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PRESENTATION

Operator

Good morning, and welcome to the Green Plains Inc. and Green Plains Partners First Quarter Conference Call. (Operator Instructions)

I will now turn the call over to your host, Phil Boggs, Executive Vice President, Investor Relations. Mr. Boggs, please go ahead.

Phil Boggs - *Green Plains Inc. - Executive VP of IR & Treasurer*

All right. Thanks, and good morning, everyone. Welcome to Green Plains Inc. and Green Plains Partners first quarter earnings call. Participants on today's call are Todd Becker, President and Chief Executive Officer; Patrich Simpkins, Chief Financial Officer; and Leslie van der Meulen, EVP of Product Marketing and Innovation.

There is a slide presentation available, and you can find it on the Investor page under the Events and Presentations link on both corporate websites. During this call, we will be making forward-looking statements, which are predictions, projections or other statements about future events. These statements are based on current expectations and assumptions that are subject to risks and uncertainties. Actual results could materially differ because of factors discussed in today's press releases and the comments made during this conference call and in the Risk Factors section of our Form 10-K, Form 10-Q and other reports and filings with the Securities and Exchange Commission. We do not undertake any duty to update any forward-looking statement.

Now I'd like to turn the call over to Todd Becker.

Todd A. Becker - *Green Plains Inc. - President, CEO & Director*

Thanks, Phil, and good morning, everyone, and thanks for joining our call today.

Our recent announcements demonstrate that our ongoing transformation continues to gain steam as we achieve milestone after milestone. Achieving 60%-plus protein concentrations is an event that we have been aiming for and discussing with you for some time, and we announced our success a couple of weeks ago. Our commercial progress on protein and high-value ingredients is exceptional as the team has added new customers across multiple species. We now (technical difficulty) in the quarter, over production from the industry resulted in high ethanol inventories, which led to an extremely challenging margin environment.

On top of that, we have what we believe will be our last quarter of significant negative absorption from our modernization program. We also had 36 distinct individual operating days where we could not get adequate rail service to operate one or more of our plants and increased corporate costs due to onetime reclassification of compensation along with additional onetime legal fees. This all impacted our quarter negatively and should not be recurring other than wage inflation, which Patrich will discuss later on.

We had indicated on our last call and at recent conferences that ethanol margins will be very weak during the first quarter, so it should come as no surprise. Overall, our ethanol crush margins were a negative $0.07 per gallon in the quarter. However, I'm happy to report since the end of the quarter, things have changed for the better, and we have been able to take advantage of some of the appreciation in crush.

Ethanol margins have improved significantly off the lows we experienced in the first quarter. Today, on paper, second quarter margins exceed $0.25 per gallon in the crush margin, and that's factoring in strong renewable corn oil values and our protein business. We have locked in about half of our open gallons for May and June towards the recent highs. We came into the quarter with minimal price exposure to natural gas markets as we have locked in most of it for 2022 at much lower prices, as indicated on previous calls.

And lastly, we have seen very strong pricing on vegetable oils, which is also helping. Besides our transformation update, I think this is a really important point. I'm happy to announce that for the first time in over 2 years, all of our plants are currently capable of running at capacity. Our multiyear upgrade and modernization program is finally complete with our Madison and Mount Vernon locations returning to full rate, and we have completed necessary grain bin repairs at York.

In fact, Madison and Mount Vernon are capable of running at rates that we have never seen there before, which is great for the rollout of our protein technologies. We anticipate that second quarter utilization level should be strong, subject to rail service, which so far this quarter has been somewhat better.

Operating our plant safely and consistently is crucial to our long-term success as we deploy MSC technology across our platform. Construction at our MSC facilities in Central City, Mount Vernon and Obion continue to make good progress. We will continue to post new construction update photos, so I encourage you all to check them out.

Current construction schedules now show 2 of the facilities coming online in the third quarter with Obion in the fourth quarter, although we are working diligently to shave time off the schedule, adding extra shifts to start up as soon as possible as engineering is underway for our next 2 sites in Madison Superior and anticipate breaking ground at those sites late in the year or early in 2023.

We continue engineering our turnkey JV partnerships and they have the project out to bid, and we believe it will be the largest MSC system in the world when completed. We hope to get all of that what we need in the next coming weeks, allowing us to break ground.

During the first quarter, we completed a new revolving credit facility with sustainability-linked targets. This facility replaced our prior Trade Group and grain revolvers, consolidating our overall working capital financing into one facility for the first time in our history. This financing allows us to streamline how we fund our business internally, expand access to working capital collateral, while also linking our capital structure to our sustainability goals.

Green Plains Partners increased their distribution for the third quarter in a row, rising another $0.05 to $0.445 per unit. This is supported by the partnership's long-term minimum volume commitments and optimized balance sheet, allowing for stable operating results. Green Plains ended the quarter with over $620 million in cash on the balance sheet, leaving us in a strong position to execute on our transformation plan. Again, I think this is important that even after a quarter of weak margins, we remain in great financial shape, especially with a better margin outlook. I will come back on the call to provide a more thorough update on the exciting protein trials and next steps across our transformation plan.

Now I'd like to turn the call over to Patrich to review both Green Plains Inc. and Green Plains Partners financial performance.

George Patrich Simpkins - *Green Plains Inc. - CFO*

Thank you, Todd, and good morning, everyone.

Green Plains consolidated revenues for the first quarter of $781.4 million were higher than the same period a year ago of $553.6 million, driven mainly by higher prices and run rates. Our plant utilization rate improved year-over-year with an 83.1% run rate during the period comparing favorably to the 71.1% run rate in the prior year first quarter.

As Todd indicated earlier, and consistent with our message in Q4 of 2021, we are now in a position to achieve higher utilization rates across the platform as we move through 2022, mainly due to the completion of our modernization programs. Consistent higher run rates for our platform remain key to supporting our transformation, reducing fixed cost absorption and improving margins long term.

For the quarter, we reported a net loss of $61.5 million or $1.16 per diluted share compared with a $6.5 million loss reported for the same period in 2021. Adjusted EBITDA for the quarter was a negative $27.8 million compared to $15.4 million in the prior year quarter, largely due to weaker ethanol markets as well as higher corporate costs, driven partly by higher wages and onetime adjustments, coupled with comparative over-performance of our Ag and energy segment in 2021.

For the period, we realized a negative $0.07 per gallon consolidated crush margin. For the quarter, our SG&A costs for all segments was $30.9 million compared to $23.5 million reported in Q1 of 2021. The increase of approximately $7.4 million is not indicative of the normalized SG&A run rate for 2022, but is driven mainly by a number of onetime corporate expenses related to professional fees and adjustments to compensation. We have seen an increase in inflationary salary-related expenses and slight increases in head count to support our business transformation, but expect our normalized SG&A run rate for all segments to be around $23 million to $24 million per quarter through 2022.

