs - Renewable Identification Numbers issued by the EPA for renewable natural gas that has been sold for use as transport fuel. The D3 category of RIN is the most valuable and that's what our RNG will qualify for. In 2021, there were 500 million D3 RINs produced. The market cap established by the law is 16 billion. So in terms of the theoretical market cap, we're at 3% saturation right now. In terms of the existing demand, were at 64% saturation. Well, as I say, and as I try to drill home to you, if you create demand for your own gas, this is an unstoppable chain reaction. To reach 16 billion, we're going to have something like 5000 plants of the scale that I am talking about in Kingman county.

Now use as "transporation fuel" does not mean, perhaps, what you think it means. This includes non-road engines. So, we have vehicles - pickups, semi trucks, cars, and of course, farm vehicles, tractors and combines. We also have non-road engines like compressors, irrigation pumps, and chippers and choppers, whatever. So, again, the main message - you can save fuel costs and get RINs from your own renewable natural gas.

This is a picture here showing a commercially available dual-fuel conversion kit for a tractor put out by an Italian company. This is a 120 gallon-equivalent tank mounted on a bracket out in front of the tractor. It's actually technologically very simple. What happens is the engine runs on diesel power in low load. But then as the load increases you feed methane into the cylinders. Well, the compression ignition of the diesel of course burns the methane. And you end up with a cleaner burn and a higher efficiency of the motor up to about 50/50 blend. And in some cases, in some vehicles, at high load, you can go up to 80/20.

Again, this is the messsage I have always been delivering from the beginning: If you create demand for your own RNG, you create a chain reaction that is unstoppable up to 16 billion RINs per year.

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OK. My approach along the way has changed. People say "oh, he has zig-zagged around." I have. It's true. I have bounced around. I have changed directions. The plan changed many times now. I am kind of rolling with the punches.

When I first came here, I was trying to develop a pilot of my own technology for which I have existing, pending patent applications based upon steam cooking of the material before we digest it in the RNG plant. Well, we didn't get our SBIR grant and so we moved on to Plan B.

And Plan B was, I am working with this Danish company that makes biogas plants and I am trying to find financing to build a little test plant in Kingman so we could demonstrate the technology and then move on to the bigger plant. Well, Plan B didn't exactly fail, it's just that it's taking too long. The Danish funding source that I was approaching is called the Novo Nordisk Foundation. Their mission in life is sustainable agriculture. I thought maybe we could get them to do this. And they didn't actually say no. It's actually sitting in high levels of their organization. But it's taking too long. And the moment is now. The iron is hot. Finally I just got tired of this and said, OK, forget about the test plant.

Now we're on Plan C. And that's what I'm here to explain today. Plan C is, forget about the test plant. We're simply going to directly approve a tax-free revenue bond to finance a commercial scale plant.

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What I have in mind is a Kingman version of the Flemløse plant in Denmark. I have shown you this map before. This is a map of biogas plants in Denmark, commercial biogas plants in Denmark. Bear in mind that this is 1/5 the land area of Kansas. Each one of these green dots is a plant and the size of the dot shows you the amount of gas that is being produced. As of right now, 30% of the pipeline gas in Denmark is RNG and on track to be 100% by 2032. Anyway, in Flemløse you have a not very big plant, which I have highlighted here.

This was built by a German company called Envi-Tec. I contacted them and said, look, this is a plant that runs on grass silage and manure. That's exactly what I am proposing to do in Kingman. And I said, "look, why don't you build this plant in Kingman, Kansas?" And they like this idea very much. They are building 10 plants in the USA right now. All of them, 100% of them, based on dairy cow manure. Well, this is the low-hanging fruit which I'll explain in a minute. They very much like the idea of making a sort of flagship plant showing what they can really do because making biogas out of dairy cow manure is like falling off a log. They would like to have a flagship plant right here in Kingman county. And they have agreed to work with me to put in the time and effort to be able to put together what we need to be able to issue a bond to finance such a plant.

Now, this is described in a video link. Some of the guys here have already seen this. Yeah, this takes 4 minutes.

(Shows video available at https://www.envitec-biogas.com/references/references-biomethane/reference-glamsberg)

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So, that was the Flemløse plant. So now I want to get into some technical details so that people begin to understand how exactly it is that the District can afford to create and sustain a thriving market for grass silage in Kingman county.

