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Duffy Fischer
Goldman Sachs Group, Inc.

Terrific. Well, good morning, everybody. Thank you for joining us. My name is Duffy Fischer. I'm the chemicals analyst at Goldman. Adam Samuelson, our agribusiness analyst, had to step away from the conference, to head back to New York. So he apologizes for not being here. But I'll step in and kind of moderate. We're very happy to welcome Green Plains and CEO Todd Becker, to the stage with us today to talk a little bit about biofuels and kind of the transformation that they're undertaking. Todd has been at Green Plains for a decade and a half. He's kind of seen it go from what I kind of call more commodity corn into ethanol, you know, into blended fuel, to now try to do some exciting things around you know, sugars and you know, oils. And I'll kind of let him take the ball and run with that a little bit. But again, thank you all for joining us today.

So, Todd, maybe to start us off walk us through the transformation that you're trying to take the company on today. Again, going from kind of a more basic corn into ethanol, now trying to do 3 or 4 different pillars and take advantage of some of the need for the world, you know, in different biofuels, different, you know, carbon sequestration plans, and maybe just, you know, bridge us in a waterfall manner, maybe off kind of where the assets were in 2022, where you're taking the assets, and kind of what will contribute to Green Plains in that period?

Todd A. Becker
President, CEO & Director

Yeah. We kicked off a technology-based transformation a couple of years ago. We knew that it would take us probably 3 to 5 years to get it done, and our goal was to get it all kind of completed in 2025 and kick off from there. And it's really around four pillars -- around protein, oil, sugar and decarbonization. And each of those have a- we're at a different stage in each of those pieces. And really what it is, is taking a business that what was traditionally volatile, unpredictable and on nonrecurring cash flows that into more of a less volatility, predictable and recurring cash flows. And coming through those four pillars, while understanding that the decarbonization of alcohol and ethanol is actually going to play a bigger role than we probably thought at the beginning of this transformation, and how to allocate capital a little bit.

You know, when we kicked it off, we thought the first thing we wanted to do was get more out of that kernel of corn that, we were crushing every day, cracking open much like crack open a barrel of oil. And within there, there's different high quality ingredients. And we weren't really able to get that as an industry. And our purchase of a technology company allowed us to open up several of those different areas. The first one we started with was getting higher quality, co-products from

something that was more of a commodity-based co-product around a protein. Low, low-quality proteins and animal feed into higher quality proteins. Because that's really what when we think about the transition away from commodity production and thinking about more like a wet milling business that some of the some of the bigger guys have that are a much bigger margin from that same raw material. We kick it off, really, by unleashing the power of protein, and we're in the middle of that transformation. It's taking us a little bit longer just because we can't get permits as fast as we thought. And the supply chain is still somewhat difficult around gear and electrical gear and those type of things. But we have five converted. We were one ready to go when we when we can get the permit, and we're going and we have a joint venture that's coming on this quarter as well. And the biggest protein system that's ever been built around cracking open this kernel of corn as well. So it's high-quality proteins going after first up pet food, aqua feed at the 50% protein level. And now we're increasing it to the 60% protein. We'll get into that. And the oil side really getting more low-carbon oils out of out of a corn kernel. It's a waste feedstock. So it has significant CI benefit when you look at things like renewable diesel and moving into jet fuel. And with the IRA, which I'm sure we'll get into a little bit as well, it's a favorable feedstock. And we continue to see those yields go higher and getting more and more out of that. And there's still more to go. And I think that's a bit of a Pandora's box.

On the sugar side, that's the most important part of what we're trying to do, which is- which is make dextrose instead of alcohol. And those margins are significantly better, by multiples, than what you would ever earn off of making alcohol today and getting into products, everything from food to industrial products. And when you think about the sugar economy that that we're in today and going into even in the future around fermentation and those type of things, more and more dextrose is going to be needed and there's limited capability to grow that in a traditional way. And so we have a technology that unlocks that.