Of that amount, we expect corporate SG&A costs, which came in around $18 million in the quarter to be right around $13.5 million going forward. Interest expense of $8.8 million for the quarter was $22.9 million favorable to the $31.7 million reported in the prior year first quarter, mainly as a result of a $22.1 million charge related to the partial extinguishment of our 2022 convertible notes. The remaining difference in interest expense is attributable to a combination of slightly higher interest rates and higher debt balances, offset by the effect of capitalized interests.

For the remainder of the year, based on expected debt levels, our cash interest expense should remain consistent with prior guidance of $10 million per quarter before capitalized interest. Our income tax benefit for the quarter was $1.2 million compared to a tax expense of $1.9 million for the same period in 2022, resulting from a cumulative valuation adjustment to our deferred tax asset, which is reassessed quarterly.

At the end of the quarter, the net loss carryforwards available to the company were $114 million, which may be carried forward indefinitely. Our normalized tax rate for the quarter, excluding any valuation allowance adjustments was 23.3%.

On Slide 9 of the earnings deck, we provide a summary of the company's balance sheet. As shown, we ended the quarter with $634 million of cash and working capital, net of working capital financing compared to $666 million for the prior year quarter. Our liquidity position at the end of the quarter included $629.2 million in cash, cash equivalents, restricted cash and marketable securities along with approximately $45 million available under our working capital revolver.

For the quarter, we allocated $62 million of capital to profit sustaining and growth projects including $36 million to our MSC protein initiative, about $13 million to other growth initiatives, including plant modernization initiatives and approximately $13 million towards maintenance, safety and regulatory capital. We continue to anticipate CapEx for the year of $250 million to $300 million based on our 2022 plan and current construction schedules.

I am pleased to report the partnership realized another steady quarter with adjusted EBITDA of $12.6 million. EBITDA was lower than the $13.8 million reported for the same period a year ago as a result of the sale of the parent's forward plant. However, the partnership's stable operational performance and low leverage enabled the partnership to enhance returns to unitholders by increasing the quarterly distribution of $0.445 per unit while maintaining a 1.06x coverage ratio for the quarter.

For the partnership, distributable cash flow was $11.2 million for the quarter, comparing favorably to the $11.7 million for the same quarter of 2021 when considering the volumetric changes from the sale of the transport plan. Over the last 12 months, the company produced adjusted EBITDA of $51 million, distributable cash flow of $44.9 million and declared distributions of $34.1 million, resulting in a 1.32x coverage ratio, excluding any adjustment for the prior principal payments amortized in the past year.

Now I'd like to return the call back over to Todd.

Todd A. Becker - *Green Plains Inc. - President, CEO & Director*

Thanks, Patrich.

So we have often pointed out late 2022 and 2023 as an inflection point for our company, and we are on track to achieve our transformation. As we've done on prior calls, I'd like to walk you through an update of each of our strategic pillars, protein, oil, sugar and carbon. But first, let's spend a little bit of time on ethanol since we still do make some and we know it's important for you to understand the economics of the current market.

To reiterate, margins have rallied off the Q1 lows, and we are benefiting from that. We started the quarter opened to the crush, but as we see these recent highs, we began to lock in margins during that multiweek window. With April over, we are focused on locking down so May and June as we saw the opportunity to return to profitability.

It also helps when our platform is once again running at full rate. Based on the current market, our full company EBITDA for the quarter is tracking over $50 million and corporate costs have returned more towards normal as well. We still have some open exposure of approximately 50% of what's left to produce for the quarter, so the numbers could move around a bit, but we do know summer driving season and geographic locations could still be beneficial.

Looking forward to Q3 and Q4 margins, they also have recovered, but we remain fully open other than the fact that we own our natural gas cheaper than today's prices. Our protein trial at Wood River was simply groundbreaking and exceeded all of our expectations. We ran this trial for a full month and quickly learned how to dial in the plan to achieve higher protein concentrations. Within 5 days, we were producing near 60% protein. Our engineers and operators quickly took those learnings from the early days of the trial and began to dial in the mechanical processes necessary to achieve higher protein purities and increased yields.

For the back half of the trial, we ran over 61% protein concentration and began to see days with yields of up to and greater than 4 pounds per bushel. In addition, our learnings also resulted in the ability to achieve record-high low-carbon renewable corn oil yields, up to and sometimes exceeding 1.4 pounds per bushel, and we believe we have seen the future of this technology.

Let's think about what we just accomplished. We have demonstrated for the market and for our customers, our ability to produce a high-value 60%-plus fermented protein ingredients for the first time from a dry mill by our refinery and not just in some sort of small batches. The old rule of the thumb is if you can achieve success for 10 days in a row, you need to go back to square 1. After 10 days, we just kept going. This was across the entire fermentation process of our Wood River plant and sustained for over a month. On top of this, we achieved low carbon renewable corn oil yields that were 75% above the industry baseline and exceeded our prior expectations of 1.2 pounds per bushel.

Market validation efforts are now underway in earnest in both internally and externally. We are providing quantities to numerous customers across species and regions include South America and Asia. We are also utilizing our in-house innovation center platform to develop and validate aquaculture diets and performing fee trials to demonstrate what we believe to be a superior nutritional benefits from this predigested plant-based proteins and yeast created through fermentation. It is truly unique, and we are excited to have achieved this result as early as we have.

After acquiring Fluid Quip less than 1.5 years ago, we laid out a vision to reach this goal in 3 to 5 years, and we are already ahead of schedule. We believe over the next 2 years that we will convert a significant portion, if not all, of our production to 60% or higher protein. We anticipate having additional partnerships on our protein products over the next several quarters as we move to ingredients that provide not only higher protein concentrations, but also nutritional solutions. Currently, there's nothing I see that would prevent us from reaching our forward targets in 2024 and 2025.

Low carbon renewable corn oil continues to be in high demand with prices hitting record levels during the recent months. We are now seeing strong price indications for the last half of the year. When completed with the MSC builds, we believe we will push over 400 million pounds of low-carbon oils, which has a CI score of an average 20 points lower than soybean oil, making in a premium strategic feedstock for the rapidly expanding renewable diesel industry.

In addition, Fluid Quip recently announced a new technology offering, DCO+ in order to offer the industry a path to expanded renewable corn oil yields as well. This technology is covered under our current IP suite and is the beginning of making Fluid Quip technologies truly modular. We also anticipate completing this at some of our own facilities ahead of full MSC build-out, where fermenting takes a bit longer, such as Minnesota as we are able to engineer and deploy this technology to increase renewable corn oil yields more quickly as it does not add to a mission of a plant in any meaningful manner.

We continue to engage in substantive discussions with potential partners regarding our renewable corn oil. We have been patient on this front and have continued to benefit from the strong market in the meantime. The technological developments and process refinements Fluid Quip has been working on with us only enhances our ability to provide higher corn oil capacity over the long run and makes Green Plains overall even more valuable.

We are excited to announce that Shenandoah will be a site of our first full-scale clean sugar technology deployment. We were recently awarded some financial incentives from the state of Iowa and the city of Shenandoah totaling approximately $11 million over 20 years. This will benefit the project development to make Shenandoah our first fully developed biorefinery platform of the future, complete with protein and sugar operations at a dry mill. This 30,000 bushel per day grind capacity glucose dextrose system or the an dextrose system, will be uniquely positioned to add significant value and demonstrate the possibilities for future development of this initiative.