I'm showing you some technical numbers here. I know it's kind of hard to see. These are actual methane yields from plants in Denmark. These are real numbers. I am going from high to low on grass silage where obviously all grass was not created equal. The Kansas equivalent of high medium and low would be Big Bluestem, Switchgrass and Cordgrass. They're getting between 216 and 250 cubic meters per dry english ton. Now I use the expression "dry english ton" because I want to make sure I have made the calculations correctly. If I use the word "ton," in my head, it means metric ton. So forgive me if I say "dry english ton." You're getting between 216 and 250 cubic meters per dry english ton for this grass silage. In terms of the RIN revenues, and

we're not even talking about the gas revenues, which are also substantial, but in terms of the RIN revenues alone from this gas that's produced at the current level of RINs above 3 dollars, RINs have been above 3 dollars the entire year except for 2 or 3 days, 3.15, 3.12, 3.07, let's just use 3 dollars as the number, we're going to obtain between 285 and 330 dollars per dry english ton, okay? (Note in proof - these values were slightly exaggerated due to an incorrect spreadsheet entry, the correct values between between 270 and 313 dollars per dry english ton). Even back in Trump era RIN revenues, and the Trump administration was deliberately suppressing the RIN market, it's difficult for me to explain how that was done, but anyway, back in Trump era numbers like 2.50 per RIN, you're still getting between 238 and 275 dollars per dry english ton in gross revenue from the grass silage. (Note in proof - the correct values between 225 and 261).

Now, we pay, the District pays farmers 60 dollars a ton. Well then, the District has a lot of expenses of course in harvesting, storing, and making the silage. Suppose we have 110, suppose we have 120 dollars per dry english ton in that material, there's still a lot of gross revenue here to work with to make a plant that easily pays for itself and that easily services the bond that financed the plant. Okay? So this helps you get your head around the numbers that we're talking about.

I want to talk about manure in some detail. When you look at cow manure fresh out of the cow's intestines, you're getting something on the order of 135 cubic meters per dry english ton. This is almost half as much as you can get from grass silage. (Note in proof - actually more than half) Obviously, if you're east coast or California capitalists trying to make money on RNG the absolute no brainer is go and use dairy cow manure. You don't have to pay anything for it. It's a no-brainer. It's the obvious solution. And that's why all, in every case, of the ten plants being built now by the company that built this Flemløse plant that I have just shown you, they're using dairy cow manure. This is the low handing fruit. This is the easy thing to do. Okay?

Nobody in Denmark works with dry manure. It just doesn't exit. Nobody allows manure to get dry. They get it in the truck and get it to the biogas plant before it has a chance to get dry. But I don't really know what the value in the real world from dry manure are. I am extrapolaring from articles. But I think you get on the order of 60% of the yield from dry manure as you get from wet manure. Even with dry manure, though, even at Trump era RIN levels, you're still looking at between 89 and 149 dollars ton gross in revenue from that material. (Note in proof - this is not correct in that this refers to both dry and wet manure being between 89 and 149; the correct amounts between 84 and 141). And in current RIN levels between 106 and 178 (Note in proof - again this is not just for dry manure but for both dry and wet; correct amounts between 101 and 169).

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So, in terms of making a local grass silage market, I have emphasized switchgrass. And I want to explain to you why. Of course you can use any grass. You can use grass clipping from Wichita. You can use sudan grass. You can use any grass. There's nothing magical about switchgrass. The reason why I have emphasized switchgrass is that the federal government has spent literally hundreds of millions of dollars developing this concept of a dedicated energy crop grown on marginal land. Although, all they had in their heads was cellulosic ethanol. The point is, you have all this literature, all these academic articles, all these grants, all this work. Everybody knows this story and everybody will immediately tap in to this story if we're talking about switchgrass. That's why I am emphasizing switchgrass.

The USDA and the Department of Energy, as I say, after hundreds of millions of dollars developed some specialized strains that are able to give good yields on dry land, marginal land without water. There was a study from Kansas State - the Kansas Switchgrass Production Handbook, you can easily find it on line, from 2017. And what they did is they tested these strains. The people from K-state took these strains that were developed by federal money and they tested them. And they concluded that, you know, these strains do pretty well. We can get up to about 4 dry english tons per acre in a normal rainfall year. That was their conclusion. They also had the

conclusion that although they can get good yields, farmers aren't going to make any money because of the harvesting cost and the fertilizer cost.