And then the last thing is around decarbonization. You know, when we started out, we didn't really know which was going to be the most valuable. We knew sugar was probably going to be the most valuable opportunity for us. But when we look at allocation of capital, we're seeing decarbonization, especially in Nebraska, early decarbonization be potentially even greater than anything we ever thought, because when you look at the ability to take our carbon, put it on a pipeline, sequester it in geologic formations. The first one will happen probably in Nebraska. Well, it will happen in Nebraska in 2025, because the pipeline is already built, that we've moved our assets to and when you look at where we're going with our carbon, it's into Wyoming. They have primacy already. And they've just started to- much faster than EPA could ever do. They just started to approve class six wells in Wyoming, which tells you this is not a- it's not going to be an “if” anymore, just a matter of “when” we can get that pipeline operating. We believe that'll be in 2025. We're just getting ready to order our compression equipment. That's the best- one of the best returns, because of the IRA. If you would have asked me several years ago, you know, is decarbonization and sustainable aviation fuel really going to happen out of alcohol? I would have said no way. Can't get it done. And along comes the IRA. So when you kind of add all those things up together, the 2025 margin structure and starting a little bit in ‘24 is going to be much greater than we ever thought we would be able to achieve just making alcohol.

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Goldman Sachs Group, Inc.

Okay. And is there a way like a walking around number in your head? You know, again, three, five years ago, you took one bushel of corn, you converted it into some dollar value of DDGs and ethanol, whatever the ten-year average was for that. How much of an uplift, you know, if the dream works and kind of all the processes work, you know, as you hope them to that, you know, what's the uplift on a bushel of corn conversion, once we're done with it?

Todd A. Becker
President, CEO & Director

If I put it into a gallon perspective, which is how we think about it, if you go back in time, when we started the company earning $0.15 to $0.20 a gallon on an every year basis through the traditional- and we really at that point didn't get much out of our oil at all, our corn oil at all. That was traditionally what you were able to earn on an asset that cost you about $1.80 a gallon to build. Okay. And maybe some years you turn $0.50 a gallon, some years you earn $0.05 a gallon. It was really very volatile. Some years it was negative. So- and we've started there $0.15 to $0.20 long term margin structures. Oil, on top of that for the last couple of years, has been showing kind of $0.10 to $0.17 a gallon uplift. Protein, when we built the original protein systems, that's $0.12 to $0.15 a gallon uplift, on top of what you would earn in just making traditional ethanol

On the sugar side, that's really what we're focused on. That is about an $0.80 to a dollar uplift a gallon. And our first system will come on this year. And we're just finishing up this month to mechanical completion. And it will start sometime in February, March. Really gearing that up for some April deliveries of our first product. That will show the market the true value of our asset base, the true value of our technology. So that's $0.80 to a dollar a gallon uplift. We can't move as fast as protein because of just, you know, we want to make sure we don't overflow the market. But generally speaking, the market continues to grow for that type of product.

And then decarb-- decarbonization I mean, the first step in any, for example, in a Nebraska asset where the pipeline is in place and you know, that's going to earn somewhere around $0.40 to $0.50 a gallon during the first year of the IRA when we look at the 45 Z credits that are available, transitioning to a 45 Q later on, but the 45 Z credit, the faster you can decarbonize and bury carbon and sequester, the more money you're going to make for paybacks. I mean, it's going to cost us about $90 million to- to buy $90 million to $100 million to buy the compression and install the compression equipment. Okay. And that payback is less than a year. Once you once you through the IRA, through the 45Z, through sequestration-- and that's without California credits and without fuel credits to bury it in Wyoming. And like I said, the biggest thing that we saw, which would tell you that this is going to happen, is states with primacy. Number one, Wyoming, North Dakota, are starting to issue class six permits. And we just saw the administration say that Louisiana is going to be able to have primacy as well. So you're gonna have three states that does not have to get tied up in the EPA red tape. And you're seeing not much as being approved out of EPA for class six. But all of a sudden in Wyoming, you know, you know, last month, just starts approving class sixes. And we expect the ones that we're going to go into, they're not our classic six wells, but we expect the ones that we're going to go into be approved- be approved this quarter. And it's going to be really- that'll be a very big benchmark for our company, because we're one of the largest producers in Nebraska. And in Nebraska- he who sits in Nebraska on this pipeline that built already only needs laterals to access it, is going to be at a much-advantaged place for the next several years versus where others are going to build pipelines. And we're on others in Iowa as well, but it'll just take several years later.