We expect to make food grade as well as industrial-grade products. Engineering is ongoing, and we continue to anticipate breaking ground later this year with anticipated completion by the middle or end of '23. Our potential colocation partners continue to engage in substantive discussions with us as well, as well as potential off-take partners.

Our carbon reduction initiatives remain on track, and we are exploring how to expand to new areas. We have several main areas of focus with the largest being our participation in the Summit Carbon Solutions pipeline. They have been able to secure significant equity investments during the quarter from key players. With 8 of our facilities committed to their project, their success drives a significant contribution to our low-carbon strategy, and we remain confident we are partnered with a winning project.

Summit continues to make progress on permitting it right away and late last week announced their partnership, which gained access and partnered with a fully permitted 100 million ton CO2 storage site in North Dakota. We remain constructive to overall carbon prices long term as well. We continue to evaluate alcohol-to-jet opportunities and have explored several new paths as well that are emerging as possibilities. We also remain focused on some sort of direct injection in the Eastern plants. The questions we all have to ask ourselves is whether all of our biogenic carbon should end up in the ground as there could be opportunities in other products above the ground.

We also believe new opportunities exist in bio-based -- biomass-based heat and electricity, further reducing our carbon intensity of our ethanol. In the end, I believe traditional Gen 1 ethanol production will be the most economical path to a low to zero carbon fuels as the base infrastructure is in place today and we believe becoming more valuable.

So where does that leave us for our margin expectation for 2022? Even with Q1 results, we continue to believe our prior numbers of approximately $140 million to $160 million from corn oil and $40 million to $60 million of EBITDA from protein as we bring more online and look for success of our 60% protein marketing. We look forward to keeping you all updated on these efforts in the quarters ahead.

Again, while first quarter experienced weak ethanol margins, currently, the balance of the year looks much stronger. Corporate SG&A has trended a bit higher with wage inflation and overall costs increasing, but we are attracting great talent and retaining great talent at Green Plains for our transformation as we have seen some leveling off of wage pressures for the short term at least. Since we still make biofuels, it's important to note the EPA issued an emergency waiver to allow E15 to continue to be sold over the course of the summer months and the administration, including the President, acknowledge this product is better for the environment and for consumers as it is more affordable than E0 or E10.

We have surplus supply to help make up for recent events tied to Ukraine conflict and the corn fields in Midwest continue to serve as our strategic food and fuel reserve. States continue to expand low carbon fuel policies as well, and Iowa is leading the way on requiring E15 to be offered at most gas stations, something we think other states will be quick to follow. Even more important is the letter to the EPA for Midwest governors requesting the 1-pound waiver to be eliminated, which would force the refiners and pipelines to ship a [BOB] with lower volatility and effort, a workaround to allow a permanent round -- permanent year-round E15 and higher blends in these states.

The final letter included 8 states that represent just over 10% of the U.S. population and approximately 10% of the U.S. fuel demand, the equivalent of the California market. We are hearing positive disposition from the government, which could increase demand by over 500 million gallons per year of ethanol if this waiver happens. That will be a game changer and is bullish to our legacy business and certainly to our expanded production of low-carbon renewable corn oil as renewable diesel industry continues to be transformational as well.

So even without these tailwinds, we can see the inflection point in our -- even with these tailwinds, we can see the inflection point in our transformation to Green Plains 2.0, and we are closing in on achieving escape velocity from historically volatile fuel ethanol economics.

Thanks for joining the call today, and we can now start the Q&A

QUESTIONS AND ANSWERS

Operator

(Operator Instructions) Our first question comes from the line of Jordan Levy of Truist Securities.

Jordan Alexander Levy - *Truist Securities, Inc., Research Division - Research Analyst*

Had a lot of exciting recent news with successful trials for 60 pro and the yields you were able to achieve there and you talked to new protein customers, fluid quick technology and rollout and that sort of thing. And all of this points to some really exciting possibilities as we move to '24, '25, given my number potentially above some of the numbers you've already put out there?

But broadly, clearly, there's a ton of caution, even fear in this market. So my question is -- how can you use what you've already accomplished being the completion of Project 24 now, hi-pro Wood River, Shenandoah and so on, as tangibles to show the market that these base numbers you've talked to -- for 2024 plus are achievable or even have some upside potential to them?

Todd A. Becker - *Green Plains Inc. - President, CEO & Director*

Yes I think, the key here is going to be, obviously, running at full rate because when you run the protein systems, you want to run your full grind and even continue to expand those grinds, which I think we have possibilities as well. So completing not just Project 24, but some of the modernization updates post Project 24, like new dryers in Madison, Mount Vernon and then obviously getting York back up and running is going to be helpful as well.

So that you start with a strong base and on top of that, what we're learning at Wood River and Shenandoah is, again, giving us great confidence. Number one, even at the 50 pro sales that we have on, we've just gotten approved by another major pet food brand to supply them product. We went through a year of audits with them. This isn't just a let me call somebody up and sell them some in to pet food.

This is a long process where they come out and they do significant audits on your sites where they want to buy from to make sure, obviously, the product is safe to ship and safe to use. And so we just got a second of a new major pet food brand that has -- is going to beginning to use our product, and we're in late stages with several others as well. We started some of these processes even 2 to 3 years ago before -- we were even making products in our own platform.

So we're seeing success there. Even more exciting, though, is after we announced the 60 pro success, it wasn't that we had to make calls out is actually that we got the calls in. We got calls in from around the globe from producers of aquaculture and swine who want to use this 60 pro fermented product as a replacement for some of the products that they've seen. Why? Some of it is around what 60 pro fermented protein does, but it's also around what it can do to help with fresh color and obviously feed conversion ratios, et cetera.

So everything that we've seen, it was -- while product was -- we did a lot of product development out on the 50 pro, we're getting a lot of inbounds on the 60 pro. We're sending our first shipment of 60 pro to Southeast Asia and 50 pro. We're also sending -- getting ready to send our first shipments of 60 pro into South America as well. And we're seeing real interest for those products as displacements for other products in the market.

Lastly, I'll only say, when you look at pricing comparisons of a fish meal, right now, low-quality fish meal in Peru is trading around $1,900 a ton, high quality around $2,300 a ton. So obviously, the expectations are high. We'd love to get those prices, but we know that's probably not in the cards today, but somewhere between where we started and those high numbers there's, opportunities to start to displace other products in those markets.

So as I said, this is just a matter of not if, but a matter of when this is going to happen. We know that we can make the product. And our intent ultimately is to basically make it across our whole platform.

Jordan Alexander Levy - *Truist Securities, Inc., Research Division - Research Analyst*

That's a great segue into kind of my next question and that is recognizing the 60 pro trials kind of just concluded and the time you talk to run these programs with the customers. Have you seen any change in the time length needed from the first discussions you're having in tests to securing for long-term off-take knowing the kind of importance the market sees in those contracts?