In our model, the farmers have no harvesting cost, A, and B, in terms of the fertilizer, the nutrients from this material after it's digested are recovered in the effluent. We're going to re-distribute the nutrients back to the land. You can see in that video of the plant that I showed where you're creating this fertilizer output. The nutrients do not get lost in this process. We put the grass into the plant. We make biomethane. And then what comes out of the plant includes those nutrients which are then re-distributed back to the land.

So, the conclusions of the Kansas State people that farmers aren't going to make any money at this were based upon the old way of thinking that the farmers have to pay to harvest it and the farmers have to pay for their fertilizer. This collective model that we're pioneering where the District pays the harvest cost and re-distribtues the nutrients back to the land is a different ball game.

So I ask you, consider this, at 60 dollars a dry english ton, 4 tons per acre, the gross is 240 an acre. Is that bad? Is that not a reasonable gross for the productivity of your land, especially if you're an old farmer that doesn't want to get out in the fields so much anymore?

I am estimating that the acreage that we need for our plant is something like 9000. Although I would rather get 10000. We need like 9 or 10 thousand acres that people have said "OK, I'll plant some switchgrass" or whatever kind of grass you want - I've explained why I emphasized switchgrass - if they agree to do that, to plant that material, the District can harvest it. Then we have the possibility of actually organizing this project.

I mention here also about a Phase III plant. Let me explain very briefly what I mean. You recall that my technology uses steam to cook the material. If we took that grass silage that you saw in the video, and before we put it into the biogas plant, we cooked it with steam, according to my technology, you would be able to process much more grass through the exact same capital plant. In the exact same plant that we're building now, if we cooked that silage before we put it in, we can put 2.5 times as much in per day, A, B the amount of time it has to stay in the digester is cut in half, and C, even the yield is a little bit better. The net result is we can from the exact same capital plant somewhere down the road we can produce 2 and a half times as much RNG, okay?

Well, my, this could be Robert Casad dreaming up stories and tilting at windmills, but my story from the very beginning has been that we can use that gas (Note in proof -indicated RNG yield from initial plant) for vehicle fuel and the increased yield from increased acreage somewhere down the road to make nitrogen fertilizer on a local scale. Well that's what I have been dreaming about all along. It isn't that important for the immediate story, though.

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Now, something that I want everybody to understand. I want to drill this into people's head is the timeliness of what we're trying to do here.

The USDA recently announced a grant for 80 million dollars for some academics to do exactly, precisely what I am talking about. The project is designed to spur farmers to plant cover crops and perennial grass to be processed into RNG.

Well, if you look at these academics, look at their history, and what it is that they're doing, what they care about is soil. This is all about soil health. And here's what's in their mind: "We have to find a way to get these dumb farmers to plant cover crops 'cause we need to preserve the soil. So let's give them some money. Part of this money (note in proof- the grant) is to pay farmers to grow grass. We have to convince them to grow grass and so on and they can maybe make a little money on RNG and so on.

This is the kind of RNG system they're using. They're using a covered lagoon. This is an utterly primitive system. You might say that it's lower capital. Obviously it is lower capital. What you get here is, there's no heating here in this system, so, in the winter you get a little bit of gas and in the summer it produces a lot of gas. There's no way this thing is ever going to be able to sustain an RNG supply contract with somebody who's waiting for you to send them RNG. There's absolutely no possibility of doing that with this kind of system. And remember that in Europe, where they have been working on this for 30 years, you never, ever see one of these. They have the same considerations of capital cost and yield. Nobody in Europe would ever build something like this. This is strictly a phenomenon that occurs in America.

And so, the other thing about this project, as I say, this is academics who want to encourage farmers to make good soil. There's no farmers' collective here. There's no concept of trying to fuel rural economic development here. There's a bunch of academics in Ames trying to get some dumb farmers to plant cover crops working with some capitalists who are trying to build RNG plants. That's it.

So, we have, they're willing to spend lots and lots of money on this. What's going to happen is by the time this grant actually is finished, this project is finished, and they make their big video about what they did, we'll be up and running here. We'll be actually doing this here. That's my dream, my hope, okay? And when they go to conferences and present their results, I'll go to the same conferences and present our results.