Duffy Fischer
Goldman Sachs Group, Inc.

And then obviously today you're doing most stuff with retrofitting, using existing production assets. You know, you just run through those numbers. What does a greenfield look like? I mean, one, would it be a different structure than what you had traditionally, where you're just going back and retrofitting? What does that $1.80 feel like if you did kind of a new greenfield?

Todd A. Becker
President, CEO & Director

I think all in, you know, we've been looking at that because capital allocation is how we're focused on kind of the next couple of years. And we have significant ability to grow our asset base. We're really focused in Nebraska, and because of our advantaged position that we have at three of our assets, and we said to ourselves, what could we do there to potentially take care of- or take advantage of this 45Z and the IRA for the next couple of years, and when can you get it online? So we looked at everything from expanding a plant, which is probably not that much different than building these days. You used to build expand a plant for $0.50 to $1 a gallon. I'd say it's at least $1.50 to $2 hours a gallon just to expand a plant. And overall, over $2 a gallon, maybe $2.50 a gallon to actually build something new greenfield. Or- and then there's that hybrid in between where maybe we have an asset like York, Nebraska. We've looked at that. It's probably the best location in all of Nebraska. And it probably has our worst asset that we have as a company. So we say to ourselves, “should we try and take advantage of being the fact that we'll be early pipeline shippers” and so somewhere in between $1.50 and $3 a gallon is where you could probably build today. But with the 45Z credit, you could pay that plant off in probably three years, just on the 45Z credit alone, without any other things that have to happen. So we have a really good position. You know, I'm not sure anybody's going to build greenfields today. I mean, we certainly have enough capacity in this industry. I think it's going to come through expansions or maybe like a York, which just needs to be upgraded, that we have. But the money is there to pay it back. But if you were going to design- and we've looked at that because Fluid Quip, the company that we own, designs low-carbon ethanol plants in Brazil, low-carbon distillation, low energy distillation. And we've looked at doing something in the US as well. You would do it differently. You would you would really focus on your CI score, your carbon intensity score. If you're going to build a new plant, you look at your boilers and after gas boilers maybe moving to electric boilers, there's things to do to go after every point. This is really interesting. Every point of carbon that you can reduce from your traditional carbon score under 45Z is worth $0.02 a gallon, $0.01, $0.02 a gallon. So, you know, when you talk about reducing just ten points is $0.20 a gallon. When you go look back in history, that's better than the traditional margin. So advantaged Nebraska right now, it's advantaged Green Plains because we're the one of the largest shippers.

Duffy Fischer
Goldman Sachs Group, Inc.

Okay, and with such competitive economics, what are the odds that again like when ethanol first came out, you know, whatever, 15-- you know, we overbuilt the industry. Can others use similar

type technologies and do similar things, and all of a sudden you find yourself in kind of an oversupplied situation, with where you're trying to take it around the four pillars?

Todd A. Becker
President, CEO & Director

It's really going to come through- You may not be oversupplied, because if you decarbonize this alcohol, then you're going to get alcohol to jet. You are going to get SAF. And the administration gave some positive guidance around the GREET model. It won't be GREET to the same extent that we see GREET today, but it'll be- They can't help themselves, but to hit ethanol occasionally, from the environmental standpoint, they. They seem to have to take the pressure from the enviro side versus the truth. I'm not sure the truth sometimes matters from that perspective, but we already make a low carbon fuel. Decarbonizing it through sequestration will make it lower. If we can prove that this 30- because we get 30 points of carbon score, that's $0.60 a gallon. Just think about that. Just by sequestering alone, it's 30 points of carbon, $0.60 a gallon. When you look at- they're going to penalize a little bit I think. But it's not going to be enough to really matter. And I think what's going to happen here is that any decarbonized alcohol in the U.S., once we get the updated guidance on GREET for SAF, will be will be then moved into jet fuel. And the demand for jet fuel is so deep from that perspective, from SAF rep versus motor fuel. What's really interesting is even though you might read some of the negatives around aviation fuel that's out there, some of the hit pieces that it might- might be put out there, it's coming. And as soon as we decarbonize, there is technology out there that can convert this decarbonized alcohol all the way through to an approved drop-in jet fuel, and that will be the transformative demand that is needed, where I think you then can suck up all the other- if you're going to build something new, it would just you just got to build it around your low-carbon side so that you can get into jet fuel, because that's it. We're being pulled. Like we pushed our way in the motor fuel. Right? We through regulation and everything else, we just pushed our way in and, uh, not sure that we were really welcome it, but it is decarbonizing our- It did decarbonize and help our motor fuels, but this time we're getting pulled, from all over the world and all over industries. I think that's a difference this time when we think about the next five years, like I said, if you would have asked me five years or three years ago, uh, SAF from alcohol? Not a chance. You asked me now, absolutely going to happen because of IRA and 45Z.