Todd A. Becker - *Green Plains Inc. - President, CEO & Director*

I think the time will be a lot shorter on the 60 pro than it will be on the 50 pro. And as Leslie's here, if you want to, Leslie, maybe comment on what you're seeing as well to give our shareholders a bit of a view on why 60 pro is a lot different to the potential customers.

Leslie van der Meulen - *Green Plains Inc. - Executive VP of Product Marketing & Innovation*

Yes, so in essence, by achieving the 60% mark and possibly even higher, we put ourselves in a different category. So the formulating nutritionists on the -- either the aquaculture side or the pet food side has now an ability to use more of the product. It fits better in the formulation. A lot of these diets are already dialed into using whether it's protein concentrates, corn gluten meals or fish meal.

So it was imperative that we really joined that more elite group of ingredients. So that's really what opens up. And I think due to the tightness in the supply of those markets, to Todd's point, that's why we're seeing a lot of inbound calls quite aggressively since this is really the only new scalable source available to many of those customers.

Operator

Our next question comes from Laurence Alexander of Jefferies.

Laurence Alexander - *Jefferies LLC, Research Division - VP & Equity Research Analyst*

I just wanted to follow-up on the discussion about the outreach from the aqua feed. What do you see, based on what you're hearing now as the time line for validation contracts in place to validate the ASPs and the J-curve that has been sketched out the last couple of years?

Todd A. Becker - *Green Plains Inc. - President, CEO & Director*

This is Leslie again.

Leslie van der Meulen - *Green Plains Inc. - Executive VP of Product Marketing & Innovation*

Yes. So there will always be the need to test and validate the product within the systems of the farmers, and that really is a question that we leave up to them, whether they want to do a 3-month trial in a specific phase of life or whether they want to build some more data by running certain life bases concurrently. So we expect with our own internal validation efforts having been kicked off that we can actually supply a lot of data ahead of time.

So that we don't have to do this with each customer, but traditionally, you could see still time between 3 to 6 months to really get to the level of what's the optimal inclusion rate of the product.

Laurence Alexander - *Jefferies LLC, Research Division - VP & Equity Research Analyst*

So that would imply that you should have, you have to speak to the J-curve economics by early next year?

Leslie van der Meulen - *Green Plains Inc. - Executive VP of Product Marketing & Innovation*

We believe we're on track for that, correct.

Laurence Alexander - *Jefferies LLC, Research Division - VP & Equity Research Analyst*

And I guess, just secondly, if you look at kind of the new opportunities on the biofuel that are opening up on the biofuel front, from a capital allocation business focus perspective, do you view $1 of EBITDA as the same if it's from biofuels or from dextrose -- or do you also look at the relative valuations of fuel companies and food ingredient companies. And so -- and how does that change your incentive to participate in the next wave of biofuel projects that might be on the horizon?

Todd A. Becker - *Green Plains Inc. - President, CEO & Director*

From our standpoint, what we'll get capital allocation is recurring and predictable cash flows. And so while biofuels is going to have some spikes and obviously, like we've seen as well as some weaknesses like we've seen, when we look at our dextrose and glucose business that we believe will develop over the next several years, those are going to be recurring, predictable cash flows and nonvolatile.

Because we believe we will enter into partnerships and supply agreements and co-location opportunities with potential partners. And so capital will -- while certainly biofuels are still subject to policy. When we look at our dextrose and glucose opportunity, it's really not subject to policy. This is just subject to when it's available we believe the demand is there for it. And that's really evidenced by, again, the calls in. It's not the call out.

It's now the calls in now that we've kind of had success. And now we do also have -- what we didn't say here is we now have York has the capability to run not just batch, but continuous as we put new unit operations in there for ion-exchange and refining. So that should also continue to show our success and our capability to make this product. And so again, allocation will get -- or capital allocation, first and foremost, will go against things that are predictable, recurring and expanding, which will expand our gross margin percentages and obviously we're still going to make a lot of fuel for a while. So it's great to see some expanding opportunities there. But it's all going to be around -- any capital allocation there would be just for grind expansion so that we can make more proteins and oils and sugars. And if the byproduct is ethanol, that's fine, but it has to be around recurring and predictable cash flows.

Operator

Our next question comes from Ken Zaslow of BMO.

Kenneth Bryan Zaslow - *BMO Capital Markets Equity Research - MD of Food & Agribusiness Research and Food & Beverage Analyst*

Of the $0.25 that you guys referenced, how much of that is within your control which would be high protein and corn oil?

George Patrich Simpkins - *Green Plains Inc. - CFO*

Yes, I mean basically, that's -- the reason we use that number because we've seen ethanol margins come up. And a high percentage of that is within our control, but also the fact that April is done and half of the rest of the quarter is done. We believe that's in our control.

If the market were to close out right now, we would be greater than that, but we're being conservative in our estimates as there's been a lot of volatility as of late in the ethanol margin. But if the market, were to -- if today was the end of the quarter and margins were -- where they are today, we would exceed those numbers.

Kenneth Bryan Zaslow - *BMO Capital Markets Equity Research - MD of Food & Agribusiness Research and Food & Beverage Analyst*

Let me rephrase it. So of the $0.25, how much of that is high protein and corn oil?

George Patrich Simpkins - *Green Plains Inc. - CFO*

Yes. Like -- I mean, basically, when we look at it, it's -- it will be in that somewhere between -- well, I mean, we're not -- we don't isolate it like that. What we give you as guidance for the year, which is $140 million to $160 million in corn oil a quarter, and we give you -- our per year and $40 million to $60 million on our protein initiatives. And so -- but a large percentage of that $0.25 so is coming from those 2 products. And that's why we had said if the market closed out today would be higher than that because ethanol is positive.

Kenneth Bryan Zaslow - *BMO Capital Markets Equity Research - MD of Food & Agribusiness Research and Food & Beverage Analyst*

Okay. As you start to develop your -- all these products and you balance your longer-term story with the short-term, can you talk about how your current operation is relative to the industry. I think if I were to look at the margin structure, it seems like it's lower than that of the industry at this point. And I get that you're investing for the future, but I get the sense that the investors are looking a little bit more for a balance between?

Hey, we want good operations and being able to deliver margins in line with some of your peers as well as we like the whipped cream on the Sunday for the future. But I'm just trying to figure out how you're balancing that and it doesn't seem like it's a full balance and how do you go forward from here?

Todd A. Becker - *Green Plains Inc. - President, CEO & Director*

Well, the going forward is a balance now. I think that we're very confident that if we were in the spot every day we would be at the market average basis, what else you're seeing. I mean, it really took us -- we've eaten a lot of absorption for -- over the last several years because the project took longer because of COVID.

But now that they're complete, we believe last quarter was basically our last quarter of negative fixed cost absorptions that were driving some results. Obviously, it was a quarter of increasing still with grain prices, but I think we all have the same opportunity there. But in general, I would say Q2 will represent more fairly and adequately where we will stand in the future relative to others.

And I think you'll see us at or better than what we've done in the past relative to that spread and so -- or well better than that spread and possibly exceeding some of those expectations. So we're there now. I mean now it's up to us just to start to make sure our plants run every day. Obviously, rail service was something that hit us hard last quarter.