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Now I want to make sure that everybody understands about some dramatic changes in the law. I don't know if you've heard about this - the Inflation Reduction Act of 2022. It was adopted on August 16 of this year. This has dramatically changed the playing field and very much in favor of what we're trying to do.

I will say first, perhaps not foremost, but of central significance, the Congress has now approved a tax credit for sequestration of CO2. Well, there was always a tax credit for CO2 sequestration. They've increased the amount by a factor of 5. It's 5 times more money now than before, A, and B, the threshold for how much CO2 you have to sequester to claim this credit has been reduced from 50,000 metric tons per year, which we would never be able to meet, to 12,500 metric tons per year. And our biogas plants will easily reach 12,500 metric tons of CO2 per year. Remember, when we're doing this digestion we're producing a gas which is a mixture of CO2 and methane. We clean up the methane, that's our RNG. Then what's left over is a comparatively pure ouput stream of CO2 which we can sequester and claim the credit.

Now, up here in this corner I'm showing you a map of the underground injection wells in Kansas. This is a tremendous economic opportunity for Kansas. There are only three states in the union, Kansas, Oklahoma and Texas that have this possibility. What you see in these black dots are the so-called Class II underground injection wells. These are used in the oil and gas business. When you pull oil and gas out of the ground, its associated with salt water that you have to put back into the ground via some kind of injection well. These are the Class II wells.

There are two categories of the wells. There's the so-called "enhanced oil recovery." In an "enhanced oil recovery well" you put that salt water back into an active field that you're trying to get more oil out of. And the other kind of well is called a "salt water disposal" well. This is just a gravity fed well that puts that salt water back into the ground, probably down into the Arbuckle.

Well, anyway, in terms of the "enhanced oil recovery" wells, the amount of money we can get is 60 dollars per metric ton if the plant is funded privately or 30 dollars if we use tax-free bonds as is the case here. The beauty of the "enhanced oil recovery" well is that we can do this legally without any interference from the EPA. KCC can permit us to do this right here right now.

The other possibility is the "salt water disposal" wells. Now, the EPA is not going to allow us to do this because the law says you can only put the saltwater from oil production back into a "salt

water disposal" well. They will not allow us to add CO2 into a "salt water disposal" well. However, the KCC can give us permission to do this on an experimental basis. And that is precisely what I propose to do right here in Kingman county.

Let me explain a little bit more in detail:

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In terms of the technological details of the CO2 sequestration, I want people to understand this. It is critical to the "clean production credit." Well, OK, I'll go back and explain the "clean production credit" in a minute. Let me explain the CO2 issue first. There's no problem with legal permission. We can do this legally with EOR wells. We're partnering with C&K Operating in Kingman, it's run by Kraft Oil and Gas. They have two existing EOR permits for 10,000 barrels per day each up to 400 psi pressure.

Up in the graph here I am showing you solubility of CO2 as a function of pressure in brine at 98 degrees which is approximately what we're talking about. So at 400 psi were about right here on this graph. More than 0.31 moles of CO2 per kg of solution. Well at that rate, at 20,000 barrels per day, we'll be able to dissolve all of our CO2. We'll compress the CO2 to 400 psi, drop it into the stream that's going into that EOR well after the water pump and then it will all dissolve. We will in this manner in a very technologically simple way be able to claim the CO2 prodction tax credit. C&K as of 2021 reported 15,000 barrels a day that they're running right now. This is a huge volume. We can easily, using the existing legal permit under an EOR well, sequester our CO2.

But there is a much more interesting possibility and that would be to use a "salt water disposal" well to achieve the same effect. As I say, currently, the EPA is not going to allow us to do that. The KCC can legally give us permission to do it on an experimental basis. We can have an experimental well in Kingman that is the center of a great story in the US. What we will do is compress the CO2 to 1100 psi which is more about here on this graph. (Note in proof - indicates a higher level of CO2 solubility) Obviously, 4 times as much of it is going to dissolve. We would take the "salt water disposal" well out of the ground and line it with a high pressure gas hose (note in proof - should be tube) so that when the gas comes out deep in the ground at a point where the hydrostatic pressure on top of that, inside that well, is 1100 psi.