Duffy Fischer
Goldman Sachs Group, Inc.

Okay, okay. I definitely want to come back to some of the technology stuff in some of the future. But I also want to get on the core today business, if we could. So looking at ethanol, if you would just kind of touch on where you've seen, you know, the margin environment goal for the last, you know, couple of months, where do you think we see supply/demand as we kind of enter into 2024, kind of how healthy do you think the industry is the core ethanol industry?

Todd A. Becker
P*resident, CEO & Director*

Yeah. I mean, the last couple of weeks have been pretty brutal on- has been a bit more brutal on the margins than we expected. And we saw some inventory builds. But up until that point, what really interesting about these inventory builds and these demand numbers is that every time you go back and you look at like, November just came out, demand was better and production was lower.

So the EIA is not getting it right. And I think we're seeing that a little bit right now even this week when, you know, as soon as they get to 1,100 or 1.1 million barrels a day of U.S. ethanol, we don't stay there very long. Number one, the industry is older and doesn't have the capability to run that, nor do we actually believe the numbers were actually over that. So we adjust it back. But we still see stocks somewhat more steady. But we're in a- we're in a better situation going into, uh, winter this year than, than last year, mainly because we have such a good, warm winter and people are still driving a lot. Now we'll see what happens with some of these snow storms that are supposed to come over MLK. But generally speaking, I think we're set up well, you know, but the industry does have a little bit more capacity this year than they did last year, and we'll see how that plays out. But it is getting older. So the harder you run, you can't run for very long. But I think generally speaking in 2024, you know, it might be a bit of a rough January/February, but I think when we come out of that, if the weather's good and driving demand is good and, and, uh, we've seen higher blends, especially where we're at relative to the price of, of gasoline. Ethanol is now about a 60 cent discount, and when we get to those wider levels, we see expanded blends. So we'll start to see potentially, you know, some of the some of the higher blends come on, as we started getting into driving season, especially if we're going to remain at this discount to RBOB. And so I think we're setting ourselves up well, although January/February is going to be that traditional rougher period of time. And I think we'll see some, some plants start to slow down during that period. And then from there, I think we'll get our stocks back into where we need to be. But we were in really good shape a couple of weeks ago, and we're still in pretty good shape relative to- to traditional levels. But overall, overall, we need a little bit of work to get done. And we started to see that- We started to see some response to that yesterday. And we really in the first probably couple of weeks that we've seen margins start to really expand back, but we've got a long way to go.

Duffy Fischer
Goldman Sachs Group, Inc.

Okay. And if we set MSC aside, how would you analyze your cost position, you know, on core ethanol vis-à-vis competitors in North America?