It's not hitting us hard this quarter, but we've done a really good job keeping our plants open. But overall, I believe you've seen probably one of the -- is going to be the last quarter where we see any negative absorption from our old projects. So we are basically at rate today.

Kenneth Bryan Zaslow - *BMO Capital Markets Equity Research - MD of Food & Agribusiness Research and Food & Beverage Analyst*

Okay. My last question is, if I go forward, would you expect at any time in the next couple of years or any time that you have a negative EBITDA again? And what would be the situation in which that would occur if you guys are building this resilient model, and I'll leave it there?

George Patrich Simpkins - *Green Plains Inc. - CFO*

Yes I mean, obviously, a quarter where ethanol just completely is negative. Obviously, we have to watch that. But no, I don't believe unless ethanol, obviously, it's up to the industry from that standpoint. But I think the industry is gaining momentum on a lot of other opportunities, but also from the standpoint of the fuel and the announcement we've seen out of some of the E15 initiatives, we're going to watch that closely.

But the industry is obviously at times, oversupplied and undersupplied. So I would hope that there is, no other occurrences like that. But if ethanol margins completely would tank for some reason, obviously, we will be at risk of that. But in general, I don't see an environment as we move into more of our -- protein and continue to expand our oil yields where we're at today.

And then obviously -- when we get to sugar, I don't see an environment that would take us that low because then basically, the industry is completely in negative variable contribution margins. So our -- hope is that it doesn't happen again, but obviously can't predict completely every quarter in the future, but I think we're set up well to defend against that.

Operator

Our next question comes from Ben Bienvenu of Stephens.

Benjamin Shelton Bienvenu - *Stephens Inc., Research Division - MD & Analyst*

I want to ask about the corn oil. Just given the value that the market is presenting and the validation of the CI score associated with it relative to other vegetable oils? How do you decide what to do with that, whether you just sell it into the other markets or establish an off-take agreement? And as you think about the potential for off-take agreements, what are the things that you're looking for to make sure that it's in the best interest of maximizing the value of the corn oil you produce?

Todd A. Becker - *Green Plains Inc. - President, CEO & Director*

Yes, I think it's a little bit of everything. Basically, there's ways if you put on a forward sale, obviously, the bean oil futures market trades very similar in terms of moves, and you can participate in upside rallies by hedging some of that in bean oil because it does have a high correlation because once the spread is established, you're basically highly correlated to bean oil and you could use that as a hedge.

After that then you determine how much you want to keep open, how much you want to sell forward. We're open on a significant portion of our forward book, and we're evaluating that. We are seeing better bids for the last half of the year than we've seen before. I think there's more demand coming on in the last half that some of the buyers are beginning to worry about where they're going to source their low-carbon oils because when you look at end products, because when you look at fat (inaudible) and corn oil, our estimate is there's only about 15 billion pounds of that available on the market. On top of that, obviously, another 25 billion pounds of soybean oil, but when you look at the availability of low-carbon oils, there's 1 or 2 players that could take all of that, and then the rest of it's left to some of the higher carbon score products.

So we feel like we're in a really good position. We've seen bids the last half of the year at premiums to soybean oil. Obviously, you've seen a big inverse in the soybean oil market, but there's still deep demand for our product. And so from our standpoint, we feel like we're in a really good position. Now off-take agreements, we've seen several proposals come our way. And I think the way we've left it at this point is there's no benefit necessarily just doing an off-take without some benefit for our shareholders.

And there's definitely some interesting opportunities out there today we continue to evaluate, but it's got to be -- not just a place to put oil, that's not going to be a problem. I don't think there's going to be a time where corn oil won't have a home. I think it's a matter of what can we do to benefit our shareholders and why would we put together an off-take agreement without some additional benefit over the market.

And that's kind of what we're working on today. Could we enter into one? It's a possibility. But at this point, I think staying a free agent with the amount of oil that we have is -- it has been a really good thing for Green Plains and our shareholders, and I think it will continue to be that way for at least a little while longer, but if something is still compelling, then I think we will probably have to take a look at it.

Benjamin Shelton Bienvenu - *Stephens Inc., Research Division - MD & Analyst*

Yes. Okay. That makes sense. With respect to clean sugar, the announcement of Shenandoah is the first facility, was that purely a tax-driven decision, tax incentive-driven decision? And how long should we expect kind of the spool-up process for that to get to full production capacity?

And maybe second part of the question, at what point do you decide or what are the things that you're considering when you decide how many plants you want to convert to sugar as you look across your portfolio and that's all I have.

Todd A. Becker - *Green Plains Inc. - President, CEO & Director*

No, it wasn't a tax incentive decision necessarily. I think we could have probably achieved similar results anywhere we would want to put that plant. Shenandoah is really a special place, obviously, one of our best and most profitable plants as a stand-alone plant. The first place that we had high protein and performing very well, it performs at rates every -- almost every operating day.

And we see yields and proteins under our control now in terms of pressing higher yields and managing our protein levels. So we've had a lot of learnings there. So we have a great operating staff that is really ready for new technologies now. And so what we want to show is the future, and the future is going to be what Shenandoah will look like, which is a combination of all of the technologies and all the IP that we have.

And there's also an opportunity for co-location as well. So we've been talking to potential co-location partners of doing over-the-fence opportunities and Shenandoah is very unique from a workforce standpoint -- as well and kind of where it's located from a rail and a transport standpoint. So when we look at it, we're going to do a 30,000 to 40,000 bushel per day system, which is -- they grind.

That's about a little less than half their grind -- maybe 40% of their grind will go into sugar, and the rest will still go into alcohol. And so our first choice was really around best location for -- to show a full bio-refinery in a modern day with co-location partners with the opportunity for tax incentives with a great workforce that can deliver on what we want to do and close to Omaha. And so that's how we decided on that.

From there, it's going to be what the customer is looking for. We think actually one of the best locations we have is in Madison, it can hit the -- it can really hit all parts of the country as well as hit river and rail and truck access. And we'll look at that one as well. It's probably best on the list. But really, it comes down to the customer and with the customer, where they want to be with the product they're going to make and where they want to be with the product that we need to ship to them.

What I find really interesting about this is that the calls are coming in on this. There seems to be a big interest from a lot of midsized guys that are looking for new opportunities to source glucose and dextrose and food grade and industrial grade. And we believe we have a great stand-alone technology that we can build with our systems and the IP to support it.

Benjamin Shelton Bienvenu - *Stephens Inc., Research Division - MD & Analyst*

Okay. And Todd, just on the timing of the ramp-up of the facility?

Todd A. Becker - *Green Plains Inc. - President, CEO & Director*

Yes, we should break ground middle to third quarter of this year. In Shenandoah, we're engineering today. We have started to order some long lead time equipment. We expect to be running about a year after that. And one thing at this point, we are running in York today. And again, we brought in what we thought was the last step that we needed to do in York, which was around refining and ability to get to food and industrial grade and now have been able to see that as well. So that really is what gave us the big confidence to move forward and just increase the size and do another standalone facility.