Well at 1100 psi and 98 degrees, carbon dioxide exists in what is called a super critical state. What this means is that it behaves like a gas in that it expands to fill its container on the one hand. On the other hand, it behaves like a liquid in that it is 5 times as dense as the compressed gas phase. Moreover it has no bouyancy, it has no bubbles that are trying to rise up in the column. So when we come in at 860 meters down in the "salt water disposal" well, and introducing our CO2 at 1100 psi, first of all, 4 times as much of it is going to dissolve. That's 4 times less water. So we go from 20,000 barrels a day to 5,000 barrels a day just on that alone.

But that's not the end of the story. If we allow a two phase system where we have the dissolved CO2 but then we also have supercritical CO2 existing in a two phase system with the water, because the supercritical CO2 is 5 times as dense as the bubbles would be, we can put a lot of CO2 down that well.

And here is my calculation. Here is another point that's imporrtant. We're going to decrease the pressure, not increase, we're going to decrease the pressure in that well because the supercritical CO2 is less dense than the water. We'll have 4 times as much dissolving. Now we're down to 5,000 barrels a day. But then we can have a two phase system where we can put in much, much, much more CO2. The thing that I believe we'll be able to demonstrate right here in Kingman county is of great

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economic significance to the state of Kansas. Right now, if you need 20,000 barrels per day to get rid of all the CO2 from your biogas plant, well, there's one well in Kingman, one in Barber, one in Harper, one in Pratt, there's one here and there that have those kind of volumes.

If we get down to 1000 barrels a day or 1,500 which I think is entirely probable, the universe of possibilities is greatly expanded. What this means is all of those black dots that you see mostly in rural areas in Kansas offer an opportunity for a biogas plant to sequester its CO2. So, this is of really profound significance to the state of Kansas in terms of economic potentiality. And remember, there are only three states in the union where this is possible, Kansas, Oklahoma, and Texas.

Now the next thing I want to tell you, the other thing that the law established which is of great relevance to the CO2 is a production tax credit for what's called "clean fuel." So here is the deal about this. Our fuel will be what's called "carbon negative" if we put that CO2 in the ground. The idea is this: When you burn off a fuel and put CO2 in the atmosphere, the question is how much CO2 is associated with that burning? If you pull fossil fuel out of the ground, if you burn fossil fuel, when 100% of that CO2 is CO2 that you put into the atmosphere plus whatever CO2 was associated with bringing it out of the ground and moving it around. In the case of RNG, when you burn that RNG and that CO2 goes into the atmosphere, we pulled CO2 out of the atmosphere in order to make that RNG in the first place, okay? Now, to the extent that we're putting our CO2 into the ground, we will unquestionably have "carbon negative" fuel. For every gram of CO2 that is released from burning the RNG we will have taken more CO2 out of the atmosphere.

And the consequence is that we're going to qualify for a 1 dollar per gallon gasoline equivalent "clean fuel" production tax credit. That's under the current law available through 2027. So we'll be able to claim that for 2 years. We will easily be able to do this. There is no technological obstacle. There's no legal obstacle. We'll be able to get this money and we're talking 3.5 million per year in revenue from this tax credit alone, okay? As I say, this has great significance also for the rest of the state.

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Now there a few more things about the new law that I want to tell people about to make sure everbody understands. The clean fuel production credit, the CO2 sequestration credit, these are what we call production credits. You have to do something to make the money.

There's also an investment tax credit for qualified biogas properties. Well, this is a qualified biogas property, there's no doubt about that. In the case of private financing, the amount of that credit is 30%. In the case of financing with tax-free bonds which we're talking about here, the amount is 15%. What does this mean? The District is a tax-free entity. And under the terms of the law, it will receive that tax credit as a cash payment. And that is the case also with the production tax credit and the CO2 tax credit.

Now you can't claim both. You have to pick either or. You have to pick either the CO2 credit or the investment tax credit. The CO2 sequestration and production tax credits are in terms of the total amount of money worth much more money than the 15% investment tax credit, on the one hand.

Nevertheless, it might be strategically worthwhile to go to all the trouble, we sequester our CO2, we put our CO2 in the ground, and we have thereby established a kind of glamorous story for our investors. You know, we're talking about tax-free bonds, we're talking about renewable, this is District 1, you know, we're the showcase, this is where it all begins. We're going to have a glamour factor that goes to 11 on our RNG to the extent that we're sequestering our CO2. But it might actually be strategically wise to do that, but then opt for the investment tax credit.