Todd A Becker
President, CEO & Director

Yeah, I mean, look, when we, we bought a lot of plants over the last 15 years that we would call the “misfit toys” that we had to fix. And so while we were able to do that from a cost per gallon standpoint, you know, our- what we were really focused on in 2023, and it's really the tale of two halves, was getting our plants back kind of running really, really well. And there was a lot of work that we had to get done in 2023, and the first half suffered because of that. We saw a 93% run rate of our plants in the third quarter. I think we'll see better than that. We saw better- at least that in the fourth quarter, like we had like we had told the market. So our plants are definitely running better. When the denominator is higher, your cost position gets better. Right? I mean, so when our denominator is higher on our production levels, our cost position gets better. We're never going to be- Some of our plants are in the top 5 or 10%. Some of our plants are in the top 50%. What we're trying to do is reposition our asset base that we want to get those more consistent run rates and not denominators higher and get our position continue to move up. And that's either going to come through- You know, one of the things we did is we sold probably our worst positioned plant in Atkinson from our standpoint was really dragged down some and dragged down our average cents per gallon on operating costs. So we'll look at our asset base to say what do we need to reposition.

Is there things we need to sell or the things we need to buy? Do we need to reposition a little bit, or do we need to make them bigger to get our denominators bigger, to drive down our operating cost per gallon? When you take a look at the justification to do that, and like I pointed out to you, especially in Nebraska, you know, it's you're going to get paid back very, very quickly for anything that you do. So, you know, we're going continue to work on it. We're not happy about first half of '23, but as we start to get into '24, we're much happy with the way that we're running our business.

Duffy Fischer
Goldman Sachs Group, Inc.

Okay. And if we don't get the uptake for ethanol into things like SAF and let's say electric vehicles continue to take a little bit of market share and gasoline demand comes down over, let's say, the next five years. What happens between the blend wall and the mandate in your view of that gets inverted? What does the industry do then? Or what's your suspicion what the industry will end up doing?

Todd A. Becker
President, CEO & Director

Well, I mean, not withstanding the fact that we believe SAF will come out of alcohol, let's just say leave that, leave that out for a second. We are going to have to blend more of our fuel into the fuel tank. And we saw we saw the eight governors in the Midwest that have been pressing the EPA and pressing the White House to go E15 year round. And I think that that's happening as we speak. So we'll get some of that demand. Look 1%, a 12% plant instead of a 10% blend takes care of everything. Okay. And when you look at two more percent, that's really the excess capacity. But in any given day, we really start to see sniffing around and exports again. So if you just think about what we do when you got base based demand of about 850,000 barrels a day of just blend stop, blending into the fuel, some days were 800,000 some days were 900,000 barrels a day. We're exporting about 80,000 to 100,000 barrels a day right now. And we're averaging production about 1020. So we're a little bit over, but we're not very far away. And when we're at 60 cent discount to gasoline, we start to see expanded blends. And right now, actually more interesting is the way that Brazil is positioned against the United States. We're starting to see sniffing around again from traditional exporters that we haven't seen for a while, where we would export to, and that could clear any- that will continue to clear any excess. It's the first time probably, you know, in about a year that we've been positioned well against Brazil to go reclaim some market share. And because of the way that the sugar harvest happened.

Duffy Fischer
Goldman Sachs Group, Inc.

Okay. Let's jump back into kind of some of the exciting stuff. I think that most of what I wanted on ethanol. Maybe, if you would, with your four pillars, if you risk-weighted them versus the opportunity for Green Plains, how would you rank them as far as the opportunity, you know, if I was going to come do some work on you? You know, what's the order that you would suggest that I do the work on those four pillars?

Todd A. Becker

President, CEO & Director

I think the first, if you would have asked me a couple of years ago, it would be different. But I think the first one you have to do work on, with us, is 2025 carbon in Nebraska. And when you just look at the three assets we have on paper today when we're sequestering carbon, it's about $120 million a year just from the 45Z credit, not including LCFS, not including the value of our carbon credits as well, which, you know, we don't really know where that's going to happen. It could be $30, it could be $50, it could be $100. They're very high-quality gold standard carbon credits. So right now we're even setting ourselves up for how are we going to monetize, because we will generate a carbon credit ourselves, that on top of 45 Z and on top of hitting some LCFS, Low Carbon Fuel Standard markets. So you got to do the work on that. I think people have ignored that up to up to now. They didn't want- people don't really want to hear about it, because nobody actually believes that, you know you're going to be sequestering carbon. But with Wyoming approving Class Six wells and the fact, just Google the Nebraska pipeline, I for certain reasons, I can't say the name of it, but you'll find it very quickly. Google the Nebraska pipeline, we have three of our assets on it, that is that is built already. It's going to get up and will be operating in 2025. And you have to do the work on it because it's not- just for our three assets in Nebraska, with the just 45Z, is $120 million a year. I think that's as much as or more than we were going to make on all of our assets traditionally through some decarbonization efforts. So that's where I would do- hat's where I'd start.