Operator

Our next question comes from Steve Byrne of Bank of America.

Stephen V. Byrne - *BofA Securities, Research Division - MD in Americas Equity Research & Research Analyst*

Todd, can you talk a little bit about the characteristics of the residual DDGs after you extracted the 60% plus protein and the 1.4 on the corn oil. Was the quality of that DDG still comparable to kind of generic DDG or do you see any risks in the value of that?

Todd A. Becker - *Green Plains Inc. - President, CEO & Director*

I'll have Leslie answer that question.

Leslie van der Meulen - *Green Plains Inc. - Executive VP of Product Marketing & Innovation*

Yes, thank you for addressing that other value-added product. So when we take the protein and we move it into the 60% protein product category. In essence, the traditional DDG product really becomes a fiber product. So the energy density of that product is still very high, and that's ultimately when you look at the formulation of those products into rations, for ruminants is really the most critical point.

So while we are going to do some more validation on that particular product, right now, we actually see some interesting side effect, if you will, on that product that could lead for better applications versus the DDG. But as I said, we still need some additional data points to start making that -- or taking that position.

Stephen V. Byrne - *BofA Securities, Research Division - MD in Americas Equity Research & Research Analyst*

And Todd, in your comments earlier about evaluating the alcohol to jet technologies, and there's a few of them out there. What is your assessment of those and do you think any of them might be a good fit for your plants?

It seems like you're a little bit cautious about the biofuels given the volatility in ethanol, but the airline industry doesn't have too many options, and it would seem the alcohol-based approach could be so much more cost competitive than the vegetable oil-based approach to sustainable aviation fuel. Do you share that view?

Todd A. Becker - *Green Plains Inc. - President, CEO & Director*

I share that view, but I think that's a long game. And so we have to focus on for Green Plains is obviously what we can achieve in the short and medium term. And then I think ultimately, this industry is going to produce alcohol to jet. I think it's going to produce it from several technologies, some that are available today and some that are developing that we have seen as well.

I think it's really what baselines -- besides what we're doing on protein oil, sugar and then obviously, decarbonization. I don't think today, it's as easy to buy an ethanol plant then it was 5 years ago. I think if you want to buy one, are there a few deals out there may be, but I think the prices have gone up. And I think they've gone up because of everything that's going on with us, but also everything that's going on with lots of other producers that are developing their own differentiating technologies and opportunities.

It's really not just everything we're doing. There's some great work being done on lowering your energy use, great work being done on making more cellulosic ethanol out of your corn-based ethanol as well. That's coming our way, I think, in the future as this industry to take care of some of the low-carbon fuel markets that are looking for cellulosic. I think there's, as I said, biomass heat and electricity that are coming your way, renewables, solar and wind are going to be powering some of these plants.

And then I can go on. I mean I think -- and then you got alcohol to jet on top of everything we're doing. So I think some of these plants could go into chemical like we've talked about, it starts with dextrose and glucose and it moves into bio-chemicals and bio-products in the circular economy. And that's what I think has put a baseline notwithstanding volatility that you saw in the first quarter -- that is -- that's a 1-quarter event and maybe it's going to be a quarter event in the next 2 years again.

But the baseline of this industry is significantly different than the baseline it was 5 years ago. And it's because of everything, obviously, we're doing, but also everything that all the other producers have different plants, leading ultimately to somebody will make alcohol to jet. It probably -- it could be all of us. Actually, the demand -- we are probably the best way to supply sustainable aviation fuel.

It's now just going to come down to, obviously, how much does, it cost to build it, what are the programs around it. It does need policy. And I think the policy will come ultimately for sustainable aviation fuel. And what other catalysts will be developed over this time to make these more efficient and lower capital requirements. But ultimately, I think the demand is there. I think you're seeing it right now in jet fuel.

If we had it today, it would be used all day, every day. And I think ultimately, that's the -- one of the potential end games for this industry. That's a little bit further away for us than protein oil, sugar and carbon. But we will probably -- we will most likely participate in opportunities there as well.

Operator

Our next question comes from Adam Samuelson of Goldman Sachs.

Adam L. Samuelson - *Goldman Sachs Group, Inc., Research Division - Equity Analyst*

So I think the first question, just as we wrap up, roll everything together between kind of the updates on clean sugar on 60% protein and then the roadmap for the next few plants that are getting built. The new DCO+ technology, which it sounds like might accelerate if it's was a non-hi-pro plants in the near term? What's the latest thinking on CapEx for this year and even kind of next year, if you have an early thinking about how you're phasing different projects? And are you seeing kind of inflation on some of the capital costs for some of these things at this juncture?

Todd A. Becker - *Green Plains Inc. - President, CEO & Director*

Yes, I'll address the last question first, which is yes and we definitely have seen inflation across the board in every aspect of our business. We've seen it on wage inflation for retention and attraction. I think but everybody is seeing that so it's an equal opportunity inflation. I think that, obviously, construction costs continue to be something we watch closely on some of the commodity parts of our build.

We've seen some inflation on some of the other stuff we locked in, we've taken care of that, especially with the fact that we have our partnership with [Vegan]. So we have labor on-site every day, and we're pressing to potentially add night shifts as well to get these done even faster because we have so much opportunity around the 60 pro. And then obviously on DCO+ I mean, I think what's -- it's the second question on DCO+.

Yes, we're in Minnesota where we probably can't build as fast. We still want to build in Fairmount and Otter Tail. But in the meantime, we could put up a DCO+ system. And we've had incredible inquiries at Fluid Quip from outside parties, other independents that want to look at this technology as well because it's a very quick payback, 2 to 3-year very quick payback on the current oil prices, which I think really.

And I'll let Patrich talk about the CapEx expenses really still basically on track to what we've talked about. But I think what it illustrates is the value of Fluid Quip as well. We bought into a technology company with significant IP portfolios. And we're just starting to see some of the beginning of that. There's more to come with what they have and what they've been working on, which I think is a hidden gem within Green Plains that has great partners in it as well.

And if you take a look at the value of Green Plains today, just take our oil prices alone and our oil contribution margins and you're getting everything else for free as somebody has said in the past. So on top of that Fluid Quip -- value of Fluid Quip IP portfolio and technology company on top of that, I think Green Plains is setting itself up for great opportunities and great upside. But again, yes, we have to get through the noise of what we saw in some of these economics of fuel. But I think we're moving past that as well. Patrich, you want to comment on CapEx?

George Patrich Simpkins - *Green Plains Inc. - CFO*

Sure. As I mentioned earlier, our guidance from $250 million to $300 million remains fairly solid for the year depending on construction schedules. For the following year, probably more than -- or $150 million, that's not including anything we might do with respect to further development in clean sugar and some of the other things that Todd is talking about. But as it relates to protein and maintenance cap, that's probably what we're looking at for next year.