And here's why: Even though its less money, it's in year 2 of the plant. The IRS is going to send a check for 5 or 6 million dollars into the District's bank account, okay? This is our "war chest."

What do we do this? This is the co-payment that we can make on other grants where the government says "we'll pay 75% but you have to put up 25%." We'll have the 25% to put up. You see? So, it might actually be a strategically wise choice to certainly go ahead with the CO2 part of the story and do the experimental well in Kingman Kansas and so on. But nevertheless, opt for the investment tax credit because that gives us a "war chest" already in year 2.

Now there's two more important things that I want to explain here. I want to make sure people understand. The first is this: The Inflation Reduction Act allocated 500 million dollars through 2031 for grants up to 75% for projects that increase the supply, sale and use of agricultural commodity based fuels. Well friends, that is precisely, exactly what we are talking about. If District #001 can get up and running, these grants have not yet been announced. If District #001 can get up and running by the time these grants ARE announced, it means that Districts 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12 will have a hell of a shot at getting that money. So there's real imperative on "let's not wait." Let's not sit around. Let's not bide our time. Get the ball rolling here.

The last thing I want to be able to explain which is of central significance: The Inflation Reduction Act of 2022 allocated 26 billion dollars to be spent by September 20, 2024, i.e., before the next election, in grants to states to support investment in greenhouse gas reduction. Well I have already told you. The Governor has already said "this is interesting. Tell me more." Okay? So what we want, we want Kansas to apply for money to support Kansas Sustainable Agriculture Districts. Everything begins in Kingman. We have our CO2 sequestration. We have our experimental well. We have our model of the farmers' collective creating a market for their own biomass. And hopefully, somewhere down the road, we have our own vehicle fuel conversion scenario.

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OK. Does anybody want to take a break or should I just keep going? Keep going? Okay. Here is the main event and here is why I summoned all 6 of you tonight (chuckling). Opportunity knocks and we have the possibility to apply for a USDA grant having deadline December 29. This is a great opportunity and that's what I'm here to explain about. And that's where I need some positive action on the part of farmers in Kingman county or at least surrounding areas before I can actually put this together.

The program is called the Fertilizer Production Expansion Program. 500 million dollars has been allocated. What they're looking for is "innovative, sustainable, farmer' focused" fertilizer production with an identified source of funding for the 75% cost share. This is a grant for 25%. We have to have an identified source of funding for the 75% cost share. Well, what we need is for the District to authorize pending zoning approval, pending KDHE approval, the District authorizes the bonds to build this Flemløse plant in Kingman county. That is how we qualify for this grant application, okay?

What am I going to try to sell them? By the way, they say one of their focuses is bundling of fertilizer with other products, i.e. RNG, okay? So what am I going to try to sell them on? The re-distribution of nutrients from our biogas plant back to the fields counts as an alternative, sustainable fertilizer. Moreover, I will try to sell them on the idea which I think is true that this is critical to the ability of this grass silage market to thrive. If the people who are growing grass silage don't have to spend money on fertilizer, this is going to be a much more interesting offer than if they do. So, what we'll try to sell the USDA on is that our re-distribution of nutrients IS sustainable, alternative fertilizer, okay?

Now, look, we can go into this even assuming that we won't get the grant. But this is an extraordinary opportunity to stand on a soapbox. This is a soapbox. This is a platform to talk to the USDA, to talk to the politicians in Topeka and Washington. It will be the District that applies for this grant. District #001 will apply for this grant and what they'll ask for is 25% of the cost of the biomethane plant. Now in my view what we do is we make a bond, we approve a bond to finance the entire cost of the plant. And if by some chance they actually give us 25%, then you have money to spend paying off all the first year's operating costs and so forth.

And you know, if we don't get this grant, which I even assume that we won't, if we don't get this grant, OK, then we'll re-do the bond. Nothing is going to be set in concrete because the District approves a bond pending KDHE approval, pending zoning approval. You can always change your mind. Before you start actually selling bonds, through licensed underwriters, we're not actually committed to actually doing this. But we need this to be able to qualify for this grant application.