The second place I would go, being a chemicals analyst that you are, would be the look at our dextrose and look at how much of first industrial use of dextrose is growing, especially around renewable chemicals and those type of things, everything from enzymes to other- other things that are going to get made from dextrose that get made today from dextrose that's expanding. So I definitely do work around that. Look, we own and control this technology. We own the IP. We're the only ones that could do it today. And we're building the first one in Shenandoah, Iowa, ever done. First of its kind, serial number one. But it's traditional off-the-shelf technology that we just basically redesigned for use in a dry mill instead of a wet mill. If you're from agriculture, that's traditionally front end fractionation versus back end fractionation. That opportunity for us is the biggest margin opportunity that not- no government programs, nothing involved. Just go straight on. You crack open this kernel of corn instead of making alcohol, you're going to make dextrose $0.80 to a dollar a gallon, traditionally uplift equivalent. That's why wet mills make so much money. You know, the Cargills, the ADMs, the Ingredions, the Tate & Lyles. When you look at their margins structure, it’s much better than a dry mill ethanol plant. We're going after that margin structure. But this dextrose is going to be used in everything- to alcoholic drinks all the way through enzymes and chemicals. And the demand is there for this product today. And the great thing is, we buy a lot of product from a lot of these companies that need dextrose. So if you want Green Plains to buy the product from you, you're going to be- it's going to be bilateral. You're going to buy our dextrose from us as well. That makes those products. So we've set those up as well. But anyways just a quick update on that, we should be mechanically complete this month.

Duffy Fischer
Goldman Sachs Group, Inc.

Okay.

Todd A. Becker
President, CEO & Director

We are going to commission it over the next couple of month after that. We should be shipping our first product, you know, sometime in April. And that will show the market- that is a day that we believe that's the reinvention of our company from a standpoint of higher value margin opportunity. It's going to take us a while, but like I said, we own and control it and it's a product in demand today. We have people that want the product. It's a little bit again, when we started in protein, we pushed our way in and now we have people calling us because the world is dextrose short, in our opinion. And there's so many new renewable chemicals that are coming online that need dextrose to be fed into fermentation. That's where I would do our work next. Look, protein is well documented. What we're going to do there. We're going to we're making 50 Pro today. We're making a transition in 2024 to ship 60 Pro. We've made 60 Pro. Nobody else in the world has been able to do that. It's both- it's both going to be chemical, or three things -chemical, biological and mechanical processes. We own and control that. And we're shipping our first products really more in bulk this quarter. But we really want to ramp it up. We have really great- we have line of sight and good demand. We just got to get people to commit. But it's more global than it is domestic.

Duffy Fischer
Goldman Sachs Group, Inc.

Okay. Okay. And you mentioned, your dextrose was mechanically complete this month. Can you walk us through kind of all the projects you're working on, you know, where are they as far as the process goes, and what gets added in 2024 just from you- from your build out.

Todd A. Becker
President, CEO & Director

So look, first, when we think about the order that I gave you, on the carbon side, you know, we're going to order our equipment hopefully this quarter for decarbonization of Nebraska. Our compression equipment. We're finalizing what we need. You know what's interesting is that when you went back a year ago, the wait time on compression equipment was crazy, right? Because everybody said I got to have compression. The pipelines are going to get built. We've seen that wait time compress significantly, and so you don't really have to worry about compression equipment today. So when we think about capital allocation, that's already financed. We're not going to use any capital off our balance sheet, to get that- to get that. So it's not going to take any, any balance sheet capacity from the standpoint of cash to get that done. And then hopefully that's going to get delivered later in the year. And then we get it up and running for ‘25. So that's going to be the first capital.