Todd A. Becker - *Green Plains Inc. - President, CEO & Director*

So as we've seen in Minnesota projects, real quick, as a follow-up, the Minnesota project pushing into '24, obviously we're going to put DCO+ there, which in its own right is a major contributor. And so it kind of keeps us on track, which is why we're confident on our '24, '25 numbers. But that's just -- some of that will just get funded through free cash as well as we start to generate that when everything starts to come on. But we're well-positioned from a balance sheet standpoint to execute.

Adam L. Samuelson - *Goldman Sachs Group, Inc., Research Division - Equity Analyst*

Okay. All right. That's helpful. And if I can just to maybe switch gears and follow-up with a question on the ethanol market itself. And obviously, there's been a lot of volatility year-to-date. One of the things that's a little bit harder to see in the real-time data is the export kind of picture. And just wondering kind of how you frame kind of exports at this juncture, if you're seeing incremental opportunities kind of emerge with -- especially in Europe with refining, processing, cane costs over there, if that's maybe providing a nice lift to the U.S. market right now?

Todd A. Becker - *Green Plains Inc. - President, CEO & Director*

I don't know that it's making a huge impact today, but I think it's going to in the later part of this year starting now. I think year-to-date, we're just basically status quo. We have seen some (inaudible) open up into Brazil. You saw their ethanol production down last week. I think the European opportunity around octane still sits there. I think E15 for the summer will continue to grow and expand.

And I think we just need to get out of these -- this weather pattern that we're in and get the consumer driving and buying gasoline again and kind of get into the full summer driving season, which I think is a bit delayed. Part of it is also the ability to move product right now still remains challenging, although we've done better this quarter at our plants in terms of getting service some of our plants last quarter.

But we still see challenges across the industry, which is providing opportunities for us for some dislocations at some of the destination markets, including the ability to just sell export. There's -- while there's, stocks out there, it doesn't mean there's extra capacity just to go sell exports. So but I think the demand will be there. I think that where we're priced in the world as a molecule is very favorable from an octane standpoint. And so I'm constructive for the last 8 or 9 months of the year, 8 months of the year.

Operator

Our next question comes from Kristen Owen of Oppenheimer.

Kristen E. Owen - *Oppenheimer & Co. Inc., Research Division - Associate*

Todd, you touched on this in some of the responses that you provided. But I'm wondering if you could put a finer point around the learning cycles that you've been able to achieve with the MSC conversions at Shenandoah now with Wood River. Just from an engineering standpoint, what that does for utilization and throughput as you think about ramping this next tranche of facilities in the back half of the year?

Todd A. Becker - *Green Plains Inc. - President, CEO & Director*

Yes, that's a great question. And we learned a lot. I mean, it was definitely something that we had to learn how to run these systems because it really is moving from dry milling, into more of a wet milling technology. And so our expertise was in dry milling. And so we now have our Head of Protein Operations is a 20-year wet miller who understands how to run and train up our workforce for running these technologies going forward.

So we learned a lot. Shenandoah continue to provide challenges. But now it just runs every day at rate consistently as we have dialed in what we needed to do, and there were some mechanical and engineering fixes we needed to do in terms of design. We fixed all those, and now I mean, going back towards last year, even we've just been running that plant. And now we can -- we learned how to dial it up and dial it down.

If we make a little too high protein, we can dial it down and have higher yields. And if we want higher protein, we can dial it up, and we could do it on the fly. So we've learned a lot there. We then took those learnings and applied them to Wood River, Wood River somewhat similar. We needed some engineering. Once we started up, we realized there are some deficiencies. It took us a little while to get that started.

And then before -- we'd ever do the 60 pro trial, we wanted to make sure that -- plant was running at rate as well and at rate every day, and we got to that as well. So then we went to the 60 pro trial. Where we will start up the next 3, all of those operators are training at Wood River or Shenandoah. So they are ready to run systems. They understand the systems. So it's a learning curve. And I think each plant gets better as we started up and each plant gets the rate faster.

And each plant, we learn how to dial up and dial down what we want to do with those plants. And then -- and now the learnings from what we were able to achieve in 60 Pro, those are very, very valuable as we went to full rate. And for example, the Central City operators were there for that -- thinking, looking at that as well as thinking about how they're going to run Central City when it starts up.

So a lot of learnings, but we're at the point now where we have a great workforce as well as a new Head of Protein Operations that is really very serious about consistency and quality.

Kristen E. Owen - *Oppenheimer & Co. Inc., Research Division - Associate*

That's really helpful. And my follow-up question is actually another people question, but more on the commercialization side, I mean, how -- is you called out sort of the $23 million to $24 million consistent spending in SG&A. But just wondering, do you need to invest in commercialization resources? Do you need to add folks to that side of the house in order to see some of these opportunities come to fruition?

Todd A. Becker - *Green Plains Inc. - President, CEO & Director*

Yes, this is Todd again. I think when we looked at it, that was the overall, including plant SG&A. I mean, how we've looked at corporate, yes, corporate costs have gone up a little bit. So we've made that investment. But the bigger portion of corporate costs was an overall 15% to 20% increase in wages over the last 12 months. And that's all wages, not -- that's from everyone from accountants to traders, to salespeople to IT, across the board we've seen wage, as everybody has.

So I think we're in a good steady place right now. And that was inclusive of building out what we believe is a great structure around marketing, sales and technology. And so yes, we now have a point where we're at filling stages of what we need to best get our product to market, but the base is there. And I think -- I invite anybody to come to see our innovation centers between Shenandoah, York and Omaha.

We have 3 now that have validated the whole product and can make commercial products for our partners. And obviously, there was -- you have to pre-invest when you want to sell a product for $800 or $900 or $1,000 a ton. We did some pre-investment into our sales and marketing and technology people and processes. And I think we're getting the benefit of that now so that when somebody in global aquaculture calls.

They can talk to everybody from somebody in a feed mill that makes the feed at somebody in an Aqua-lab that feeds the fish, an aquaculture nutritionist, which is a PhD that talks about the beneficial aspects of this protein and so on. And so that has been invested in. And -- but you have to invest in that to sell high-quality products like this at higher prices.

Operator

Our next question comes from Craig Irwin of ROTH Capital Partners.

Craig Edward Irwin - *ROTH Capital Partners, LLC, Research Division - MD & Senior Research Analyst*

So Todd, really just a housekeeping question here, can you talk a little bit about the utilization today now that Project 24 is complete and behind you? And maybe if you could share with us any color about additional turnarounds either in the second quarter or planned before the end of the summer driving season. And what kind of outages do you need for the 3 hi-pro plants to come online before the end of the year?

Todd A. Becker - *Green Plains Inc. - President, CEO & Director*

The last question first, we don't take plant outages when we bring on hi-pro systems. We basically turn on the hi-pro system and the stillage, whole stillage out of fermentation will just flow into there, instead of flowing to our traditional dryer system. So that's number one. We are in our last outage at Shenandoah and just coming up, I think as we speak, and that was basically take care of this half of the year outages.

And part of a lot happened in March and April, especially in March during lower run rates and a little bit left over in April and then the last one here recently. So we're in a really good position for the rest of the year. We'll still go through some normal outages at the last half of the year, but those are already a plan. So I think we're going to start to run. Our goal basically is to start to run above 90% into that 95% area, not subject to unplanned downtime.