So, this is what I am getting at. And this is the thing that I am trying to get people motivated to say look it's November 22, okay? The deadline is December 29. That's five weeks from now. I have a lot of work to do if we're going to pull this off. What I've said is, again, even if we assume that we won't get the grant, this is an extraordinary opportunity to present the District and stand on a soapbox. It gives me what I call "documentary ammunition" in Washington and Topeka. So I do hope people will be motivated to say "okay, okay we'll sign some agreements so you can get your project moving." I hope that's the way this pans out.

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The steps for the District to be able to approve a bond. First and foremost, this is absolutely the most critical step. Everything else is going to be easier to deal with. What we absolutely must have is contracts with farmers to provide biomass. Now I have construed these as "biomass conversion service agreements." Let me explain why. I know this is kind of dense and I am going fast.

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Here is the requirement from the law: Before the District can issue a bond. "When a sufficient number of taxpayers sign written contracts to use the proposed services at the rates established by the board of directors, the board of directors shall proceed forthwith to issue revenue bonds."

Okay, so the service the District is providing is conversion. We're going to convert your biomass, harvest it, transport it, ensile it, store it, convert it to biomethane and re-distribute nutrients to your fields. That is the service that the District is providing.

The rates for this service are negative, that is to say, the District provides this service for a negative rate meaning it will pay you for your biomass. So, the rates that I am proposing for grass, 60 dollars per dry english ton, for manure 25 dollars per dry english ton, and for wheat straw, sorghum stalks and similar residuals, 50 dollars a dry english ton.

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This is the critical step. THIS is what is the critical step. We need those agreements to be able to approve a bond on paper. As I say, remember, we're not actually going to start raising money, we're not actually going to take the bond to an underwriter, it's still pending approval by the KDHE, by the zoning and everything else. But what we are going to have is documentary qualification for that grant application, okay?

So nobody is going to sue. The District isn't going to sue anybody who signed these biomass conversion service agreements. On the other hand, you shouldn't sign it if you don't really mean to do it.

Here's a copy of the agreement. I'll pass it around. What we need is we need farmers to sign this agreement with the District. This is between the District and farmers. We need those signed agreements before the District can issue a bond and we need the District to approve the bond, not issue it, before we can qualify for this grant application.

Okay the next step in being able to approve the bond: We're going to have to have an end user for the RNG. I refer to this as an interim end user. Because the idea has always been that eventually the District will be able to create its own demand, convert vehicles and start consuming your own RNG. But we need somebody to buy the RNG for a couple of years while we're getting that together. That's going to take time to put together. So I refer to this as an interim end user. But in terms of the bond, for us to be able to approve that bond, there has to be somebody who says "we'll buy your RNG." Obviously we're not going to get nearly as good of a deal from that kind of arrangement as we would get from actually just doing it. But this is what were going to have to do. We're going to have to have somebody in advance say "we'll buy your RNG" and we're going to not be able to get as much money out of the deal because of that restriction. But this is simply what we have to do to make this work.

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My idea for an interim end user, my ideal interim end user is a renewable natural gas locomotive. This is a picture of a tender car. There's several different companies which are making these. This particular car has a 13000 GDE storage capacity. So this is about the size of three of those quantum tube trailer trucks. Okay? So the idea here is in the best of all possible worlds we might be able to directly fuel tender cars.

I have approached K&O railroad which is here in Kingman. They already have a grant and they're already working on RNG locomotives. I have approached them. There is a Vice President who is supposed to call me today. I anticipate that I will be allowed to go make a presentation about this. But in one scenario we get them to say "OK, we'll buy your RNG." We have to give them a deal well maybe they don't have to pay as much as if they bought it directly out of the pipeline and so on.

Now, obviously, we can fill these tenders via pipeline gas. I mean, you don't really have to have the tender sitting physically in Kingman being filled by the RNG plant. We have this process where you put gas in the pipeline and there's this sort of documentary transfer of that gas, not a physical transfer of the molecules. Now I personally don't like that. It's sort of esthetically unpleasing first of all and second of all, that pipeline connection costs a lot of money, were talking about one and one half million probably in capital cost to make the pipeline connection. And if we don't have to do that, that's a lot more attractive. However that pans out, this is my ideal end user for the RNG.