The second capital is right now we're finishing up both dextrose, so there'll be some capital out on that, not a lot left. And then our [Haralson JV], which is will be the biggest protein system we've built, you know, in North Dakota at the biggest- one of the biggest canal plants in the country. And that'll be finishing up this quarter as well, mechanically complete. So we got a lot of things just kind of finishing and get ready- getting ready to kick off.

When we think about from there we're waiting for a permit to build another MSC- another protein system. It's going to take a little bit of capital to upgrade into 60 Pro, as we learned. You know, there's these plants are not set up perfectly. So but again that's minor. And so then from there, you know, we're really going to have to figure out where sugar number two is going to go, a real big sugar

system. What we did in Shenandoah is a nice-sized business, 200- 200 to 250 million pounds of sugar, which, by the way, is a big, big stream. but for us, we can go a lot bigger than that. The market is 15 to 16 billion pounds a year, is how big the dextrose market is it? Just in the US, not internationally. And so we're looking at where maybe in a plant that is harder to decarbonize like a Madison or a Obion. If you put sugar there you don't need carbon. I mean basically at that point there's really not sequestering carbon anymore anyways, because you're using that carbon, if you look at that sugar molecule, it has carbon in it. So you don't actually- you don't actually omit carbon when you're making dextrose. So I would say we'd- we'll have to figure out probably this quarter where dextrose number two goes. It'll be a bigger system that converts a bigger plant at more scale. You still want to have some alcohol at that plant because you want to send your, you know, some of the waste streams back into fermentation. But I would say that's probably where we're going to go next.

And then oil is, you know, oil is going to be this Pandora's box through technology that we can try to get the rest of the oil out of the corn kernel. And what we're doing on our joint venture that we have with Shell and York, that's another thing to watch closely, that should start up this year. And that is basically like, at the simplest terms, dropping a corn kernel into a- into an extractor and it just blows it apart and all, you get out, you get all the oil, all the protein and all the sugars, especially as-- That's going to get start up the first half of this year as well. So when you think about it, starting a new protein system, biggest in the world, starting a new sugar system, serial number one. And starting up the joint venture that we have with Shell on our combination of our MSC technology from Fluid Quip, and their SFCT, which is fiber conversion technology, putting those two together could be truly transformational to technology of processing agricultural products, because it's feedstock agnostic at that point. You could drop a soybean in, a wheat kernel in, a corn kernel in, and at the simplest form, you're going to send streams in, and just blow apart everything that's left. That would be something I would encourage you to watch that sometime this year as well, because that- when we announced that a couple of years ago, the future is today, is this year.

Duffy Fischer
Goldman Sachs Group, Inc.

And then as you pull out some of the higher quality products, you know, from the DDGs, basically, what happens to the residual DDGs? Does it become less valuable, do you think, or?

Todd A. Becker
President, CEO & Director

No, that's the crazy thing. We haven't seen any drop in value because people weren't buying our product for protein. It's more of a fiber product. They were just buying it just to kind of use it as a filler in many of their animal feeds, or as a corn replacement, but it really wasn't focused on necessarily protein values. It's more of on fat and other things. So we haven't seen anywhere yet a drop in the value of our product because- the volatility of that product as an industry is all over the place, I mean, you have such volatility and what this industry puts out on that byproduct. And so the market never really paid you for it. So all we've done is taken that volatility and made a much smoother line that gives our customers that buy this lower quality product just a consistent product every day. And actually we're even moving into the fiber markets, which is even a higher value because of what we've been able to do. We're starting to look at fiber markets. That and there's a good demand for fiber in all different types of industries. So yeah, I mean we've been able

to smooth that curve out with no, no reduction or no degradation of value of the traditional product, which was- that was the big worry of investors and shareholders that they said, well, that that's going to be worth a lot less has been worth really more- Not one penny less, quite frankly.

Duffy Fischer
Goldman Sachs Group, Inc.

But also, may to push back, if I own a feedlot and let's say you get up and I'm buying your DDGs, you know, and you've stripped out the protein that I wasn't paying for, ostensibly, will I see lesser results on my feedlot because I don't have that protein in there?