So we're seeing that right now. We saw it. We are seeing it as we speak. And I think going forward, that's really going to help to lower the volatility of our operating platform. And just -- so we can just focus on rolling these technologies out, grinding as much corn as we can to get as much of the oil and the protein out of it and letting our plants just run after the investments we've made in our Project 24 modernization plans.

Craig Edward Irwin - *ROTH Capital Partners, LLC, Research Division - MD & Senior Research Analyst*

My next question is really a macro question. I guess maybe the trade [review] might appreciate this question. But when we look at the price of crude palm oil, which is the highest volume benchmark in the market, it's up more than 35% from the beginning of the year. The rest of the complex hasn't really moved at the same rate, but usually palm-oil does lead the path.

We look at corn oil prices over the last few months are basically flattish, yet we have done and diesel 3 coming online shortly in Port Arthur and others I would say almost frantic to buy their feedstock. What do you think we need to see for the veg oil complex or more specifically corn oil to climbing prices, is something you're constructive on at the moment? Or are you still somewhat conservative about the outlook for corn oil pricing, thinking something in $0.80 to $0.85 range is reasonable?

Todd A. Becker - *Green Plains Inc. - President, CEO & Director*

Yes, I think going forward, I think you could -- I mean, it's obviously based on the bigger oilseeds complex globally. But we're seeing obviously with the Ukraine and the reduced sun-seed production, Canada in reduced acres, weather in South America. Then obviously what we're dealing with here on the planting season in terms of in the U.S. I still think there's obviously especially on the forward curve, upside potential in all of these oils for veg oils.

And so what we're seeing in the spot market versus the end of the year, you see soybean oil is somewhat (inaudible). But we are starting to see bids show up in the last half of the year, and it's a little bit driven by what you talked about, some new demand coming on. Others worrying where they're going to get some of the corn oil and the low carbon feedstocks after basically their own [uco] or tallow supply chain.

So I think we're in a good position. I can't predict whether it's going to be 75% or 95%, but I think it's still going to remain firm in terms of bean oil and which leads to obviously firm corn oil prices. And we'll have to see what happens from there. But I think we're in a really, really good position to execute, and we will continue to drive as much oil as we can out of this kernel corn. There's still oil left, by the way.

And there's still another half-pound of oil after we get to 1.3 and 1.4. And now we have to figure out how to go after that as a company and as an industry. And we are continuing to evolve our technology in that way. But we believe we're in a pretty good place from a margin contribution for quite a long time out of this veg oil complex, if veg oil go too low, it just in sense obviously additional RD renewable diesel production to get built.

And if it goes too high, obviously the ones that are being built or are running, it's -- they're set up well, and it's going to come down to energy prices as well, which looks like, at least for the short and medium term, diesel prices remain strong, yes, fuel prices remain strong and oil prices remain strong. So I think that's overall bullish to our overall corn oil position.

Operator

Our next question comes from Eric Stine of Craig-Hallum.

Eric Andrew Stine - *Craig-Hallum Capital Group LLC, Research Division - Senior Research Analyst*

Just maybe sneak one in here at the end. Can you just give updated thoughts if you were to roll out the 60% plus yields across the platform, what that would do to your EBITDA plan, I guess, whether it's what you've put out there for 2024 or beyond?

Todd A. Becker - *Green Plains Inc. - President, CEO & Director*

Yes, if we can execute on the 60 Pro strategy, and if I can only - just indulge me for a second. We always -- thought while we're building for 50 Pro, we're really building for 60 Pro because 60 Pro becomes an ingredient, it becomes a product, it doesn't become a commodity. And so once you start hitting with a 6 in front of it and going from there, you attract a very, very different opportunity.

And so if you think about what we're going to have, which is approximately 700,000 tons of a 60% plant-based fermented product, that's really not that much product relative to the demand that is there and waiting for more products to come on. So that's the real opportunity with this technology, which is why obviously we made the investments that we did, not only in the assets, but in the technology itself.

Because that was the dream, and the dream was to make 60 pro plus and we did it. And now it's a function of how fast can we get it to market and accelerate away from even these lower proteins, which are still high, obviously, but accelerate away from that. So when you look at our -- you can [blue sky] it all you want and start using $800 or $900 a ton for a baseline product like this and continue to potentially go up from there.

You can see what the possibility is. And so if you get to 2024, on 1 billion gallons or so and you're making 60 pro and oil prices are sitting at $0.80 or $0.85, I think you could see that those numbers that we've outlined in the past would probably be low, but we have a lot of work to do to get there. But -- so this is not -- it's still not going to be and if any more in our mind, it's just when, how quickly can we do it, how quickly we can get our plants built.

We are going to get -- we do have already customers that have asked for the product. This is -- we're not asking customers, they're asking us, which is great although we are obviously making a lot of calls out as well to get our product out there. But we're seeing interest as a replacement from everything from corn gluten meal to soy-protein concentrate all the way to some fish meal replacement in some diets and so on.

So this is a really unique product. It's a really unique opportunity on top of that at 4 pounds a bushel if you think about this, wet mill protein doesn't usually exceed 2.5 pounds a bushel. Our dry mill now with our technology, we can get to 4. We believe ultimately, we're at 4 and even potentially higher pounds per bushel. And so we just think we're in a unique position, notwithstanding some of the volatility that we've seen.

But it's not stopping us, nor does it even sway anything that we were doing because ultimately, even in Q1 at a low run rate, if we had all of our protein running at 60 Pro and all of our oil running at $0.85 a pound, and maybe a sugar here and there, we wouldn't even be having the discussion about ethanol margins anymore.

And I think that answers some earlier questions about going negative on margins again. Once we're through all of this, we believe that we ultimately won't have discussions very much on ethanol anymore.

Operator

At this time, I'd like to turn the call back over to Todd Becker for closing remarks, sir.

Todd A. Becker - *Green Plains Inc. - President, CEO & Director*

Yes, thanks everybody, and thanks for coming on the call today. Obviously, a lot to talk about -- we're looking forward. We believe we're in a great place. All of our plants are back to rate. That's the first thing. Our margins obviously have come off the lows of the first quarter, and we're able to take advantage of some of that strong product pricing on corn oil and -- and obviously, now it's the 60 pro conversion.

We continue to also build customers in 50 pro. As I indicated, we are now -- got a new approval after multiple years of audits for new pet food customers, and we are working on more, and we expect more to come -- for our product. It's a unique product and how we're approaching it every day in the market. And so when you look at all of that and combine it with our opportunities around sugar and decarbonization, I think we're well set up getting to our '23, '24 and '25 strategy.

And there's nothing that we see today that doesn't say we can't accomplish those goals. And obviously, a strong balance sheet is leading the way with a curve that keeps our balance -- with a margin curve that keeps our balance sheet strong and ultimately, getting into '23 and '24 even stronger. And I think we're well-positioned to achieve success. So thanks for coming on the call today, and we'll update you next quarter. Thank you.

Operator

This concludes today's conference call. Thank you for participating. You may now disconnect.