Another possibility is a major gas supplier. I already had one, Wood River Energy in Colorado and they've already said in principle we'll do this bcause they know how to sell the energy and they look at this and its very promising and they like it. We can put bona fide carbon negative RNG into the pipeline and have them sell it. But as I say, we're not going to make nearly as much money signing a big deal in advance with end users. But nevertheless, that's what we're going to have to do to make this work.

There's one more important thing I want everybody to be aware of: There's pending, bi-partisan legislation called the "RNG Incentives Act of 2022." This would give a 1 USD per gallon gasoline equivalent fueling credit through 2032. That's 10 years of fueling credit. And again, that tax credit, for a licensed dealer, who sells this gas, that tax credit can be paid in cash if you don't owe any taxes. So this is a lot of money. This is 29 cents per cubic meter versus the current market price at 6 dollars and 32 cents a million BTU of 22 cents. This is more money in the RNG Incentives Act fueling credit for the person that dispenses the RNG, this is worth more money than the cost of the gas itself. This is a lot of money that we're talking about.

As currently written, this only applies to road vehicles. It doesn't reach either farm vehicles or locomotives. So, I have been lobbying the Kansas delegation and Ron Estes is on board saying "I'll help you." And Jake La Turner's office called me today. And people are willing to try and help. The idea is that if this bill comes out of the Senate Finance Committee and gets passed, sometimes they pass a bunch of bills at the end of a Congress, which is about to happen, we're in

November. This Congress is going to be finished here in one month. If they try to pass this through at the end of the Congress, it has to be amended so it reaches farm vehicles and locomotives.

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One more thing I'll mention about this. I really like the idea of making a deal with the K&O railroad. The parent company is called Watco. According to my thinking if we get Watco to buy into this and say "we'll help you. We're your corporate partner, we want you to succeed" the idea is we can associate ourselves with this agricultural railroad in all kinds of other districts. If Watco will buy in to this saying "okay, we'll team up with you" then we can start propagating along the tracks of these rural railroads that are experimenting with RNG locomotives. There is a second agricultural railroad, Cimarron, that is also experimenting with RNG locomotives right now. Anyway,

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I'll go back to the steps for this bond.

First and foremost we need those biomass conversion service agreements. We need them. And if we don't have them, well then, we've missed this opportunity. I mean, its not the end of the story if we miss this grant opportunity, obviously. And there will be other grant opportunities. On the other hand, why not go for it? Why on earth should we not at least try to do this? What we need critically we need enough farmers in Kingman and surrounding areas to say "okay, if you get the money to build this plant we'll plant, whatever, switchgrass or sudan grass.

The terms of the agreement that I've spelled out here include a couple of different provisions one of which is: The agreement is only binding at such time as the District actually has the money to build this plant. Another is, upon a majority vote of members of the District, the rates can be increased to account for inflation. And finally there is a "drought emergency" provision. What I have written here is that if drought emergency is declared for CRP grass, then after that point, whatever acres are agreed, we only want half of them. That's the version of the drought emergency clause that I proposed.

What everybody has to understand here is in the event of a drought emergency, we're going to have to keep the plant running. And the only way we're going to be able to do that is with municipal waste. We're going to have to run around gathering paper waste to keep the plant running during a drought emergency year. In fact I am already looking at we can start running some of Kingman's paper waste right now, even in the plant as currently conceived.

There are two more steps. The other is you'll have to make an operations plan for harvest and storage of the biomass. What everybody has told me so far is that when you really know what the biomass supply is, we can figure that out later. And I'm sure that's true. So I am not really too concerned about that. The real step, the critical step is these biomass conversion service agreements.

There's a final step. A very important step. The District has to commission a report from a competent certified engineer. Well, the company, the enginering procurement contractor that's going to build this plant will provide that engineer. That's not really going to be a problem. That is not really a significant obstacle. I'm not really worried about that. These people are going to make a lot of money out of this. They're willing to invest a certain amount of time to bring all this together. So that fourth requirement isn't particularly critical in my view.

Gathering biomass conversion service agreements is critical.

Getting an interim end user agreement is critical. I don't know how long it's going to take me to do the second step. But as for the first step, I don't know what I can do about this. if you guys are going to do this you're going to do it. And if you're not, what can I do about it?

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END