Todd A. Becker
President, CEO & Director

No. You know, the cow- there's no there was really no need for that relative such small amounts, right? So there really wasn't a big need for that anyways. And in DDG, you weren't, again, you never bought it for protein. You got your protein- it was a very inefficient source of protein. It just kind of moved through the animal. You know, it didn't really convert into much. And so they bought other things for protein, much different than what they would pay for us.

They actually like, if you look at different animals, if you look at the animal species of poultry, they liked it for the fat. So stripping out the oil has kind of lowered our ability to sell on poultry, but it hasn't really dropped off much. But when you get into more like dairy and you get end up swine or you get into cattle, there's very- it's a filler. It's always been a filler product but a replacement for corn, more of a filler. When you need protein, you go to things like soy. More interestingly enough, though, is now the those guys are buying our 50 and 60 Pro products. You substitute now for their soy products in certain diets, and that's how we were able to make inroads with our new products.

Duffy Fischer
Goldman Sachs Group, Inc.
Okay. And you'd mentioned something that hits my chemical industry quite a lot. You know, the shortage of compressors or at least very long lead time, a lot of inflation that we've seen in CapEx projects. What's been your experience, because you have been building stuff over the last couple of years, you've still got stuff on the docket. What is kind of the run rate for inflation in larger CapEx projects?

Todd A. Becker
President, CEO & Director

Yeah, we haven't seen- look, I mean cost of people haven't come down. So we've been getting good construction crews is still hard to do. I think we're starting to see this this big build that we saw on soy crushing and soybeans, that's starting to at least slow down a little bit. So we're starting to see at least a bit of a release of things like pipefitters and other things like that. The big thing, when you're building something is gear [inaudible] your gear. Your electrical gear, is 80 weeks-plus. Yeah. So if you need something in the next, you know, six months to build something, you're not getting it with gear. We're literally - literally right now for our sugar system in Shenandoah, Iowa, we're tracking every movement of the truck that has our gear on it from Mexico. Getting through the

border, you know, we were worried about that. It's going to come through the border. We are literally tracking the movement of electrical gear. That's the biggest- everything else you can get done, it's still high-cost. But gear is 84 weeks today. You know, anything, any kind of good gear. You want dumb gear? Sure, you could probably get it made. You want smart gear, which is what you want to put in your plants these days, it's a year and a half. It's just- And it's not stopping. And Siemens has very tight controls, and it's not getting any better.

Duffy Fischer
Goldman Sachs Group, Inc.

Okay, okay. We're running out of time here. I always ask everybody around ag, so I haven't forward sold all the corn on our farms yet. What's your price for corn next year?

Todd A. Becker
President, CEO & Director

Yeah, I mean, there's nothing good in agricultural prices today, in my opinion. I think people underestimated Argentina's return to the market, especially in soy. And I think you're seeing that in margins already. What you saw was soy crush margins have come down and are just flat through most of the year today, have come down to more traditional levels than we saw- the Lollapalooza that's been happening for the last several years in soybean crushing. But I think- I don't- I won't take a collection for any of them. It's still a pretty good business to be in. But overall, look, I mean, you know, the U.S. farmer, the ingenuity of the U.S. farmer and the ability to make more per acre is not going to stop anytime soon. We're going to get more bushels per acre of everything we produce. Mother Nature plays cruel jokes on all of us, as you understand. But as we get into too hot, too dry or too wet or too cold, Mother Nature seems to, you know, play cruel tricks on the on the longs. And we're starting to see it already. Look, I think next year is, where we're priced, at around $5 for the December corn for next year, we have a chance to go back to the low fours and any kind of rallies right now, the path of least resistance for anything in agriculture is lower, because of the world can react very, very quickly. And we're going to grow more per acre with better technologies that we have from all of the seed companies. So, sell the rallies, is what I would say. Any time you see a big rally in agricultural products, probably meant to be sold.

Duffy Fischer
Goldman Sachs Group, Inc.

Perfect. Well, Todd, thank you so much for coming down and spending some time with us. Great story, so hopefully we can deliver and, you know, help improve the world a little bit. But thank you so much.

Todd A. Becker
President, CEO & Director

I appreciate it. Thank you.